Proficiency Healthcare
Diagnostic Laboratories LLC
مختبرات الرعاية الصحية
الإحترافية للتشخيص ذ م م

Excellence is
Our Target"

- Clinical Chemistry
- Immunology and Serology
- Hematology
- Microbiology
- Parasitology
- Analytical Chemistry
- Anatomic Pathology, Cytology
- Digital Pathology
- Molecular Diagnostics
- Newborn Screening
- Molecular Genetics and Cytogenetics

TEST DIRECTORY

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TESTS IN ASTERISK (*) ARE ISO ACCREDITED

IN-HOUSE TESTS

17-OH Progesterone

Clinical Significance

The analysis of 17-hydroxyprogesterone (17-OHPG) is one of the three analytes along with cortisol and androstenedione that constitutes the best screening test for congenital adrenal hyperplasia (CAH), caused by either 11- or 21-hydroxylase deficiency. Analysis for 17-OHPG is also useful as part of a battery of tests to evaluate females with hirsutism or infertility; both can result from adult-onset CAH.

Further Information

Specify the age, sex, and phase of the cycle. For women, the sample must be taken at the start of the follicular phase.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday & Wednesday, result the next day

Angiotensin Converting Enzyme (ACE)

Clinical Significance

Peptidyl-dipeptidase A is a catalytic glycoprotein which cleaves angiotensin I to generate the active form of the hormone, angiotensin II. This test is of diagnostic and prognostic use in sarcoidosis and other lung pathologies such as silicosis and asbestosis (diffuse fibrous pneumoconiosis caused by inhaling asbestos fibers)

Further Information

May instruct the patient to fast for up to 12 hours before the test. You may also be instructed to stop taking an kind of steroid therapy, as steroids increase the levels of ACE in the blood.

Methodology	Enzymatic Immunoassay
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Thursday, result the next day

Acid Fast Stain*

Clinical Significance

The test is utilized to differentiate bacterial infections from that of Mycobacteria species and Nocardia species.

Further Information

Preparation depends on how the sample is collected. Samples must be submitted in 3 consecutive days.

Methodology	Ziehl Neilsen Stain-Direct Examination by Microscopy
Sample Requirement	Various Specimen under sterile condition
Sample Volume	5 ml Sputum, Gastric fluid, Early Morning Urine, CSF 1 mL, Stool 20g, Biopsies (without preservatives), Blood and Bone Marrow in EDTA tube 5 mL
Temperature	Refrigerated
Turnaround time	1 day[

Adenovirus Antigen* (SCREEN)

Clinical Significance

Adenovirus, a DNA virus known to be a common cause of asymptomatic respiratory tract infection as well as infections in the eyes, and intestinal tract. The virus is capable of infecting multiple organ systems; however, most infections are asymptomatic.

Methodology	Immunochromatography Assay Rapid
Sample Requirement	Stool
Sample Volume	10 gms
Temperature	Refrigerated
Turnaround time	1 day

Adrenocorticotropic Hormone (ACTH)

Clinical Significance

Pituitary function test useful in the differential diagnosis of Cushing syndrome, ectopic ACTH syndrome (e.g., carcinoma of lung, islet cell tumors, carcinoid tumors, medullary carcinoma of thyroid), Addison disease, hypopituitarism, and ACTH-producing pituitary tumors (e.g., Nelson syndrome).

Further Information

ACTH should be drawn between 7 AM and 10 AM. After venipuncture, immediately immerse the tubes in an ice bath. Separate plasma from cells by centrifugation within one hour after venipuncture.

Methodology	ECLIA
Sample Requirement	plasma collected in EDTA tube
Sample Volume	1 mL
Temperature	Frozen
Turnaround time	Running day: Saturday & Tuesday, result the next day

Albumin – CSF

Clinical Significance

This test is useful in evaluating the integrity of the blood brain barrier. Concentration may be increased in patients with central nervous system (CNS) inflammation, trauma, or autoimmune disease.

Methodology	Colorimetric
Sample Requirement	Cerebrospinal fluid in sterile container
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Albumin – Serum*

Clinical Significance

Albumin is a protein which is synthesized in the liver. Half-life = 15 to 20 days. It is a key transport protein, and it is also important in maintaining colloidal osmotic pressure. Reduced albumin levels are seen in malnutrition, impaired liver function, inflammation and in conditions which result in heavy loss of protein (a range of different glomerular and gastrointestinal problems). Elevated albumin levels are seen in hemoconcentration.

Further Information

Specify the age and sex.

Methodology	Colorimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Albumin – Urine*

Clinical Significance

The kidney normally prevents loss of serum albumin into the urine. However, albumin is still found in normal urine in small amounts. Urinary albumin is considered the most important marker for glomerular dysfunction.

Further Information

This test requires a urine sample. Your doctor may want to use a 24-hour urine sample. For this type of sample, you must collect all the urine you produce in 24 hours. Empty your bladder completely first thing in the morning without collecting it and note the time. Then collect your urine every time you go to the bathroom for the next 24 hours.

Methodology	Colorimetric
Sample Requirement	Random urine or 24-hour urine
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	1 day

Aldosterone – Serum

Clinical Significance

Investigation of primary aldosteronism (e.g., adrenal adenoma/carcinoma and adrenal cortical hyperplasia) and secondary aldosteronism (renovascular disease, salt depletion, potassium loading, cardiac failure with ascites, pregnancy, Bartter syndrome)

Further Information

Specify upright or reclined (sampling in upright position after 1 hr of walking; sampling in reclined position after 1 hour in supine position)

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Frozen
Turnaround time	Running day: Wednesday, result the next day

Alkaline Phosphatase – ALP*

Clinical Significance

Alkaline phosphatase (ALP) is present in a number of tissues including liver, bone, intestine, and placenta. ALP levels are used to check for liver disease or damage to the liver, bone problems as rickets, osteomalacia, bone tumors, Paget's disease, or excessive secretion of hormones that control bone growth (parathyroid hormone). And can be used to monitor treatment for Paget's disease or vitamin D deficiency.

Methodology	Colorimetric IFCC
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Allergen Food Panel*

Clinical Significance

Allergies occur when a sensitive person eats, inhales, or comes into contact with even tiny amounts of certain foods. These reactions occur with exposure to proteins called allergens and can be very mild or maybe life-threatening. This panel of test is beneficial to track any common food allergen.

Further Information

Panel is limited to: egg white, egg yolk, Cow's milk, Chocolate, Wheat flour, Soybean, Baker's yeast, Nut mix, Peanut, Orange, Strawberry, Banana, Mango, Tomato, Carrot, Onion, Chicken, Mutton/Lamb, Codfish, Shrimp/ Prawn. Any allergen not included in the said panel must be requested separately.

Methodology	Immunoblot specific to IgE
Sample Requirement	serum collected in a red-top tube
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Allergen Respiratory Panel*

Clinical Significance

Allergies occur when a sensitive person eats, inhales, or comes into contact with even tiny amounts of certain foods. These reactions occur with exposure to proteins called allergens and can be very mild or life-threatening.

Further Information

Panel is limited to: Timothy grass, Cultivate rye, Alder, Birch, Oak, Olive tree, C ragweed, Mugwort, Dermatophagoides pter, Dermatophagoides farina, Cockroach, Cat, Dog, Horse, Camel, Penicillin notatum, Cladosporium herbarum, Aspergillus fumigatus, Candida albicans, Alternaria alternata. Any allergen not included in the said panel must be requested separately.

Methodology	Immunoblot specific to IgE
Sample Requirement	serum collected in a red-top tube
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Alpha 1-antitrypsin – Serum

Clinical Significance

alpha 1-Antitrypsin (AAT) is quantitatively the most important proteinase inhibitor in serum and plasma. AAT testing is used to help diagnose alpha-1 antitrypsin deficiency as the cause of early onset emphysema, especially when a person does not have obvious risk factors such as smoking or exposure to lung irritants such as dust and fumes.

Testing is also ordered to help diagnose the cause of persistent jaundice and other signs of liver dysfunction. This is done primarily in infants and young children but may be done in people of any age.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Alpha-fetoprotein (AFP) in Serum*

Clinical Significance

Glycoprotein synthesized in the fetal liver and yolk sac which can cross the placental barrier. Disappears from the blood of both mother and child within a few weeks of birth. Assay useful in the diagnosis and monitoring of hepatocellular carcinoma and testicular cancer. Also used for the determination of neural tube defects and in Downs syndrome.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday and Tuesday, result the next day

Alanine Aminotransferases (ALT) / (SGPT)*

Clinical Significance

Alanine aminotransferase (ALT) is an enzyme present primarily in the liver. Tests are utilized to detect liver diseases. ALT is a valuable screening test to detect otherwise apparent liver disease, such as asymptomatic viral hepatitis and non-alcoholic fatty liver disease.

Further Information

Specify the age, sex and phase of the cycle. For women, the sample must be taken at the start of the follicular phase.

Methodology	IFCC w/o pyridoxal-5'-phosphate
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Ammonia

Clinical Significance

The concentration of ammonium ion (NH4+) in the plasma is low as long as the urea cycle is functioning normally in the liver. Hyperammonemia is observed whenever liver function is seriously impaired, be it acute (poisoning, fulminant viral hepatitis, etc.) or chronic (e.g., cirrhosis). It should be tested in newborns in whom hereditary metabolic disease is a possibility (e.g., an enzyme deficiency, hyperglycemia with ketosis or Reye's syndrome).

Further Information

SPECIAL OR DELICATE SAMPLE: the tubes sampled from the fasting patient must be filled completely and remain perfectly sealed. Immediately place the blood on ice, centrifuge at +4°C, settle the plasma and freeze within 30 minutes following sampling. Lipaemic and/or hemolysed samples must be removed. Sampling on EDTA only.

Methodology	Enzymatic Method with Glutamate Dehydrogenase
Sample Requirement	plasma collected in EDTA tube (non-lipemic)
Sample Volume	2 mL
Temperature	Frozen
Turnaround time	1 day

Amphetamines Screening – Urine

Clinical Significance

Substance with psychostimulant and appetite suppressant action. D-Amphetamine, methylenedioxyamphetamine (MDA) and methylenedioxymethamphetamine (MDMA or Ectasy) are detected. It can be detected in urine after administration for 24 to 48 hrs.

Further Information

It is strongly recommended to confirm a positive screening test with GC/MS (to avoid false positive risk)

Methodology	Immunoassay
Sample Requirement	Random Urine

Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	1 day

Amylase – Total*

Clinical Significance

The major sources of amylase are the pancreas and the salivary glands. The most common cause of elevation of serum amylase is inflammation of the pancreas (pancreatitis). In acute pancreatitis, serum amylase begins to rise within 6-24 hours, remains elevated for a few days and returns to normal in 3-7 days. Other causes of elevated serum amylase are inflammation of salivary glands (mumps), biliary tract disease and bowel obstruction. Elevated serum amylase can also be seen with drugs (e.g., morphine) which constrict the pancreatic duct sphincter preventing excretion of amylase into the intestine.

Methodology	Enzymatic Colorimetric IFCC
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Amylase – Pancreatic*

Clinical Significance

Evaluate pancreatic disease. Amylase is primarily produced in the pancreas and salivary glands. Isoenzymes may be used to determine the source of an elevated amylase concentration. Measurement of pancreatic amylase activity is of value in diagnosing pancreatitis and other pancreatic disorders which result in elevation of serum and urine amylase.

Methodology	Enzymatic Colorimetric IFCC
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Amylase – Urine*

Clinical Significance

Urinary amylase is useful in the consideration of macroamylasemia and pseudocyst of the pancreas. With macroamylasemia, only the serum concentration is elevated. With pseudocysts, the urinary concentration remains elevated for weeks after an episode of acute pancreatitis.

Further Information

Note the total volume and specify diuresis.

Methodology	Enzymatic Colorimetric IFCC
Sample Requirement	Early Morning Urine or 24-hour urine
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	1 day

Anaerobic Bacteria (Culture)*

Clinical Significance

Anaerobic bacteria are the greatest component of the human body's normal flora colonizing the skin, oral cavity, and genitourinary and lower gastrointestinal tracts and generally do not cause infection their presence is important for vitamin and other nutrient absorption and in preventing infection with pathogenic bacteria.

When usual skin and mucosal barriers are penetrated and in an anaerobic environment, these bacteria can behave as pathogens. Typical anaerobic infections include periodontitis, abdominal or pelvic abscesses, endometritis, pelvic inflammatory disease, aspiration pneumonia, empyema and lung abscesses, sinusitis, brain abscesses, gas gangrene, and other soft tissue infections.

Anaerobes grow aggressively in the body under anaerobic conditions and may possess a variety of virulent factors including capsules and extracellular enzymes. They also can develop resistance to antimicrobials by producing beta-lactamase and other modifying enzymes and by alterations in membrane permeability and structure of penicillin-binding proteins.

Further Information

Sterility must be maintained during collection and transport.

Methodology	Culture
Sample Requirement	Abscessess, percutaneous transtracheal aspirates, sterile body fluids, suprapubic aspirations, or wounds Transport in Anaerobic Transport Medium
Sample Volume	-
Temperature	Ambient / Room Temperature
Turnaround time	3 - 5 days

Anti-Nuclear Antibodies (ANA)*

Clinical Significance

Antinuclear antibodies are autoantibodies that bind to contents of the cell nucleus. The presence of ANA occur in patients with autoimmune diseases, both systemic and organ-specific. Measurement of antinuclear antibodies is used to screen patients suspected of having a systemic rheumatic disease or connective tissue disease.

Further Information

For positive results, ANA titer and pattern is reported. ENA (Extractable Nuclear Antigen) Panel or specific antibodies can be requested.

Methodology	Immunofluorescence
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated

Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Anti-Phospholipid Abs (IgG)

Clinical Significance

A cardiolipin antibodies test looks for a certain kind of antibody in your blood. Theantibodies are IgG (immunoglobulin G), IgA (immunoglobulin A), and IgM (immunoglobulin M). They are antibodies that form in response to cardiolipins. Cardiolipin is a phospholipid, or a kind of fat in the blood.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Anti-Phospholipid Abs (IgM)

Clinical Significance

A cardiolipin antibodies test looks for a certain kind of antibody in your blood. Theantibodies are IgG (immunoglobulin G), IgA (immunoglobulin A), and IgM(immunoglobulin M). They are antibodies that form in response to cardiolipins. Cardiolipin is a phospholipid, or a kind of fat in the blood.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

ANCA Cytoplasmic (c-ANCA / PR3) *

Clinical Significance

This test measures the amount of antineutrophil cytoplasmic antibodies in blood. These antibodies may be found inside neutrophils and monocytes (types of white blood cells). This test is used when certain blood vessel inflammation conditions such as Wegener's granulomatosis and microscopic polyangiitis are suspected.

Methodology	Immunoblot
Sample Requirement	serum collected in a red-top tube
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	Running Day: Saturday, Monday & Wednesday, result the next day

ANCA Perinuclear (p-ANCA / MPO) *

Clinical Significance

This test measures the amount of anti-neutrophil cytoplasmic antibodies in blood. These antibodies may be found inside neutrophils and monocytes (types of white blood cells). Testing has been found useful in establishing the diagnosis of suspected vascular diseases (e.g., crescentic glomerulonephritis, microscopic polyarteritis and churg-strauss syndrome), bowel disease (Crohn's Disease, ulcerative colitis, primary sclerosing cholangitis, and autoimmune hepatitis) as well as with other autoimmune diseases (drug-induced lupus, SLE, Felty's Syndrome).

Methodology	Immunoblot
Sample Requirement	serum collected in a red-top tube
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	Running Day: Saturday, Monday & Wednesday, result the next day

Androstenedione

Clinical Significance

Androstenedione is a steroid hormone produced in the adrenal glands and the that produces the androgen testosterone and the estrogens estrone and estradiol. Test is utilized for diagnosis and differential of hyperandrogenism (in conjunction with measurements of other sex-steroids).

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday, result the next day

Anti-Cardiolipin Antibodies IgG*

Clinical Significance

Cardiolipin antibodies (CA) are seen in a subgroup of patients with autoimmune disorders, particularly Systemic Lupus Erythematosus (SLE), who are at risk for vascular thrombosis, thrombocytopenia, cerebral infarct and/or recurrent spontaneous abortion. Elevations of CA associated with increased risk have also been seen in idiopathic thrombocytopenic purpura, rheumatoid and psoriatic arthritis, and primary Sjögren's syndrome.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Anti-Cardiolipin Antibodies IgM*

Clinical Significance

Cardiolipin antibodies (CA) are seen in a subgroup of patients with autoimmune disorders, particularly Systemic Lupus Erythematosus (SLE), who are at risk for vascular thrombosis, thrombocytopenia, cerebral infarct and/or recurrent spontaneous abortion. Elevations of CA associated with increased risk have also been seen in idiopathic thrombocytopenic purpura, rheumatoid and psoriatic arthritis and primary Sjögren's syndrome.

Further Information

Specify the age, sex and phase of the cycle. For women, the sample must be taken at the start of the follicular phase

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Anti-Cyclic Citrullinated Peptide (Anti-CCP)

Clinical Significance

Anti-citrullinated protein antibodies are autoantibodies that are present in the majority of patients with rheumatoid arthritis. Most studies of anti-CCP antibodies demonstrated that these autoantibodies have much improved specificity for RA compared to RF. Test is used in evaluating patients with suspected of having rheumatoid arthritis (RA) and to differentiate RA from other connective tissue diseases.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Anti-Double Stranded DNA Antibodies*

Clinical Significance

Antibodies against dsDNA belong to the group of Anti-Nuclear Antibodies (ANA), which are directed against various structures of the nucleus of the cell. They appear in a variety of rheumatoid diseases It is considered to be confirmatory test in the diagnosis of systemic lupus erythematosus (SLE).

Methodology	Immunofluorescence
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Anti Endomysium Antibodies IgA

Clinical Significance

Endomysium antibodies of interest are those of the IgA class which are a marker for celiac disease. This Autoantibody is highly specific for dermatitis herpetiformis or celiac disease.

Methodology	Immunofluorescence
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, result the next day

Anti Endomysium Antibodies IgG

Clinical Significance

This Endomysial antibody is the preferred screening test for individuals with high suspicion for IgA deficiency or patients at-risk for celiac disease who should undergo small bowel biopsy to confirm disease.

Methodology	Immunofluorescence
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, result the next day

Anti ENA Antibodies

Clinical Significance

This Endomysial antibody is the preferred screening test for individuals with high suspicion for IgA deficiency or patients at-risk for celiac disease who should undergo small bowel biopsy to confirm disease.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Anti Gliadin Antibodies IgA*

Clinical Significance

A marker for celiac disease - assayed in parallel to the anti-endomysium, anti-transglutaminase and anti-reticulin antibody tests. Useful for deciding whether or not a jejunal biopsy is warranted. After commencement of a gluten-free diet, the IgA antibodies disappear within 3 months and the IgG antibodies within 6 months, but both reappear if the diet is not maintained.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Anti Gliadin Antibodies IgG*

Clinical Significance

A marker for celiac disease - assayed in parallel to the anti-endomysium, anti-transglutaminase and anti-reticulin antibody tests. Useful for deciding whether or not a jejunal biopsy is warranted. The IgG assay is more sensitive but less specific. After commencement of a gluten-free diet, the IgA antibodies disappear within 3 months and the IgG antibodies within 6 months, but both reappear if the diet is not maintained.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Anti Intrinsic Factor

Clinical Significance

The intrinsic factor is a protein a protein essential for subsequent absorption of vitamin B12 in the ileum. Intrinsic factor antibodies prevent cobalamin resorption by ileal receptors. Serum intrinsic factor autoantibodies can be detected in 50 to 70% of pernicious anaemia patients and are highly specific for Biermer´s anemia. Test is useful the differential diagnosis of pernicious anaemia and other causes of vitamin B12 malabsorption.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Anti-Jo 1*

Clinical Significance

This test measures the amount of antibodies to anti-Jo-1 in blood. Evaluating patients with signs and symptoms compatible with a connective tissue disease. It is used to help diagnose and manage muscle diseases that affects the immune system such as polymyositis associated with autoimmune disease. It may also be used when interstitial lung disease is suspected or present.

Further Information

Test is included in the ENA Panel but can be requested separately.

Methodology	Immunoblot
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Anti Mitochondrial Antibodies (AMA)*

Clinical Significance

Anti-mitochondrial antibodies (AMA) are autoantibodies, formed against mitochondria in cells of the liver. The presence of AMAs in the blood or serum of a person is indicative of several autoimmune diseases such as primary biliary cirrhosis (PBC) (a scarring of liver tissue, confined primarily to the bile duct drainage system of the liver.

Methodology	Immunoblot
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Anti-Mullerian Hormone (AMH)

Clinical Significance

AMH is a hormone produced by follicles that each house an oocyte (a cell from which an egg develops) as it matures within the ovaries. Testing Anti-Mullerian Hormone (AMH) levels provides an indirect measurement of a woman’s egg supply which is also known as ovarian reserve.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Anti Parietal Cell Antibodies*

Clinical Significance

A marker for autoimmune gastroenteritis and pernicious anemia. Also found in patients with a predisposition to autoimmune disease. Only clearly elevated levels are significant and even then, only when there are specific symptoms.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube

Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Anti PR3 Antibodies*

Clinical Significance

Proteinase 3 antineutrophil cytoplasmic antibodies is a specific diagnostic indicator of Wegener granulomatosis (WG). A recently developed marker which is very useful in distinguishing between WG and other forms of vasculitis. Useful to follow treatment response or to monitor disease activity in patients with myeloperoxidase antibodies.

Methodology	Immunoblot
Sample Requirement	serum collected in a red-top tube
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	3 days

Anti-RNP*

Clinical Significance

Anti-RNP antibodies are autoantibodies associated with mixed connective tissue disease. Test is useful when Sharp syndrome, scleroderma or systemic lupus erythematosus, among others, are suspected.

Further Information

Test is included in the ENA Panel but can be requested separately.

Methodology	Immunoblot
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Anti Saccharomyces cerevisiae IgA (ASCA IgA) *

Clinical Significance

Accurate diagnosis of inflammatory bowel disease (IBD), in particular the differentiation between the two major IBDs ulcerative colitis and Crohn's disease, is important for treatment and prognosis. ASCA testing is clinically useful in evaluation of suspected inflammatory bowel disease, including Crohn's disease and ulcerative colitis (UC). ASCA are strongly associated to Crohn's disease and show a specificity of 95-100% for Crohn's disease.

Methodology	EIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL

Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Anti Saccharomyces cerevisiae IgG (ASCA IgG) *

Clinical Significance

Accurate diagnosis of inflammatory bowel disease (IBD), in particular the differentiation between the two major IBDs ulcerative colitis and Crohn's disease, is important for treatment and prognosis. ASCA testing is clinically useful in evaluation of suspected inflammatory bowel disease, including Crohn's disease and ulcerative colitis (UC). ASCA are strongly associated to Crohn's disease and show a specificity of 95-100% for Crohn's disease.

Methodology	EIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Anti-SCL 70*

Clinical Significance

Anti-Scl 70 antibodies is associated with mixed connective tissue disease. Test is considered to be specific for scleroderma.

Further Information

Test is included in the ENA Panel but can be requested separately.

Methodology	Immunoblot
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Anti-Sm (Smith)*

Clinical Significance

Anti-Sm is an antibody directed against Sm, a specific protein found in the cell nucleus. The test is specific for lupus erythematosus (LE). Test is useful in the confirmation of lupus and in the evaluation of patients with signs and symptoms of a connective tissue disease alongside with positive antinuclear antibodies.

Further Information

Test is included in the ENA Panel but can be requested separately.

Methodology	Immunoblot
Sample Requirement	serum collected in a red-top tube

Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Anti Smooth Muscle Antibodies

Clinical Significance

Anti-smooth muscle antibodies are antibodies directed against smooth muscle, actin, troponin, and tropomyosin. Test is utilized if chronic active hepatitis is suspected.

Further Information

Test is included in the ENA Panel but can be requested separately.

Methodology	Immunofluorescence
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Thursday, result the next day

Anti-SSA / Ro*

Clinical Significance

Mainly used to diagnose Sjogren's syndrome, a disease process that results in extreme dryness of the mouth and eyes. Sjogren's syndrome can occur either alone or along with rheumatoid arthritis (RA) or SLE (systemic lupus erythematosus).

Further Information

Test is included in the ENA Panel but can be requested separately.

Methodology	Immunoblot
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Anti-SSB / La*

Clinical Significance

Mainly used to diagnose Sjogren's syndrome, a disease process that results in extreme dryness of the mouth and eyes. Sjogren's syndrome can occur either alone or along with rheumatoid arthritis (RA) or SLE (systemic lupus erythematosus).

Further Information

Test is included in the ENA Panel but can be requested separately.

Methodology	Immunoblot
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Anti Streptolysin O (ASO)* QUANTITATIVE

Clinical Significance

Streptolysin O is an immunogenic, oxygen-labile hemolytic toxin produced by most strains of group A and many strains of groups C and G streptococci. Antistreptolysin O (ASO) Qualitative is a blood test used to detect antibodies against streptolysin O. Group A streptococci cause different infections: skin diseases or angina tonsillaris that may be followed by glomerulonephritis, acute endocarditis, sydenham's chorea, and acute rheumatic fever, when the upper respiratory tract is infected. These infections can later lead to damage of the heart or the kidneys.

Methodology	Immunoturbidimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Anti Tissue Transglutaminase IgA/IgG*

Clinical Significance

Anti-transglutaminase antibodies (ATA) are antibodies found more frequently in certain autoimmune diseases such as Coeliac disease. ATA are autoantibodies against the transglutaminase protein. High levels (titers) of ATA are found in almost all instances of coeliac disease. Test is used to evaluate patients suspected of having celiac disease, including patients with compatible clinical symptoms, patients with atypical symptoms, and individuals at increased risk (family history, previous diagnosis with associated disorder, positivity for HLA.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Antithrombin III (AT III)

Clinical Significance

This antithrombin III immunoassay is used to investigate hereditary AT III deficiency. The functional assay of AT III activity (heparin cofactor with a synthetic substrate) should be used to detect acquired AT III deficiency.

Further Information

Plasma must be separated and frozen immediately after collection.

Methodology	Immunoturbidimetric
Sample Requirement	plasma collected in CITRATED tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday, result the next day

Apolipoprotein A_1 (Apo A_1)

Clinical Significance

Apolipoprotein A1 is the major protein constituent of high-density lipoprotein. They transport excess cellular cholesterol from the extrahepatic tissue and peripheral cells to the liver. Determination of Apolipoprotein A together with Apolipoprotein B is important in lipid metabolism disorder and the risk of developing atherosclerosis. A high level of Apo A1 and low level of Apo B correlates best with a low risk of coronary and lipid disease.

Further Information

ALWAYS collect the sample in fasting state.

Methodology	Immunoturbidimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Apolipoprotein B (Apo B)

Clinical Significance

These lipid (cholesterol, triglycerides and phospholipids) transport proteins represent the main constituent of Low Density Lipoprotein particles. High levels of this apolipoprotein B concomitant with low levels of apolipoprotein A1 constitute a strong risk factor for atherosclerosis. Apo B may be measured, along with an apo A-I or other lipid tests, to evaluate risk of developing CVD and when a person has a family history of heart disease and/or hyperlipidemia, when significant increase in triglyceride levels. Sometimes Apo B is ordered to monitor treatment for hyperlipidemia.

Methodology	Immunoturbidimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Aspartate Aminotransferases (AST/SGOT) *

Clinical Significance

AST is an enzyme found in the heart, skeletal muscle, kidney, brain, pancreas, lungs. Leucocytes and erythrocytes. The highest concentration is in the liver and skeletal muscle. Test is utilized to assess, evaluate, and monitor liver diseases (alcoholic liver disease, viral hepatitis, hepatotoxicity, hemochromatosis), acute myocardial infarct, viral infections such as Epstein Barr virus, and drug toxicity.

Further Information

Test is included in Liver Function Profile and can be ordered separately.

Methodology	Enzymatic w/o pyridoxal-5'phosphate (IFCC)
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Barbiturates – Urine

Clinical Significance

Tests are performed as a screening if a disease or toxicity is suspected. Tests is used to determine if a medical condition is improving or worsening, to measure the success or failure of a medication or treatment plan and when abuse or overdose of barbiturates is suspected.

Further Information

Test is a qualitative screen. Any positive result must be confirmed using High Performance Liquid Chromatography method. Test is included in Urine Drug Panel, however, can be requested separately.

Methodology	Immunoassay
Sample Requirement	Random Urine
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	1 day

Beta 2-microglobulin

Clinical Significance

This test is used to obtain a visual, qualitative result for the early detection of pregnancy.

Further Information

This test provides a presumptive diagnosis for pregnancy. A confirmed pregnancy diagnosis should only be made upon confirmation with quantitative method.

Methodology	Immunoturbidimetric
Sample Requirement	Random Urine or Serum
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Thursday, result the next day

Beta 2-Glycoprotein IgG & IgM

Clinical Significance

Beta-2 glycoprotein 1 antibody is an autoantibody that is associated with inappropriate blood clotting. This test detects and measures one or more classes (IgG, IgM, or IgA) of beta-2 glycoprotein 1 antibodies.

Methodology	Immunoturbidimetric
Sample Requirement	Random Urine or Serum
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Beta HCG* QUALITATIVE

Clinical Significance

This test is used to obtain a visual, qualitative result for the early detection of pregnancy.

Further Information

This test provides a presumptive diagnosis for pregnancy. A confirmed pregnancy diagnosis should only be made upon confirmation with quantitative method.

Methodology	Immunochromayography
Sample Requirement	Random Urine or Serum
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Beta HCG* QUANTITATIVE

Clinical Significance

The test is intended for use as an aid in early detection and monitoring of pregnancy. In oncology it used in the management of patients with trophoblastic diseases and in the detection and monitoring of hCG-producing tumor cells of either ovarian, placental, or testicular origin.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Benzodiazepines – Urine

Clinical Significance

Tests are performed as a screening if a disease or toxicity is suspected. Tests is used to determine if a medical condition is improving or worsening, to measure the success or failure of a medication or treatment plan and when abuse or overdose of benzodiazepine is suspected.

Further Information

Test is a qualitative screen. Any positive result must be confirmed using High Performance Liquid Chromatography method. Test is included in Urine Drug Panel, however, can be requested separately.

Methodology	Immunoassay
Sample Requirement	Random Urine
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	1 day

Bicarbonate (CO2) *

Clinical Significance

Along with sodium, potassium, and chloride as part of an electrolyte panel, this panel is used to detect, evaluate, and monitor electrolyte imbalances. It may be ordered as part of a routine exam or to help evaluate a chronic or acute illness. It may be ordered at intervals to help monitor conditions, such as kidney disease and hypertension, and to monitor the effectiveness of treatment for known imbalances.

Further Information

Collect blood anaerobically. Do not remain the tube uncapped for a longer period of time.

Methodology	Enzymatic by Phosphoenolpyruvate (PEP)
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Bilirubin – Direct*

Clinical Significance

Produced from the breakdown of heme and in the reduction of biliverdin, conjugated or direct bilirubin circulates in the plasma. Tests are useful in monitoring liver diseases such as intra and extra hepatic lesions, hepatitis, cirrhosis, neoplasm, or in conditions such as Dubin Johnson syndrome, Rotor's syndrome. It is also a sensitive test for biliary disease, and cholestatic drug reactions.

Further Information

Protect specimen from light.
Serum gel tubes should be centrifuged within 2 hours of collection. Test is included in Liver Function Profile, however can be ordered separately.

Methodology	Diazo
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Bilirubin – Total*

Clinical Significance

Approximately 85% of the total bilirubin produced is derived from the heme moiety of hemoglobin, while the remaining 15% is produced from the red blood cell precursors destroyed in the bone marrow and from the catabolism of other heme-containing proteins. Bilirubin is 1 of the most commonly used tests to assess liver function. Bile duct obstruction or damage to hepatocellular structure increases the levels total bilirubin in the circulation.

Further Information

Protect specimen from light.
Serum gel tubes should be centrifuged within 2 hours of collection. Test is included in Liver Function Profile, however, can be ordered separately.

Methodology	Diazo
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Bile Acids

Clinical Significance

Measurement is used to assess liver function and increased levels may be indicative of cholestasis, reduced functional hepatic mass, congenital and acquired vascular shunts.

Further Information

Patient should be fasting.

Methodology	Enzymatic
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Wednesday, result the next day

Biopsy*

Clinical Significance

A biopsy is a procedure to remove a piece of tissue or a sample of cells from your body so that it can be analyzed for inflammatory conditions and cancer. It us also helpful in determining and monitoring the extent of a disease.

Further Information

Sample must be placed in a container with fixative (provided upon request).
Indicate the biopsy type and site. A filled histopathology requisition must also be submitted along with the sample.

The following samples are not acceptable for AP: Muscle biopsy, Renal biopsy and Bone Marrow Biopsy.

Methodology	Light Microscopy with H&E, and corresponding stain.
Sample Requirement	Tissue Specimen submerged in 10% Neutral Buffered Formalin
Sample Volume	N/A
Temperature	Ambient
Turnaround time	Running Day: Monday to Saturday, result in 5 days

Blood Culture Aerobic & Anaerobic*

Clinical Significance

This test is used to detect bacteremia. Tests include identification and sensitivity to antibiotics.

Further Information

Blood cultures should be collected prior to administration of antibiotics. Both aerobic and anaerobic culture vials must be collected per patient. Indicate the site of collection.

Methodology	Culture and Sensitivity
Sample Requirement	Sterile Whole Blood
Sample Volume	Adult: 5mL (blood) per culture bottle Pedia: 1mL (blood) per culture bottle
Temperature	Ambient
Turnaround time	1 week

Blood Group & Rh*

Clinical Significance

The ABO and Rh typing indicates the presence of specific red cell antigens of various blood group systems.

Methodology	Column Agglutination
Sample Requirement	EDTA Whole Blood
Sample Volume	1 mL
Temperature	Ambient
Turnaround time	1 day

Body Fluid Cytology*

Clinical Significance

Cytology is the study of the structure and function of cells; the examination of cells under a microscope as used in the diagnosis of cancer. Body fluid cytology is an important diagnostic test for various malignant and benign conditions. Effusions can be caused by inflammatory, infectious, and benign; neoplastic or malignant; and primary or metastatic diseases.

Further Information

Indicate type of body fluid, and site of collection on the requisition.

Methodology	Stain and Microscopy
Sample Requirement	Body Fluid in Sterile Container except for 24 Hr urine, fluid removed from therapeutic reasons, fatty fluid removed from liposuction and CSF.
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running Day: Monday to Saturday, result in 2 days

Body Fluid Culture and Sensitivity

Clinical Significance

Test is used to detect bacterial infection. Test includes identification and antibiotic sensitivity.

Further Information

Indicate type of body fluid, and site of collection on the requisition.

Methodology	Culture and sensitivity
Sample Requirement	Body Fluid in Sterile Container
Sample Volume	1 mL
Temperature	Ambient
Turnaround time	3-5 days

Bone Marrow Aspirate Studies

Clinical Significance

A bone marrow aspiration removes only the marrow. This test is often done to find the reason for many blood disorders and may be used to find out if cancer or infection has spread to the bone marrow.

Methodology	Microscopy
Sample Requirement	Bone Marrow Aspirate Slide
Sample Volume	N/A
Temperature	Ambient
Turnaround time	2 days

Brucella Antibodies Screening

Clinical Significance

Test used to detect antibodies against Brucella. Brucella is small gram-negative bacteria, responsible for a disease known as brucellosis. Brucellosis is a highly contagious zoonosis caused by ingestion of unsterilized milk or meat from infected animals or close contact with their secretions.

Methodology	Latex Agglutination
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

C3 Complement*

Clinical Significance

Complement factor C3 is a factor common to both classical and alternative pathways. The concentration of C3 and its degradations products (including (C3c) can be evaluated as a parameter for the activation of the complement system. Lowered values are indicative of activation such as those found in systemic lupus erythematosus, acute serum sickness and various different conditions associated with circulating immune complexes.

Methodology	Immunoturbidimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

C4 Complement*

Clinical Significance

Test used to detect antibodies against Brucella. Brucella is small gram-negative bacteria, responsible for a disease known as brucellosis. Brucellosis is a highly contagious zoonosis caused by ingestion of unsterilized milk or meat from infected animals or close contact with their secretions.

Methodology	Immunoturbidimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Cancer Antigen (CA) 125*

Clinical Significance

CA-125 is the most frequently used biomarker for ovarian cancer detection. This assay is indicated for use as an aid in the detection of residual or recurrent ovarian carcinoma in patients who have undergone first-line therapy and would be considered for second-look procedures. It is also indicated for serial measurement of CA 125 to aid in the management of cancer patients.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Cancer Antigen (CA) 153*

Clinical Significance

Test is used as an aid in the early detection of recurrence in previously treated stage II and III breast cancer patients. It is also utilized to monitor response to therapy in metastatic breast cancer patients. Useful for monitoring treatment and detecting recrudescence or metastasis in this disease. Its levels may also be increased in lung and ovarian cancer, and in certain non-malignant conditions involving the liver, the breast, the lung and the ovaries.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Cancer Antigen (CA) 19-9*

Clinical Significance

Useful for therapeutic monitoring in pancreatic, gastrointestinal and hepatobiliary malignancies. Its levels may also be increased in patients with pancreatitis, biliary lithiasis, cirrhosis or viral hepatitis, cystic fibrosis.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Calcitonin

Clinical Significance

Calcitonin secretion is stimulated by hypercalcemia. It acts as a physiological antagonist of parathyroid hormone. An ideal marker for medullary cancers of the thyroid gland.

Further Information

Sample must be separated and frozen in less than 4 hours.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday & Tuesday, result the next day

Calcium – Serum*

Clinical Significance

Serum calcium levels and hence the body content is controlled by parathyroid hormone, calcitonin, and vitamin D. An imbalance in any of these modulators leads to alterations of the body and serum calcium levels. Increases in serum PTH or vitamin D are usually associated with hypercalcemia. Increased serum calcium levels may also be observed in multiple myeloma and other neoplastic diseases. Hypocalcemia may be observed in hypoparathyroidism, steatorrhea, nephrosis, and pancreatitis.

Methodology	Colorimetric with o-cresolphthalein complexone
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Calcium – Ionized

Clinical Significance

Ionized calcium is calcium in your blood that is not attached to proteins. It is also called free calcium. Tests are utilized to assess calcium states during liver transplantation surgery, cardiopulmonary bypass, or any procedure requiring rapid transfusion of whole blood in neonates and in critically ill patients.

Further Information

You should not eat or drink for at least 6 hours before the test.

Methodology	Colorimetric with o-cresolphthalein complexone
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday and Tuesday, result the next day

Calcium – Urine*

Clinical Significance

Calcium is an element necessary to form electrical gradients across membranes, an essential cofactor for many enzymes, and the main constituent in bone. It is excreted in urine and stool. Test is utilized in the identification of abnormal physiologic states causing excess or suppressed excretion of calcium (such as hyperparathyroidism), vitamin D abnormality, diseases that destroy bone, prostate cancer, and drug treatment (such as thiazide therapy).

Further Information

Note total volume for 24-hour urine.

Methodology	Colorimetric with o-cresolphthalein complexone
Sample Requirement	Random Urine or 24-Hour Urine
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Calprotectin

Clinical Significance

Used to diagnose inflammatory bowel disease (IBD), including Chron's disease and ulcerative colitis, or to differentiate IBD from irritable bowel syndrome (IBS).

Methodology	ELISA
Sample Requirement	Stool
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Carbamazepine*(Tegretol)

Clinical Significance

Carbamazepine is an anticonvulsant and mood-stabilizing drug used primarily in the treatment of epilepsy and bipolar disorder, as well as trigeminal neuralgia. It is also used off-label for a variety of indications, including attention-deficit hyperactivity disorder (ADHD), schizophrenia, phantom limb syndrome, paroxysmal extreme pain disorder, and post-traumatic stress disorder.

Further Information

Not to be confused with oxcarbazepine. Requisition must contain:

- ✓ the sampling date and time
- ✓ the date and time of the last dose
- ✓ dosage
- ✓ the treatment start date and/or the date of any change of dosage.

Methodology	Fluorescence Polarization
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Wednesday, result the next day

Complete Blood Count*

Clinical Significance

Complete blood count is a panel of test inclusive of cellular counts (RBC, WBC and differential, Platelets), and blood indices. It is used to assess, diagnose and monitor a medical condition. To monitor medical treatment such as chemotherapy.

Further Information

Specimen must arrive within 24 hours of the draw. Do Not Refrigerate. Refrigeration may cause platelet clumping.

Methodology	Fluorescence Flow Cytometry Cellular Impedance SLS hemoglobin
Sample Requirement	EDTA Whole Blood
Sample Volume	1 mL
Temperature	Ambient
Turnaround time	1 day

Carcinogenic Embryonic Antigen (CEA)*

Clinical Significance

A fetal protein was found in the liver, intestine and pancreas. Following birth, CEA levels fall but rise again in patients with cancer of the digestive tract or certain non-malignant conditions (rectal polyps, hepatitis, cirrhosis, pancreatitis and Crohn's disease) as well as in smokers.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Cell Count in Body Fluid – Aspirate, CSF

Clinical Significance

Tests are utilized as an aid in the diagnosis of joint disease, systemic disease, inflammation, malignancy, infection, and trauma.

Methodology	Microscopy
Sample Requirement	Aspirate Fluid, CSF
Sample Volume	1 mL
Temperature	Ambient
Turnaround time	1 day

Ceruloplasmin*

Clinical Significance

Ceruloplasmin is a protein synthesized by the liver and shows an acute phase response. Normally, the ceruloplasmin concentration is very low in new-born and steadily increases with age. As ceruloplasmin is increasingly expressed during the acute-phase response it is generally detected in elevated levels during all inflammatory diseases. Decreased levels are found in primary biliary cirrhosis, primary biliary atresia, and in some cases of severe hepatitis.

Methodology	Immunoturbidimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated

Turnaround time	Running day: Monday & Thursday, result the next day

Cervical Cytology – PAP Smear*

Clinical Significance

Cervical Cytology is a method of cervical screening used to detect potentially pre-cancerous and cancerous processes in the endocervical canal (transformation zone). During each test some cells are removed from the cervix, with a plastic brush. The cells, after processing, are examined under a microscope to look for early changes that, if ignored and not treated, could develop into cancer of the cervix.

Further Information

Sample must be immersed immediately with fixative 95% ethanol or spray fixative.
Vial must be properly sealed to avoid leakage. Leaked samples are subject for specimen rejection.

Methodology	Liquid Based Cytology
Sample Requirement	Liquid Based Pap (Container Provided)
Sample Volume	1 mL
Temperature	Ambient
Turnaround time	Running day: Monday to Saturday, result after 2 days

Chlamydia Trachomatis IgG & IgM

Clinical Significance

Chlamydia trachomatis is the most common sexually transmitted bacterial infection. Up to 70% of women and 30% of men may be asymptomatic. Infection may lead to tubal pregnancy, pelvic inflammatory disease and infertility.

Further Information

Antibodies IgA and IgM can be requested separately.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, result the next day

Chlamydia Trachomatis Antigen (SCREEN)

Clinical Significance

Chlamydia trachomatis is the most common sexually transmitted bacterial infection. Up to 70% of women and 30% of men may be asymptomatic. Infection may lead to tubal pregnancy, pelvic inflammatory disease and infertility.

Methodology	Immunochromatographic
Sample Requirement	Endocervical, vaginal, or male urethral swab First void urine (patient should not urinate for 1 hour prior to collection
Sample Volume	1 swab or 2 mL urine
Temperature	Refrigerated
Turnaround time	1 day

Chloride – Serum*

Clinical Significance

Chloride is the major anion in the body that maintains proper body water distribution, osmotic pressure, and normal anion-cation balance in the extracellular fluid compartment. This test is done to evaluate symptoms such as prolonged vomiting, diarrhea, weakness, respiratory distress and if an electrolyte imbalance is detected.

Methodology	Indirect Ion Selective Electrode
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Chloride – Urine*

Clinical Significance

Chloride is the major anion in the body that maintains proper body water distribution, osmotic pressure, and normal anion-cation balance in the extracellular fluid compartment. This test is done to evaluate symptoms such as prolonged vomiting, diarrhea, weakness, respiratory distress and if an electrolyte imbalance is detected.

Further Information

Indicate total volume

Methodology	Indirect Ion Selective Electrode
Sample Requirement	24-Hour Urine
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	1 day

Cholesterol HDL*

Clinical Significance

High-density lipoprotein is one of the five major groups of lipoproteins. HDL cholesterol is a tool used to assess an individual's risk of developing CHD since a strong negative relationship between HDL cholesterol concentration and the incidence of coronary heart disease.

Further Information

Collect a fasting sample

Methodology	Homogenous Enzymatic Colorimetry
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Cholesterol LDL*

Clinical Significance

Low-density lipoprotein is one of the five major groups of lipoproteins, it plays a key role in causing and influencing the progression of atherosclerosis and, in particular, coronary sclerosis. The majority of cholesterol stored in atherosclerotic plaques originates from LDL. Tests are utilized to evaluate cardiovascular risk.

Further Information

Collect a fasting sample.

Methodology	Homogenous Enzymatic Colorimetry
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Cholesterol TOTAL*

Clinical Significance

Cholesterol assays are used for screening for atherosclerotic risk and in the diagnosis and treatment of disorders involving elevated cholesterol levels as well as lipid and lipoprotein metabolic disorders.

Further Information

Collect fasting sample

Methodology	Homogenous Enzymatic Colorimetry
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Clostridium Difficile Antigen* (SCREEN) – Stool

Clinical Significance

Clostridium difficile is a gram-positive anaerobic bacillus which has been identified as a common nosocomial pathogen that causes diarrhea and pseudomembranous colitis associated with antibiotic therapy. The test serves as a screening examination for the presence of Clostridium Difficile in stool specimens.

Methodology	Immunochromatography
Sample Requirement	Stool
Sample Volume	10 grams
Temperature	Refrigerated
Turnaround time	1 day

Cold Agglutinins

Clinical Significance

Cold agglutinins are cold reacting antibodies made by the immune system in response to infection, low levels are found in healthy individuals. High levels of cold agglutinins can cause autoimmune hemolytic anemia.

Further Information

Allow blood to clot at room temperature and separate serum from cells immediately after clotting.
Do Not Refrigerate prior to separation.

Methodology	Gel-Filtration
Sample Requirement	serum and EDTA Whole Blood
Sample Volume	1 mL Serum + 5mL EDTA
Temperature	Refrigerated
Turnaround time	2 days

Coomb's Direct*

Clinical Significance

Antibody (IgG) or complement components secondary to the action of IgM antibody may be present on the patient's own RBCs or on transfused RBCs. The direct Coombs' test is used to detect antibodies found on the surface of red blood cells. Many diseases and drugs (including quinidine, methyldopa, and procainamide) can cause this. These antibodies sometimes destroy red blood cells and cause anemia.

Methodology	Column Agglutination
Sample Requirement	EDTA Whole Blood
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	1 day

Coomb's Indirect*

Clinical Significance

The indirect Coombs test identifies antibodies to red blood cells. This test is used to help screen for suspected ABO incompatibility reaction. It is also used when a Rh incompatibility reaction in pregnant women is suspected.

Methodology	Column Agglutination
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Copper

Clinical Significance

Useful for diagnosis of Wilson's disease, primary biliary cirrhosis (PBC) and primary sclerosing cholangitis (PSC). In normal serum, more than 95% of the copper is incorporated into the enzyme, ceruloplasmin; the remaining copper is loosely bound to albumin. A deficiency in copper results in severe derangement in growth and metabolism and impairment of erythropoiesis.

Methodology	Colorimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Wednesday, result the next day

Cortisol – Serum*

Clinical Significance

The cortisol status of a patient is used to diagnose the function or malfunction of the adrenal gland, the pituitary, and the hypothalamus. Thereby cortisol serum concentrations are used for monitoring of several diseases with overproduction (Cushing's syndrome) or underproduction of cortisol (Addison's disease). The test is also used for the monitoring of several therapeutic approaches (e.g. dexamethasone suppression therapy in Cushing's syndrome and hormone replacement therapy in Addison's disease).

Further Information

Diurnal variations are observed for this analyte; hence sample collection time must always be included in the requisition.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Cotinine (Nicotine)

Clinical Significance

This assay is used for the detection of nicotine and cotinine in urine to determine the tobacco exposure status of the individual. Nicotine has a short half-life of approximately forty minutes; Its presence may indicate recent tobacco exposure. Cotinine, the major nicotine metabolite, has a half-life of 24 hours and is detectable for several days after cessation of tobacco exposure.

Methodology	Immunochromatographic
Sample Requirement	Urine
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	1 day

C-Peptide*

Clinical Significance

C-Peptide is a polypeptide chain of molecular mass derived from the proteolytic cleavage of the precursor molecule pro-insulin. Measurements of C-peptide, together with insulin and glucose, are used as an aid in the differential diagnosis of hypoglycemia and is used to assess the success of islet transplantation and for monitoring after pancreatectomy.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

C-Reactive Protein (CRP)* QUALITATIVE

Clinical Significance

C Reactive Protein (CRP) is synthesized by hepatic cells and is an acute phase reactant. Its levels only rise during inflammation for which it acts as an early marker.

Methodology	Immunoturbidimetry
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

C-Reactive Protein High Sensitive (CRP Hs) * QUANTITATIVE

Clinical Significance

Highly sensitive measurement of CRP is used as an aid in assessing the risk of future coronary heart disease. When used as an adjunct to other laboratory evaluation methods of acute coronary syndromes, it may also be an additional independent indicator of recurrent event prognosis in patients with stable coronary disease or acute coronary syndrome.

Methodology	Particle Enhanced Turbidimetry
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Creatine Phosphokinase Total (CPK)*

Clinical Significance
Creatine phosphokinase (CPK) is an enzyme found mainly in the heart, brain, and skeletal muscle. Serum levels of the CK enzyme are elevated in skeletal muscle disease, particularly muscular dystrophy. It is also increased after cerebral ischemia, acute cerebrovascular disease, and head injury.

Further Information
Avoid pumping of fist whilst collection.

Methodology	Enzymatic UV
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Creatine Kinase – MB (CK-MB) *

Clinical Significance
CK-MB is one of the isoenzymes of creatine kinase. The MB isoenzyme has been found in appreciable amounts only in myocardial tissue. Determinations of CK isoenzymes are frequently used in supporting the diagnosis of suspected myocardial infarction.

Further Information
The MB isoenzyme of CK is most commonly elevated in acute myocardial infarction (AMI). In AMI, plasma CK-MB typically rises some four to six hours after the onset of chest pains, peaks within 12 to 24 hours, and returns to baseline levels within 24 to 48 hours. The pattern of serial CK-MB determinations is more informative than a single determination.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	2 hours

Creatinine Clearance

Clinical Significance
CK-MB is one of the isoenzymes of creatine kinase. The MB isoenzyme has been found in appreciable amounts Glomerular Filtration Rate (GFR)provides a total measure of kidney function. This rate reflects nephron function. Creatinine clearance is a common aid to estimate GFR. This is calculated from the creatinine measured in a 24-hour urine collection and from a serum sample collected during the collection period of the 24-hour urine.

Further Information
Note the total volume.

Methodology	Calculated
Sample Requirement	serum and 24-Hour Urine
Sample Volume	1 mL Serum + 10mL 24-Hour Urine
Temperature	Refrigerated
Turnaround time	1 day

Creatinine – Serum*

Clinical Significance
Creatinine is derived from the metabolism of creatine. Along with urea, creatinine level is elevated in patients with renal malfunction with decreased glomerular filtration. This test is a more reliable renal function screening test than urea since it is not affected by diet, degree of hydration, and protein metabolism.

Methodology	Kinetic Jaffe
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Crosslaps (Beta Crosslaps) – Serum

Clinical Significance
Peptide produced by the breakdown of collagen I. A predictive marker for bone resorption, it is used to monitor osteoporosis and the response to its non-treatment.

Further Information
Sample in early morning FASTING STATE before 9 a.m., and always at the same time for repeat prescriptions.
Sample must be frozen in less than 4 hours. Hemolysis is subject to rejection.
Serum sample is stable at refrigerated temperature for < 4 hours.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	2 mL
Temperature	Frozen
Turnaround time	Running day: Monday & Thursday, result the next day

Crossmatch or Compatibility Test*

Clinical Significance
A compatibility test or crossmatch is used to determine before transfusion, serologic compatibility between a donor's blood and an intended recipient.

Methodology	Column Agglutination
Sample Requirement	1. Recipient's serum (plain tube) less than 72 hours old (sample age may not exceed 3 days in patients who have been recently transfused,

	or pregnant within the past 3 months, or if relevant medical/transfusion history is unknown or uncertain. 2. Donor's red cell suspension (segment from intended donor blood units or EDTA whole blood). 3. Blood bag of donor
Sample Volume	3 mL Recipient Serum and 3 ml Donor's red cell (EDTA Whole blood)
Temperature	Refrigerated
Turnaround time	2 hours

Culture and Sensitivity*

Clinical Significance

Culture identification and sensitivity in specific body sites aids in the definitive diagnosis of bacterial related diseases. It is used to identify bacterial species and which medication it is susceptible to for treatment.

Further Information

Indicate type of specimen and the site of collection. Collect sample and place in a sterile container. Send them immediately. Sterile transport swabs are provided upon request for collections of throats, wound, nasal, eye and genital sites.

Methodology	Culture
Sample Requirement	Various Specimen
Sample Volume	---
Temperature	Ambient
Turnaround time	3 – 5 days

Culture Fungal/Yeast*

Clinical Significance

Culture identification and sensitivity in specific body sites aid in the definitive diagnosis of fungal related diseases.

Further Information

Indicate type of specimen and the site of collection. Collect sample and place in a sterile container. Send them immediately. Sterile transport swabs are provided upon request for collections of throats, wound, eye and genital sites.

Methodology	Culture
Sample Requirement	Various Specimen
Sample Volume	---
Temperature	Ambient
Turnaround time	4 weeks

Cytomegalovirus Antibodies IgG & IgM*

Clinical Significance

Cytomegalovirus is a member of the Herpesviridae family causing infections which are followed by lifelong latency in the host with occasional reactivations as well as recurrent infections. CMV infections are usually mild and asymptomatic. However, primary maternal CMV infection during pregnancy carries a high risk of intra uterine transmission which may result in sever fetal damage, including growth and mental retardation, jaundice and CNS abnormalities. Diagnosing acute primary CMV infection is most commonly made by the detection of anti-CMV-specific IgG and IgM antibodies.

Further Information

Antibodies can be ordered separately.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday, Tuesday & Thursday, result the next day

D-Dimer*

Clinical Significance

D-Dimers are fibrin-specific breakdown products whereas FDP are generated in the degradation of both fibrin and fibrinogen. This test is ordered, along with other laboratory tests and imaging scans, to help rule out, diagnose, and monitor diseases and conditions that cause hypercoagulability, a tendency to clot inappropriately, forming DIC. This test alone must not be used to exclude deep vein thrombosis and/or pulmonary embolism.

Further Information

Indicate the clinical symptoms.

Methodology	Particle Enhanced Immunoturbidimetry
Sample Requirement	plasma collected in CITRATED tube
Sample Volume	1 mL
Temperature	Frozen
Turnaround time	2 hours

Dehydroepiandrosterone Sulfate (DHEA-S)*

Clinical Significance

Dehydroepiandrosterone (DHEA) sulfate is derived from DHEA and secreted by the adrenal cortex. Together with testosterone, DHEA-S assays represent the assay of choice for initial screening tests to determine whether androgen values are elevated in hirsutism. The DHEA-S test is useful as an additional investigation for infertility, and in conjunction with cortisol, it can be used for assessment of adrenocortical function.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday, result the next day

Digoxin*

Clinical Significance

Digoxin is a digitalis glycoside that exerts a positive inotropic effect that subsequently increases the contractile response of the myocardial fibers in patients experiencing congestive heart failure. Cardiac glycosides also can produce several electrophysiologic effects that produce negative chronotropic effects on the human heart. These effects tend to slow down and regulate a rapid, irregular beat like that found in patients experiencing cardiac arrhythmias. It is used to treat congestive heart failure and certain kinds of arrhythmia. Tests are utilized to monitor digoxin therapy.

Further Information

Not to be confused with oxcarbazepine. Requisition must contain:

- ✓ the sampling date and time of the last dosage
- ✓ the treatment start date and/or the date of any change of dosage.
- ✓ the dosage data (quantity administered, frequency, administration route)

Methodology	KIMS
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Wednesday, result the next day

Down Syndrome Risk / 2nd Trimester Screening (Triple Test)

Clinical Significance

Multiple marker serum screening has become a standard tool used in obstetrical care to identify pregnancies that may have an increased risk for certain birth defects, including neural tube defects (NTDs), Down syndrome, and trisomy 18. The screen is performed by measuring analytes in maternal serum that are produced by the fetus and the placenta. The analyte values along with maternal demographic information such as age, weight, gestational age, diabetic status, and race are used together in a mathematical model to derive a risk estimate. The laboratory establishes a specific cutoff for each condition, which classifies each screen as either screen-positive or screen-negative. A screen positive result indicates that the value obtained exceeds the established cutoff. A positive screen does not provide a diagnosis but indicates that further evaluation should be considered.

Further Information

Test is ordered during 14 to 18 weeks of gestation. An ultrasound report must be submitted along with the requisition. Samples must be collected within 2 days after ultrasound. A filled Triple Test form must also be submitted.

Methodology	Enzyme Immunoassay
Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result after 2 days

Epstein Barr Virus VCA IgG*

Clinical Significance

Epstein Barr Virus (EBV) of the herpesviridae family with an affinity for B lymphocytes. EBV Infects a large volume of the population, with transmission by saliva. The primary infection occurs during infancy, where it is often nonspecific and asymptomatic, then presents itself in an infectious stage in adolescence. EBV is an oncogenic virus and is associated with certain neoplasias, including nasopharyngeal carcinoma (NPC), Burkitt's lymphoma and, in immunodeficient patients (e.g., patients with AIDS or on immunosuppressant therapy following transplantation) lymphoblastic B-cell lymphoma. Classic serological analysis involves assaying for anti-VCA IgG and IgM antibodies and anti-EBNA IgG antibodies. IgM antibodies are present for the first three months and when they disappear, anti-EBNA IgG antibodies appear. Assaying anti-EA antibodies can be of use in active infections. High titers of anti-VCA and anti-EA IgA antibodies are associated with NPC.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Epstein Barr Virus VCA IgM

Clinical Significance

Epstein Barr Virus (EBV) of the Herpesviridae family with an affinity for B lymphocytes. EBV Infects a large volume of the population, with transmission by saliva. The primary infection occurs during infancy, where it is often nonspecific and asymptomatic, then presents itself in an infectious stage in adolescence. EBV is an oncogenic virus and is associated with certain neoplasia's, including nasopharyngeal carcinoma (NPC), Burkitt's lymphoma and, in immunodeficient patients (e.g., patients with AIDS or on immunosuppressant therapy following transplantation) lymphoblastic B-cell lymphoma. Classic serological analysis involves assaying for anti-VCA IgG and IgM antibodies and anti-EBNA IgG antibodies. IgM antibodies are present for the first three months and when they disappear, anti-EBNA IgG antibodies appear. Assaying anti-EA antibodies can be of use in active infections. High titers of anti-VCA and anti-EA IgA antibodies are associated with NPC.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Epstein Barr Virus VCA Early IgG*

Clinical Significance

Epstein Barr Virus (EBV) of the herpesviridae family with an affinity for B lymphocytes. EBV Infects a large volume of the population, with transmission by saliva. The primary infection occurs during infancy, where it is often nonspecific and asymptomatic, then presents itself in an infectious stage in adolescence. EBV is an oncogenic virus and is associated with certain neoplasia's, including nasopharyngeal carcinoma (NPC), Burkitt's lymphoma and, in immunodeficient patients (e.g., patients with AIDS or on immunosuppressant therapy following transplantation) lymphoblastic B-cell lymphoma. Classic serological analysis involves assaying for anti-VCA IgG and IgM antibodies and anti-EBNA IgG antibodies. IgM antibodies are present for the first three months

and when they disappear, anti-EBNA IgG antibodies appear. Assaying anti-EA antibodies can be of use in active infections. High titers of anti-VCA and anti-EA IgA antibodies are associated with NPC.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Epstein Barr Virus VCA EBNA IgG*

Clinical Significance

Epstein Barr Virus (EBV) of the herpesviridae family with an affinity for B lymphocytes. EBV Infects a large voulme of the population, with transmission by saliva. The primary infection occurs during infancy, where it is often nonspecific and asymptomatic, then presents itself in an infectious stage in adolescence. EBV is an oncogenic virus and is associated with certain neoplasias, including nasopharyngeal carcinoma (NPC), Burkitt's lymphoma and, in immunodeficient patients (e.g. patients with AIDS or on immunosuppressant therapy following transplantation) lymphoblastic B-cell lymphoma. Classic serological analysis involves assaying for anti-VCA IgG and IgM antibodies and anti-EBNA IgG antibodies. IgM antibodies are present for the first three months and when they disappear, anti-EBNA IgG antibodies appear. Assaying anti-EA antibodies can be of use in active infections. High titers of anti-VCA and anti-EA IgA antibodies are associated with NPC.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Erythrocyte Sedimentation Rate (ESR)*

Clinical Significance

The erythrocyte sedimentation rate (ESR) is a nonspecific measurement used to detect and monitor an inflammatory response to tissue injury (an acute phase response) in which there is a change in the plasma concentration of several proteins (termed acute phase proteins). This procedure consists of allowing a specific amount of blood to sit in a vertical position for a period of time (usually 1 hour).

Methodology	Modified Westergren
Sample Requirement	EDTA Whole blood
Sample Volume	4-5 mL
Temperature	Ambient
Turnaround time	1 day

Estradiol*

Clinical Significance

An estradiol test measures the amount of a hormone called estradiol in the blood. The determination of estradiol is utilized clinically in the elucidation of fertility disorders in the hypothalamus-pituitarygonad axis, gynecomastia, estrogen-producing ovarian and testicular tumors and in hyperplasia of the adrenal cortex. Other clinical indications are the monitoring of fertility therapy and determining the time of ovulation within the framework of in vitro fertilization.

Further Information

This biological parameter has a circadian rhythm (maximum concentration in morning) with sufficiently significant influence on the clinical interpretation.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Ethanol (Alcohol)*

Clinical Significance

This test is utilized for the following indications:

- ✓ Check the amount of alcohol in the blood when a person is suspected of being legally drunk (intoxicated). Symptoms of alcohol intoxication include confusion, lack of coordination, unsteadiness that makes it hard to stand or walk, or erratic or unsafe driving.
- ✓ Find the cause of altered mental status, such as unclear thinking, confusion, or coma.
- ✓ Check to see whether alcohol is present in the blood at times when the consumption of alcohol is prohibited-for example, in underage people suspected of drinking or in people enrolled in an alcohol treatment program.

Methodology	Enzymatic
Sample Requirement	serum collected in a red-top tube
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	1 day

Factor I – Fibrinogen*

Clinical Significance

Fibrinogen is a glycoprotein synthesized in the liver and by megakaryocytes. An increase of fibrinogen level is found in cases of diabetes, inflammatory syndrome, obesity; a decrease of fibrinogen level is observed in DIC and fibrinogenolysis.

Further Information

Sample stability at Room Temperature is <4 Hours.
Sample must be frozen in less than 1 Hour.

Methodology	Photo Optical, Clot-based
Sample Requirement	plasma collected in CITRATED tube
Sample Volume	2 mL
Temperature	Frozen

Turnaround time	1 day

Factor II Mutation 20210 Mutation (G>A)

Clinical Significance

Prothrombin 20210 Mutation, also called Factor II Mutation, is a genetic condition that causes an increase in the likelihood of your blood forming dangerous blood clots. All individuals make the prothrombin (also called factor two) protein that helps blood clot. However, there are certain individuals who have a DNA mutation in the gene used to make prothrombin (also called prothrombin G20210A or the factor II (two mutations). They are said to have an inherited thrombophilia (clotting disorder) called prothrombin G20210A. When this occurs, they make too much of the prothrombin protein.

Methodology	Single Nucleotide polymorphisms (SNPs)
Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	Running day: Every other Saturday, result the next day

Factor V Leiden Mutation

Clinical Significance

Factor V Leiden is a common cause of inherited thrombophilia. The R506Q mutation leads to resistance of degradation of the factor V protein by activated protein C (APC). Heterozygotes, or individuals who have one copy of the mutation, carry a 2- to 10-fold increased risk of venous thrombosis. Homozygotes, or individuals who have two copies of the mutation, carry a >10-fold increased risk.

Methodology	Single Nucleotide polymorphisms (SNPs)
Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	Running day: Every other Saturday, result the next day

Factor VIII – Antihemophilic A

Clinical Significance

Congenital Factor VIII deficiency is the cause of hemophilia B which is an X-linked disease. The severity of this disease is directly proportional to the levels of Factor VIII in the blood. Severe disease is associated with levels of below 0.01 kIU/L (1% of normal) whereas, with levels of over 15%, the pathology is relatively mild. Low Factor VIII levels are also observed in von Willebrand's disease (see "von Willebrand Factor"). Anti-Factor VIII autoantibodies can underlie acquired deficiency. Increased levels of Factor VIII are associated with a wide variety of different causes including pregnancy, oral contraception, stress and inflammation.

Further Information

Sample must be frozen in less than 1 hour.

Methodology	Photo Optical, Clot-based
Sample Requirement	plasma collected in CITRATED tube
Sample Volume	2 mL
Temperature	Frozen
Turnaround time	Running day: Monday, result the next day

Ferritin*

Clinical Significance

Glycoprotein which stores iron atoms in the ferric state. Ferritin is predominantly intracellular, where it forms an exchangeable pool of iron. Its serum level is directly proportional to body iron stores. Ferritin levels fall in iron deficiency. Levels are increased in iron overload, and also in inflammatory syndromes, liver disease and with certain neoplasms.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Folic Acid / Folate*

Clinical Significance

Folate deficiency is associated with systemic (asthenia and anorexia), psychiatric and neurological symptoms. Together with Vitamin B12levels, it is diagnostic tool, important for the recognition of folate deficiency, especially in the differential diagnosis of megaloblastic anemia. Serum levels reflect recent folate intake.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Folic Acid RBC

Clinical Significance

Folate deficiency is associated with systemic (asthenia and anorexia), psychiatric and neurological symptoms. Together with Vitamin B12levels, it is diagnostic tool, important for the recognition of folate deficiency, especially in the differential diagnosis of megaloblastic anemia. Erythrocyte Folic Acid levels are a measure of folate reserves.

Methodology	ECLIA
Sample Requirement	EDTA Whole blood + serum collected in a red-top tube
Sample Volume	2 mL EDTA + 1 mL serum
Temperature	Refrigerated
Turnaround time	Running day: Monday, result the next day

Follicle Stimulating Hormone*

Clinical Significance

A glycoprotein produced from the anterior pituitary which plays a central role in reproduction in both males and females. The determination of FSH in conjunction with luteinizing hormone (LH) is utilized for the following indications: congenital diseases with chromosome aberrations, polycystic ovaries, amenorrhea, menopausal syndrome, and azoospermia in men.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Free T3 (FT3) *

Clinical Significance

The unbound, biologically active fraction of triiodothyronine (T3) represents 0,3% of total T3. Variations in the levels of transport proteins do not affect the level of the unbound form. This test is useful in the investigation of hyperthyroidism and for therapeutic monitoring of patients taking amiodarone or corticosteroids.

Further Information

This test is part of Thyroid Function Test Panel but can be ordered separately.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Free T4 (FT4) *

Clinical Significance

The unbound, biologically active fraction of thyroxine (T4). Variations in the levels or affinity of transport proteins do not affect the level of the unbound form. High levels are associated with hyperthyroidism, thyroxine overload and amiodarone therapy. Low levels are associated with hypothyroidism and certain serious conditions not related to the thyroid gland.

Further Information

This test is part of Thyroid Function Test Panel but can be ordered separately.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Free Androgen Index

Clinical Significance

Free Androgen Index or FAI is a ratio used to determine abnormal androgen status. This test is indicated for male patients with testosterone deficiency that can contribute to fatigue, erectile dysfunction, osteoporosis and loss of secondary sex characteristics. For females, it is used as a measure for hirsutism or polycystic ovary syndrome in conjunction with another diagnostic test.

Further Information

FAI includes the testing of Total Testosterone and Sex Hormone Binding Globulin(SHBG).

Methodology	Calculated
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

FNAC *

Clinical Significance

Fine Needle Aspiration Cytology (FNAC) is a simple, quick and inexpensive method that is used to sample superficial masses like those found in the neck and is usually performed in the outpatient clinic. It causes minimal trauma to the patient and carries virtually no risk of complications. FNAC is a diagnostic procedure where a needle is inserted into your body, and a small amount of tissue is sucked out for examination under a microscope.

Further Information

Indicate the FNAC type and site. A filled cytopathology requisition must also be submitted along with the sample.

Methodology	Stain and Microscopy
Sample Requirement	FNA slides (fixed and or unfixed with 95% alcohol) and or fluid from aspirate.
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Saturday, result in 2 days

Glucose-6-Phosphate Dehydrogenase (G6PD) * QUALITATIVE

Clinical Significance

G6PD-deficiency is the most common erythrocyte enzyme deficiency. G-6-PDH deficiency in red cells has been demonstrated to be the basis for certain drug induced hemolytic anemias. Severe hemolytic anemia may result in these individuals when they are given many commonly used drugs. The majority of subjects who have demonstrated G-6-PDH deficiency are clinically normal until exposed to one of several oxidant drugs (anti-malarial drugs, sulfa drugs, ascorbic acid and others). This defect should be considered whenever an otherwise unexplained case of hemolytic anemia is encountered.

Further Information

Quantitative must be requested for positive qualitative results.

Methodology	Fluorescence UV
Sample Requirement	EDTA Whole blood
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	2 days

Glucose-6-Phosphate Dehydrogenase (G6PD)* QUANTITATIVE

Clinical Significance

G6PD-deficiency is the most common erythrocyte enzyme deficiency. G-6-PDH deficiency in red cells has been demonstrated to be the basis for certain drug induced hemolytic anemias. Severe hemolytic anemia may result in these individuals when they are given many commonly used drugs. The majority of subjects who have demonstrated G-6-PDH deficiency are clinically normal until exposed to one of several oxidant drugs (anti-malarial drugs, sulfa drugs, ascorbic acid and others). This defect should be considered whenever an otherwise unexplained case of hemolytic anemia is encountered.

Methodology	Kinetic
Sample Requirement	EDTA Whole blood
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	1 day

Gamma Glutamyl Transferase (GGT) *

Clinical Significance

Gamma-glutamyl transferase is an enzyme primarily present in kidney, liver, and pancreatic cells. The measurement of GGT activity is used in the diagnosis and monitoring of hepatobiliary diseases. GGT is often the only parameter with increased values when testing for such diseases and is one of the most sensitive indicators known. GGT is also a sensitive screening test for occult alcoholism.

Methodology	Enzymatic Colorimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Glucose – CSF

Clinical Significance

A CSF glucose test measures the amount of sugar (glucose) in the cerebrospinal fluid (CSF). CSF is a clear fluid that flows in the space surrounding the spinal cord and brain. CSF glucose levels may be decreased due to consumption by microorganisms, impaired glucose transport, or increased glycolysis. Elevated CSF glucose levels are consistent with hyperglycemia.

Further Information

Sample must be collected in a sterile vial. Centrifuge to remove any cellular material.

Methodology	Hexokinase
Sample Requirement	CSF
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Glucose – Blood (Random / Fasting) *

Clinical Significance

Glucose measurements are used in the diagnosis and treatment of carbohydrate metabolism disorders including diabetes mellitus, gestational diabetes, neonatal hypoglycemia, pancreatic islet cell carcinoma and idiopathic hypoglycemia.

Further Information

Indicate if patient is in Fasting or Random state.

Methodology	Hexokinase
Sample Requirement	plasma collected in SODIUM FLUORIDE tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Glucose Load Test*

Clinical Significance

Glucose Load measurements is a dynamic test in which glucose is given and blood samples taken afterward to determine how quickly it is cleared from the blood. It is used in the diagnosis of gestational diabetes.

Further Information

Indicate in the requisition the amount of glucose given, on each specimen the time and state: Fasting, and 1st hour.

Methodology	Hexokinase
Sample Requirement	plasma collected in SODIUM FLUORIDE tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Glucose – Urine*

Clinical Significance

Glucose is readily filtered by glomeruli and the filtered glucose is reabsorbed by the proximal tubule; essentially no glucose is normally excreted in the urine. However, the capacity for the proximal tubule to reabsorb glucose

is limited; if the filtered load exceeds the proximal tubule's re-absorptive capacity, a portion of the filtered glucose will be excreted in the urine. Glucose measurements in urine are used as a diabetes screening procedure and to aid in the evaluation of glucosuria, to detect renal tubular defects, and in the management of diabetes mellitus.

Further Information

Indicate the total volume for 24-hour urine collection.

Methodology	Hexokinase
Sample Requirement	Random Urine or 24-Hour Urine
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Glucose Tolerance Test (2 Hours) *

Clinical Significance

Glucose measurements are used in the diagnosis and treatment of carbohydrate metabolism disorders including diabetes mellitus, gestational diabetes, pancreatic islet cell carcinoma and idiopathic hypoglycemia. Use of fasting and two-hour postprandial glucose values are recommended to establish the diagnosis of diabetes mellitus. Levels <140 mg/dL are considered to reflect normal glucose metabolism. A result between 140-199 mg/dL indicates impaired glucose tolerance. A result of ≥200 mg/dL is provisional evidence of glucose intolerance.

Further Information

Indicate in the requisition the amount of glucose given on each specimen the time and state: Fasting, and 1st hour.

Methodology	Hexokinase
Sample Requirement	plasma collected in SODIUM FLUORIDE tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Glucose Tolerance Test (3 Hours) *

Clinical Significance

Glucose measurements are used in the diagnosis and treatment of carbohydrate metabolism disorders including diabetes mellitus, gestational diabetes, pancreatic islet cell carcinoma and idiopathic hypoglycemia. This test measures glucose concentrations over three hours after a 100-g oral glucose load. The test is done in the morning after an overnight fast of between 8 and 14 hours, and after at least 3 days of unrestricted diet (≥150 g carbohydrate per day) and physical activity.

Further Information

Indicate in the requisition the amount of glucose given on each specimen the time and state: Fasting, and 1st hour, 2nd hour and 3rd hour.

Methodology	Hexokinase
Sample Requirement	plasma collected in SODIUM FLUORIDE tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Gram Stain*

Clinical Significance

The Gram stain is a general stain used extensively in microbiology for the preliminary differentiation of microbiological organisms. The Gram stain is one of the most useful and rapid methods to identify and classify bacteria.

Further Information

Always indicate specimen type and site.

Methodology	Microscopy
Sample Requirement	Various specimen
Sample Volume	---
Temperature	Ambient
Turnaround time	1 day

Growth Hormone (GH)

Clinical Significance

The anterior pituitary secretes human growth hormone (hGH) in response to exercise, deep sleep, hypoglycemia, and protein ingestion. hGH stimulates hepatic insulin-like growth factor-1 and mobilizes fatty acids from fat deposits to the liver. It is primarily ordered on those with symptoms of growth hormone abnormalities, as a follow-up to other abnormal hormone test results, or to help evaluate pituitary function. Growth hormone tests are used to help identify excess or diminished GH production and give the doctor information about the severity of a person's condition. They are part of the diagnostic work-up required to find a cause for abnormal hormone production.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Haemoglobin Electrophoresis*

Clinical Significance

The electrophoretic test is performed at alkaline pH and provides a valuable screening method for hemoglobin patterns. The various forms of hemoglobinopathy are characterized by genetically determined, quantitative or

qualitative abnormalities in hemoglobin. Quantitative abnormalities involve reduced synthesis of normal globin sub-units: reduced synthesis of the alpha sub-unit causes alphathalassemia and reduced synthesis of the beta sub-unit causes beta-thalassemia. The most common forms of qualitatively abnormal hemoglobin are HbS, HbC, HbE, Hb Lepore. HbS is the form of hemoglobin which is associated with sickle cell anemia.

Methodology	Gel (Alkaline) Electrophoresis
Sample Requirement	EDTA Whole blood
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	2 – 3 days

Haemoglobin A1C (HBA1C) *

Clinical Significance

HbA1c refers to glycated haemoglobin. It develops when haemoglobin, a protein within red blood cells that carries oxygen throughout your body, joins with glucose in the blood, becoming 'glycated'. HbA1c reflects the average blood glucose level during the preceding 2 to 3 months, thus HbA1c is suitable to monitor long-term glucose control in individuals with diabetes mellitus.

Methodology	Capillary
Sample Requirement	EDTA Whole blood
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	1 day

Haptoglobin

Clinical Significance

A haptoglobin test measures the amount of haptoglobinin your blood. Haptoglobin is a protein produced by your liver. It binds with hemoglobin, which is a protein found in red blood cells. Red blood cells have the important role of transporting oxygen from the lungs to the heart and the rest of the body. Haptoglobin testing is used primarily to help detect and evaluate **hemolytic anemia**and to distinguish it from **anemia** due to other causes. Testing is used to help determine whether **red blood cells** (RBCs) are breaking apart or being destroyed prematurely.

Methodology	Immunoturbidimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, result the next day

Helicobacter Pylori Antibody IgG*

Clinical Significance

Helicobacter pylori is a Gram-negative, microaerophilic bacterium that can reside in the stomach. It is found to be present in patients with chronic gastritis and gastric ulcers, and its presence is linked to the development of duodenal ulcers and gastric ulcers. The test is used for evaluating the serologic status to H. pylori infection in patients with gastrointestinal symptoms.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Helicobacter Pylori Antigen* (SCREEN) – Stool

Clinical Significance

Helicobacter pylori is a Gram-negative, microaerophilic bacterium that can reside in the stomach. It is found to be present in patients with chronic gastritis and gastric ulcers, and its presence is linked to the development of duodenal ulcers and gastric ulcers. This antigen test is a non-invasive test which detects active infection. It is recommended that patients are retested four weeks after completion.

Methodology	Immunochromatographic
Sample Requirement	Stool
Sample Volume	10 grams
Temperature	Refrigerated
Turnaround time	1 day

Hepatitis A Total Antibodies*

Clinical Significance

The hepatitis A virus is an RNA-containing virus that lacks an envelope. It belongs to the family of picornaviruses. Hepatitis A is the most common form of acute viral hepatitis. It is transmitted via fecal-oral route. Total Anti-HAV is positive at the onset of a hepatitis A infection. After natural infection, Anti-HAV IgG can usually be detected lifelong and provide protection against the disease if the organism is re-infected. This assay is used to detect HAV antibodies that determines an existing or past hepatitis A infection as well as immune response after HAV vaccination.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Hepatitis A Virus IgM*

Clinical Significance

The hepatitis A virus is an RNA-containing virus that lacks an envelope. It belongs to the family of picornaviruses. Hepatitis A is the most common form of acute viral hepatitis. It is transmitted via fecal-oral route. IgM can be detected as soon as the first symptoms appear, and generally persist for 2 to 4 months. In rare cases, residual IgM has been detected 6 to 12 months after the start of the infection. Detection of anti- HAV IgM aids in the diagnosis of acute hepatitis but is not sufficient to validate postvaccine immunity.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Hepatitis B Core Total Antibody*

Clinical Significance

Hepatitis B is an acute or fulminant infection of the liver parenchyma but can also be minor and inapparent and become chronic to develop cirrhosis or liver cancer. Widespread throughout the world, it is due to an enveloped DNA virus that cannot be cultured. Hepatitis B core antibody (anti-HBc) is directed against the hepatitis B core antigen (HBcAg) The antibody is the earliest antibody to develop in response to acute hepatitis B virus (HBV) infection, appearing predominantly as IgM anti-HBc at about 6 to 8 weeks after infection.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday, Tuesday & Thursday, result the next day

Hepatitis B Core IgM*

Clinical Significance

Hepatitis B is an acute or fulminant infection of the liver parenchyma, but can also be minor and inapparent and become chronic to develop cirrhosis or liver cancer. Widespread throughout the world, it is due to an enveloped DNA virus that cannot be cultured. IgM antibodies to HBcAg occur in serum during proliferation of active Hepatitis B virus and can still be detected weeks to months after viral proliferation has ceased. Test for detecting anti-HBc IgM antibodies are used, in conjunction with HBsAg determinations, to identify acute Hepatitis B viral infections.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday, Tuesday & Thursday, result the next day

Hepatitis B DNA PCR Qualitative and Quantitative

Clinical Significance

HBV DNA levels in serum are useful in determining the status of chronic HBV infection, by differentiating between active and inactive disease states. Patients with chronic active HBV are at greater risk for more serious liver disease and are more infectious than patients with inactive HBV infection.

Methodology	DNA amplification by PCR
Sample Requirement	plasma collected in EDTA violet-top tube
Sample Volume	3 mL (3 tubes)
Temperature	Refrigerated
Turnaround time	Running day: Wednesday, result the next day

Hepatitis B Envelope Antibody*

Clinical Significance

Hepatitis B is an acute or fulminant infection of the liver parenchyma but can also be minor and inapparent and become chronic to develop cirrhosis or liver cancer. Widespread throughout the world, it is due to an enveloped DNA virus that cannot be cultured. HBeAg is first detectable in the early phase of hepatitis B viral infection, after the appearance of hepatitis B surface antigen (HBsAg.) Seroconversion from HBeAg to anti- HBe during acute hepatitis B infection is usually indicative of resolution of infection and a reduced level of infectivity.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday, Tuesday & Thursday, result the next day

Hepatitis B Envelope Antigen*

Clinical Significance

Hepatitis B is an acute or fulminant infection of the liver parenchyma, but can also be minor and inapparent and become chronic to develop cirrhosis or liver cancer. Widespread throughout the world, it is due to an enveloped DNA virus that cannot be cultured. HBeAg is first detectable in the early phase of hepatitis B viral infection, after the appearance of hepatitis B surface antigen (HBsAg.) Seroconversion from HBeAg to anti- HBe during acute hepatitis B infection is usually indicative of resolution of infection and a reduced level of infectivity. HBeAg appears in the serum during acute HBV infections and is detectable for a short period (days to weeks). The detection of HBeAg is generally associated with the presence of large quantities of virus. The HBeAg test is therefore meaningful in association with the antiHBe test for monitoring the course of an HBV infection. failure, Hartnup's disease).

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday, Tuesday & Thursday, result the next day

Hepatitis B Surface Antibody*

Clinical Significance

Hepatitis B is an acute or fulminant infection of the liver parenchyma but can also be minor and inapparent and become chronic to develop cirrhosis or liver cancer. Widespread throughout the world, it is due to an enveloped DNA virus that cannot be cultured. A “positive” or “reactive” HBsAb (or anti-HBs) test result indicates that a person has successfully responded to the hepatitis B vaccine or has recovered from an acute hepatitis B infection.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday, Tuesday & Thursday, result the next day

Hepatitis B Surface Antigen*

Clinical Significance

Hepatitis B is an acute or fulminant infection of the liver parenchyma but can also be minor and inapparent and become chronic to develop cirrhosis or liver cancer. Widespread throughout the world, it is due to an enveloped DNA virus that cannot be cultured. This tests for the presence of virus. A “positive” or “reactive” HBsAg test result means that the person is infected with the hepatitis B virus, which can be an “acute” or a “chronic” infection. Surface antigen usually appears in the serum after an incubation period of 1 to 6 months following exposure to Hepatitis B virus and peaks shortly after onset of symptoms. It typically disappears within 1 to 3 months. Persistence of Hepatitis B surface antigen for greater than 6 months is a prognostic indicator of chronic Hepatitis B infection.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Hepatitis C RNA PCR Qualitative and Quantitative

Clinical Significance

The HCV RNA PCR test can help to assist your doctor decide how best to treat the virus and reduce viral load. Giving you the test before and during treatment allows your doctor to see exactly how your body reacts to certain treatments. Measuring your viral load before treatment allow your doctor to monitor your viral load during and after treatment.

Methodology	RNA amplification by PCR
Sample Requirement	plasma collected in EDTA violet-top tube
Sample Volume	3 mL (3 tubes)
Temperature	Refrigerated
Turnaround time	Running day: Wednesday, result the next day

Hepatitis C Virus Antibody*

Clinical Significance

Hepatitis C is an infectious disease affecting primarily the liver, transmitted by blood-to-blood contact associated with intravenous drug use, poorly sterilized medical equipment, and transfusions. The infection is often asymptomatic, but chronic infection can lead to scarring of the liver and ultimately to cirrhosis. This test serves as a screening to detect infection, henceforth a positive screen result should be confirmed using a different technique.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Herpes Simplex Antibody 1 and 2 IgG

Clinical Significance

Herpes simplex virus (HSV) types 1 and 2 are members of the Herpesviridae family and produce infections that may range from mild stomatitis to disseminated and fatal disease. Infections with HSV types 1 and 2 can differ significantly in their clinical manifestations and severity. HSV type 1 is closely associated with infections of the mouth and lips, although genital infections can be common in some populations. HSV type 2 is the cause of the majority of urogenital infections and is almost exclusively found in adults. Serological analysis can be used to diagnose primary infection by demonstrating either seroconversion or the presence of IgM antibodies. Later, IgG antibodies persist for a long time and their levels do not significantly change during reactivation or recrudescence.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Herpes Simplex Antibody 1 and 2 IgM

Clinical Significance

Herpes simplex virus (HSV) types 1 and 2 are members of the Herpesviridae family and produce infections that may range from mild stomatitis to disseminated and fatal disease. Infections with HSV types 1 and 2 can differ significantly in their clinical manifestations and severity. HSV type 1 is closely associated with infections of the mouth and lips, although genital infections can be common in some populations. HSV type 2 is the cause of the majority of urogenital infections and is almost exclusively found in adults. Serological analysis can be used to diagnose primary infection by demonstrating either seroconversion or the presence of IgM antibodies. Later, IgG antibodies persist for a long time and their levels do not significantly change during reactivation or recrudescence.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated

Turnaround time	Running day: Saturday & Tuesday, result the next day

HIV 1 & 2 Antibodies*

Clinical Significance

The Human Immunodeficiency Viruses (HIV) are Lentiviruses (Retroviridae) which cause the acquired immunodeficiency syndrome (AIDS) by inducing the progressive destruction of CD4+ T lymphocytes thus laying the infected host open to opportunistic infections and certain forms of malignancy. This assay is an in vitro diagnostic test for the qualitative detection of HIV -1 p24 antigen and antibodies to HIV-1, including group O, and HIV-2 in human serum.

Further Information

2 different methods are utilized to perform HIV screening. Further confirmation must be performed using either PCR or Western Blot.

Methodology	ECLIA / ELFA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

HIV-1 RNA PCR Qualitative and Quantitative

Clinical Significance

HIV-1 Qualitative is an in vitro nucleic acid amplification test for the qualitative detection of human immunodeficiency virus type 1 (HIV-1) RNA in human serum and plasma by PCR. The test is intended to be used as an aid in diagnosis of HIV-1 infection. Detection of HIV-1 nucleic acid is indicative of HIV-1 infection, respectively. The presence of HIV-1 nucleic acid in the plasma or serum of individuals without antibodies to HIV-1 or HIV-2 is indicative of acute or primary HIV-1 infection. The HIV-1 Qualitative PCR may also be used as an additional test to confirm the presence of HIV-1 infection in an individual with specimens reactive for HIV-1 antibodies or antigens. The assay may also be used as an aid in the diagnosis of infection with HIV-1 in pediatric subjects and pregnant women. This assay is not intended to be used for monitoring patient status, or for screening donors of blood, plasma, or human cells, tissues, and cellular and tissue-based products (HCT/Ps) for HIV.

Methodology	RNA amplification by PCR
Sample Requirement	plasma collected in EDTA violet-top tube
Sample Volume	3 mL (3 tubes)
Temperature	Refrigerated
Turnaround time	Running day: Wednesday, result the next day

HLA B-27

Clinical Significance

The HLA-B27 test is primarily ordered to help strengthen or confirm a suspected diagnosis of ankylosing spondylitis (AS), reactive arthritis, juvenile rheumatoid arthritis (JRA), or sometimes anterior uveitis. The HLA-B27 test is not diagnostic; that is, it is not a definitive test that can be used to diagnose or rule out a disorder. The result adds information and is one piece of evidence used along with the evaluation of signs, symptoms, and other laboratory tests to support or rule out the diagnosis of certain autoimmune disorders, such as ankylosing spondylitis and reactive arthritis. The HLA-B27 test may be ordered as part of a group of tests used to help diagnose and evaluate conditions causing arthritis-like chronic joint pain, stiffness, and inflammation.

Methodology	DNA polymorphism
Sample Requirement	EDTA whole blood in violet-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	Running day: 10th, 20th, 30th/31st of the month, result the next day

Homocysteine – Blood*

Clinical Significance

An elevated concentration of homocysteine is an independent risk factor for cardiovascular disease. When used in conjunction with methylmalonic acid (MMA), these tests are useful to diagnose and monitor vitamin B12 (cobalamin) and folic acid deficiency and are often useful in evaluating macrocytosis (an elevated MCV, an erythrocytic index).

Further Information

Sample must be collected in fasting state. Sample must be separated and frozen within 1 hour from collection.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Frozen
Turnaround time	Running day: Monday & Thursday, result the next day

Human Papilloma Virus (HPV) DNA

Clinical Significance

Human papillomavirus (HPV)-induced lesions that are benign presenting as warts or condylomas. However, certain HPV types have been strongly associated with risk of development of cervical, vaginal, and vulvar malignancy. Human papillomavirus (HPV) types 6 and 11 are the predominant viruses associated with condylomaacuminata (genital warts).

Methodology	Polymerase Chain Reaction inclusive of Genotyping
Sample Requirement	Thinprep paptest container if liquid-based cytology is requested simultaneously, Digene HPV Cervical Kit, Wart biopsy suspended in HPV Transport medium.
DIET	Within 48 hours prior to the assay, avoid consuming bananas, vanilla, tea, coffee, chocolate.
Sample Volume	---
Temperature	Frozen
Turnaround time	Running day: Tuesday & Friday, result after 2 days

Immunoglobulin A (IgA) – Blood*

Clinical Significance

Immunoglobulin A (IgA) is an antibody that plays a critical role in mucosal immunity. IgA is produced in mucosal linings. Decreased or absence of IgA, termed selective IgA deficiency, can be a clinically significant immunodeficiency. Raised IgA infection is found in skin, gut, respiratory and renal infections. Monoclonal elevation of IgA characterizes multiple myeloma. Decreased immunoglobulin levels are found in patients with congenital deficiencies.

Methodology	Immunoturbidimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Immunoglobulin Total E (IgE)*

Clinical Significance

IgE antibodies mediate allergic diseases by sensitizing mast cells and basophils to release histamine and other inflammatory mediators on exposure to allergens. Serum levels of IgE are increased in many patients with allergic diseases, parasitic diseases, allergic bronchopulmonary aspergillosis, and the rare hyper IgE syndrome.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Frozen
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Immunoglobulin G (IgG)*

Clinical Significance

IgG antibodies are involved in predominantly the secondary immune response (the main antibody involved in primary response is IgM). The presence of specific IgG, in general, corresponds to maturation of the antibody response. The gamma globulin band as seen in conventional serum protein electrophoresis consists of 5 immunoglobulins. In normal serum, about 80% is immunoglobulin G (IgG). Elevations of IgG may be due to polyclonal immunoglobulin production. Monoclonal elevation of IgG characterizes multiple myeloma. Monoclonal gammopathies of all types may lead to a spike in the gamma globulin zone seen on serum protein electrophoresis. Decreased immunoglobulin levels are found in patients with congenital deficiencies.

Methodology	Immunoturbidimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Immunoglobulin M (IgM)*

Clinical Significance

IgG antibodies are involved in predominantly the secondary immune response (the main antibody involved in primary response is IgM). The presence of specific IgG, in general, corresponds to maturation of the antibody response. The gamma globulin band as seen in conventional serum protein electrophoresis consists of 5 immunoglobulins. In normal serum, about 80% is immunoglobulin G (IgG). Elevations of IgG may be due to polyclonal immunoglobulin production. Monoclonal elevation of IgG characterizes multiple myeloma. Monoclonal gammopathies of all types may lead to a spike in the gamma globulin zone seen on serum protein electrophoresis. Decreased immunoglobulin levels are found in patients with congenital deficiencies.

Methodology	Immunoturbidimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Immunoglobulin D (IgD)

Clinical Significance

Immunoglobulin D (IgD) is mostly found on the surface of special immune cells called B-cells (type of lymphocytes), where it helps regulate B-cell function. IgD also activates certain immune cells. The function of IgD that circulates in the bloodstream is unknown. It helps diagnose myelomas and immune deficiencies. An increased level of IgD is associated with many diseases and disorders.

Methodology	RID
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	2 weeks

Infectious Mononucleosis*

Clinical Significance

Infectious mononucleosis (IM) is a viral illness that involves reticuloendothelial tissue and is generally limited to children and young adults. IM is most commonly caused by Epstein-Barr virus (EBV). The disease is characterized by fever, sore throat, lymphadenopathy, headache, and fatigue, and on a symptomatic basis may be confused with other diseases. Detectable levels of unique heterophile antibodies are produced in patients with IM.

Methodology	Agglutination
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	2 days

Influenza A and B Rapid Test* (SCREEN)

Clinical Significance

Influenza viruses are the only member of the small segmented single RNA orthomyxoviruses that cause annual epidemic infection. It transmitted via respiratory droplets with an incubation period of 1-2 days. The spiked hemagglutinins found in the envelope binds to the cell surface receptor and is also target for neutralizing antibodies. Complications from Influenza can lead to bacterial pneumonia, precipitate asthmatic attacks and produce chronic pulmonary complications in children.

Further Information

Test must be performed within 12 hours from sample collection. Time of collection must be indicated in the requisition form.

Methodology	Immunochromatography
Sample Requirement	Nasopharyngeal Swab
Sample Volume	---
Temperature	Refrigerated
Turnaround time	1 day

Insulin*

Clinical Significance

Insulin is a hormone produced by the beta cells of the pancreas. It regulates the uptake and utilization of glucose and is also involved in protein synthesis and triglyceride storage. Insulin test is intended for use in the diagnosis and therapy of various disorders of carbohydrate metabolism, including diabetes mellitus and hypoglycemia. It also provides differential diagnosis of diabetes and investigation of pancreatic function.

Further Information

Non-hemolyzed sample is the only acceptable sample. Separate serum without delay.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Insulin like Growth factor 1 (IGF-1) / Somatomedine C

Clinical Significance

A somatomedin C test, also called an insulin-like growth factor-1 (or -1) test evaluates whether a person is producing a normal amount of human growth hormone (hGH, or somatotropin). Somatomedin C is a protein produced in the liver and muscles that's known as a growth factor — its production is stimulated by hGH. While hGH levels vary throughout the day depending on diet and activity levels, somatomedin C
levels in the blood are more stable, making its measurement a fairly reliable indicator of how much hGH the pituitary gland is producing overall.

Further Information

Sample must be frozen in less than 4 hours.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Frozen
Turnaround time	Running day: Wednesday, result the next day

Iron*

Clinical Significance

Iron is essential for electron and oxygen transport and as a metal cofactor for enzymes. Ingested iron is absorbed primarily from the intestinal tract and is temporarily stored in the mucosal cells as Fe(III)ferritin. Iron measurements are used in the diagnosis and treatment of diseases such as iron deficiency anemia, hemochromatosis, and chronic renal disease.

Methodology	Ferrozine Colorimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Lactate – Blood*

Clinical Significance

Lactate is the end product of anaerobic carbohydrate metabolism. Major sites of production are skeletal muscle, brain, and erythrocytes. Lactate is metabolized by the liver. The concentration of lactate depends on the rate of production and the rate of liver clearance. The liver can adequately clear lactate until the concentration reaches approximately 2 mmol/L. When this level is exceeded, lactate begins to accumulate rapidly. Lactic acidosis signals the deterioration of the cellular oxidative process and is associated with hyperpnea, weakness, fatigue, stupor, and finally coma. These conditions may be irreversible, even after treatment is administered. Lactate acidosis may be associated with hypoxic conditions (e.g., shock, hypovolemia, heart failure, pulmonary insufficiency), metabolic disorders (e.g., diabetic ketoacidosis, malignancies), and toxin exposures (e.g., ethanol, methanol, salicylates).

Further Information

Sample must be frozen in less than 1 hour. Fasting samples must be collected without the use of a tourniquet. Immediately after collection, the sample must be placed in ice. Centrifuge and freeze the plasma within 1 hour from collection.

Methodology	Enzymatic Colorimetric
Sample Requirement	plasma collected in SODIUM FLUORIDE tube
Sample Volume	1 mL
Temperature	Frozen
Turnaround time	1 day

Lactate Dehydrogenase (LDH)*

Clinical Significance

Lactate dehydrogenase (LD) activity is present in all cells of the body with highest concentrations in heart, liver, muscle, kidney, lung, and erythrocytes. Elevated serum levels of LDH have been observed in a variety of disease states. The highest levels are seen in patients with megaloblastic anemia, disseminated carcinoma, and shock. Moderate increases occur in muscular disorders, nephrotic syndrome, and cirrhosis. Mild increases in LDH activity have been reported in cases of myocardial or pulmonary infarction, leukemia, hemolytic anemia, and non-viral hepatitis.

Methodology	Enzymatic UV
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, & Wednesday, result the next day

Lipase*

Clinical Significance

Lipases are enzymes that hydrolyze glycerol esters of long-chain fatty acids and produce fatty acids and 2-acylglycerol. Bile salts and a cofactor, colipase, are required for full catalytic activity and greatest specificity. The pancreas is the primary source of serum lipase. Both lipase and colipase are synthesized in the pancreatic acinar cells and secreted by the pancreas in roughly equimolar amounts. Lipase is filtered and reabsorbed by the kidneys. Pancreatic injury results in increased serum lipase levels.

Methodology	Enzymatic UV
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	3 days

Lipoprotein (A)*

Clinical Significance

The Lipoprotein (a) test — or Lp (a) test — determines the level of this lipoprotein in the blood, and its results are used to diagnose several diseases, especially those related to the heart. High blood lipoprotein (a) levels may mean high risk of heart disease and stroke. Elevated concentrations of Lp (a) are associated with increased risk of coronary artery disease.

Methodology	Immunoturbidimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	1 day

Lithium*

Clinical Significance

Lithium is used in the treatment of bipolar (manic-depressive) illness. Lithium measurements are used to monitor patient compliance and therapy and to diagnose potential overdose. Symptoms of lithium intoxication include sluggishness, drowsiness, muscle weakness, and ataxia. Since the concentration of lithium in the serum varies with the time after the dose, blood for lithium determination should be drawn at a standard time, preferably 8 to 12 hours after the last dose (trough values).

Methodology	Ion Selective Electrode
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Wednesday, result the next day

Liver Kidney Microsomal Antibodies (LKM)

Clinical Significance

The detection of LKM-1 antibodies is an aid in the diagnosis of autoimmune hepatitis, type 2 (AIH-2). LKM antibodies are markers of AIH-2 which usually begins in childhood and generally affects children younger than 18 years of age. LKM antibodies are associated with a more serious progression of the disease. The disease is most common between the ages of 2 to 14 and is more frequent in females than males (8:1). LKM-1 antibodies have been reported in up to 8% of patients with chronic HCV infection.

Further Information

Refrigerated samples are stable for only 48 hours.

Methodology	IMMUNOBLOT
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Lupus Anticoagulant (LAC)

Clinical Significance

LAC is an antibody to negatively charged phospholipid that interferes with phospholipid-dependent coagulation tests. LAC is found in, but not limited to, patients with systemic lupus erythematosus; LAC is associated with other autoimmune disorders and collagen vascular disease and occurs in response to medications or certain infections (e.g., respiratory tract infections in children) and in individuals with no obvious underlying disease. LAC has been associated with arterial and venous thrombosis and fetal loss. Individuals with thrombocytopenia or factor II deficiency associated with LAC may be at risk for bleeding.

Further Information

Sample must be separated and frozen in less than 1 hour.

Methodology	Photo Optical, Clot-based

Sample Requirement	plasma collected in CITRATED tube
Sample Volume	2 mL
Temperature	Frozen
Turnaround time	Running day: Sunday, result the next day

Luteinizing Hormone (LH) *

Clinical Significance

A glycoprotein hormone secreted by the anterior pituitary when stimulated by LH-RH produced in the hypothalamus. Determination of LH concentration is used in the elucidation of dysfunctions within the hypothalamus-pituitary-gonads system. In conjunction with FSH, LH is indicated for: Congenital diseases with chromosome aberrations (e.g., Turner's syndrome); Polycystic ovaries Clarifying the causes of amenorrhea, menopausal syndrome, and suspected Leydig cell insufficiency. In males, LH acts on interstitial testicular cells to stimulate testosterone production and this test (in parallel with FSH) (to a FSH assay) is useful in investigations of impaired gonad function.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Magnesium – Serum*

Clinical Significance

A cation found almost exclusively inside cells, especially in bone tissue. Increased serum magnesium concentrations occur in renal failure, acute diabetic acidosis, dehydration, or Addison's disease. Hypermagnesemia has a depressing effect on the central nervous system, causing general. anesthesia and respiratory failure. Hypomagnesemia may be observed in chronic alcoholism, malabsorption, severe diarrhea, acute pancreatitis, diuretic therapy, prolonged parenteral fluid therapy without magnesium supplementation, and kidney disorders such as glomerulonephritis and tubular reabsorption defects.

Further Information

Sample must be free from hemolysis.

Methodology	Colorimetric with Chlorophosphonazo III
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Magnesium – Urine*

Clinical Significance

Magnesium excretion controls magnesium balance. Magnesium urinary excretion is enhanced by increasing blood alcohol levels, diuretics, Bartter syndrome, corticosteroids, cis-platinum therapy and aldosterone. Renal magnesium wasting occurs in renal transplant recipients who are on cyclosporine and prednisone.[2] Renal conservation of magnesium is diminished by hypercalciuria, salt-losing conditions, and the syndrome of inappropriate secretion of antidiuretic hormone. Magnesium deficiency is often inadequately documented by serum magnesium levels. Urinary magnesium analyses have been advocated before and after therapeutic magnesium administration to further investigate the significance of an apparent low serum magnesium.

Methodology	Colorimetric with Chlorophosphonazo III
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Malaria Antigen – Smear

Clinical Significance

Malaria is a parasitic disease characterized by fever, chills and anemia. It caused by a parasite transmitted from one human to another by the bite of an infected Anopheles mosquito. There are 4 kinds of malaria that can infect humans: Plasmodium falciparum., P viva, P ovale and P malariae. Peripheral smear examination for malarial parasite is the gold-standard in confirming the diagnosis of malaria. Thick and thin smears prepared from the peripheral blood are used for this purpose.

Methodology	Giemsa stain Microscopy
Sample Requirement	EDTA Whole Blood / Direct Smear
Sample Volume	2 mL
Temperature	Ambient
Turnaround time	1 day

Methylenetetrahydrofolate Reductase (MTHFR) (C677T) Mutation

Clinical Significance

The enzyme methylenetetrahydrofolate reductase (MTHFR) directs folate species either to DNA synthesis or to homocysteine (Hcy) remethylation. The common MTHFR C677T polymorphism affects the activity of the enzyme and hence folate distribution. Under conditions of impaired folate status, the homozygous TT genotype has been regarded as harmful because it is associated with a high concentration of plasma total Hcy, increased risk of neural tube defects and colorectal neoplasias, and can also predispose individuals to adverse effects from drugs with antifolate effects.

Methodology	Single Nucleotide polymorphisms (SNPs)
Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	Running day: Every other Saturday, result the next day

Microalbumin*

Clinical Significance

The kidney normally prevents loss of serum albumin into the urine. However, albumin is still found in normal urine in small amounts. Urinary albumin is considered the most important marker for glomerular dysfunction. Slightly elevated albumin excretion in urine, called microalbuminuria, is of particular importance in the early diagnosis of diabetic nephropathy.

Methodology	Immunoturbidimetric
Sample Requirement	Random Urine
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	1 day

Morphine (Opiates) – Screening

Clinical Significance

Opiates are central nervous system depressant drugs that may be obtained by prescription or as illegal (street) drugs. This test is used for suspected overdose or abuse of opiates. Screening is use to detect the presence of compounds with the typical opiate morphine group. It takes about 2 days for these substances to become detectable in the urine.

Further Information

It is strongly recommended to confirm a positive screening test with GC/MS (false positive risk).

Methodology	Immunoassay
Sample Requirement	Random Urine
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	1 day

MRSA Screen*

Clinical Significance

MRSA is any strain of Staphylococcus aureus that has developed, through the process of natural selection, resistance to beta-lactam antibiotics, which include penicillin (methicillin, dicloxacillin, nafcillin, oxacillin, etc.) and the cephalosporins. An MRSA screen is a test that looks solely for the presence of MRSA and no other pathogens. It is primarily used to identify the presence of MRSA in a colonized patient, or to detect if these resistant bacteria remain at a wound site after the patient has been treated for a MRSA infection.

Methodology	Culture
Sample Requirement	Various specimen
Sample Volume	---
Temperature	Ambient
Turnaround time	2 days

Mumps IgG/IgM Serology

Clinical Significance

Mumps virus, from the family of Paramyxovirus w/c is a linear, single stranded negative-sense RNA virus. Infection is characterized by enlarged salivary glands, parotid glands and other epithelial tissues. Mumps is highly infectious among unvaccinated individuals and is typically transmitted through inhalation of infected respiratory droplets or secretions. Confirmation of the infection by serological methods is suggested for patients presenting the most common complications but without inflammation of the salivary glands, complications like orchitis, meningitis or meningoencephalitis. Anti-Mumps IgG is useful to monitor the state of a previous infection or to demonstrate successful vaccination.

Further Information

Antibodies can be requested separately.

Methodology	Enzyme Immunoassay
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday & Wednesday, result the next day

Mycoplasma Pneumoniae IgG/IgM Serology

Clinical Significance

Mycoplasma pneumoniae is an etiologic agent of febrile primary atypical pneumonia. Bacteriological analysis is difficult because the bacterium is very fragile and, although PCR assay is an excellent alternative, diagnosis usually depends on serological analysis, either by following seroconversion or by demonstrating a significantly high antibody titer. Testing for specific IgM can be useful to confirm a positive result.

Further Information

Antibodies may be requested separately.

Methodology	Enzyme Immunoassay
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday & Wednesday, result the next day

Neisseria Gonorrhea Culture*

Clinical Significance

Neisseria gonorrhoeae is a gram-negative diplococci bacterium that cause sexually transmitted diseases including urethritis, cervicitis, pharyngitis, and proctitis. Culture was previously considered to be the gold standard test for diagnosis of infection. This organism may also cause neonatal infections, pelvic inflammatory disease, bacteremia, and joint infections. However, organisms are labile in vitro, precise specimen collection, transportation, and processing conditions are required to maintain organism viability which is necessary for successful culturing. In comparison, direct diagnosis b molecular biology (Transcription Mediated Amplification) provides superior sensitivity and specificity and is now the recommended method for diagnosis in most cases.

Further Information

Precise specimen collection, transportation, and processing conditions are required to maintain organism viability which is necessary for successful culturing. Samples must be transported to the laboratory immediately after collection.

Methodology	Culture
Sample Requirement	Culture swabs: cervix, urethra, vagina, pharynx, conjunctiva, or rectum
Sample Volume	---
Temperature	Ambient
Turnaround time	1 day

Occult Blood*

Clinical Significance

Occult blood tests for the presence of microscopic blood in the feces. It is a screening test for gastrointestinal hemorrhage associated with any condition, including diverticulitis, colitis, polyps, and colorectal carcinoma.

Further Information

Patients shall follow a special diet, starting two days before and continuing during the test period. An appropriate diet contains cooked fruit and vegetables such as spinach, grains and salad, plums, grapes, and apples. Cereal and well-cooked fowl or fish are also allowed. Avoid raw or half-cooked meat, horseradish, and raw fruit or raw vegetable such as broccoli, cauliflower, red radishes, or other vegetables with a high peroxidase content that could lead to false positive results.

Methodology	Guaiac
Sample Requirement	Stool
Sample Volume	10 grams
Temperature	Refrigerated
Turnaround time	1 day

Osteocalcin*

Clinical Significance

Osteocalcin is a protein found in bone and teeth. It is secreted by bone-building cells, called osteoblasts, and is deposited inside the bone matrix. Serum osteocalcin represents the fraction of the total produced that has not been placed inside the bone matrix. Osteocalcin is often used as a biochemical marker, or biomarker, for the bone formation process. It has been routinely observed that higher serum osteocalcin levels are relatively well correlated with bone diseases characterized by increased bone turnover, especially osteoporosis.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Osmolarity – Blood*

Clinical Significance

A serum osmolality test measures the amount of chemicals dissolved in the liquid part (serum) of the blood. Chemicals that affect serum osmolality include sodium, chloride, bicarbonate, proteins, and sugar (glucose). Serum osmolality is increased in hypernatremia, hyperglycemia, uremia, ethanol, methanol, or ethylene glycol overdoses, and in diabetes insipidus.

Methodology	Calculated
Sample Requirement	Serum
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	1 day

Osmolarity – Urine*

Clinical Significance

Urine osmolality is used to measure the number of dissolved particles per unit of water in the urine. As a measure of urine concentration, it is more accurate than specific gravity. Urine osmolality is useful in diagnosing renal disorders of urinary concentration and dilution and in assessing hydration status.

Methodology	Calculated
Sample Requirement	Random Urine or 24-Hour Urine
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	1 day

Pregnancy Associated Plasma Protein A (PAPP-A) + Free B-HCG – 1st Trimester Screening

Clinical Significance

Multiple marker serum screening has become a standard tool used in obstetrical care to identify pregnancies that may have an increased risk for certain birth defects, including neural tube defects (NTDs), Down syndrome, and trisomy 18. The screen is performed by measuring analytes in maternal serum that are produced by the fetus and the placenta. The analyte values along with maternal demographic information such as age, weight, gestational age, diabetic status, and race are used together in a mathematical model to derive a risk estimate. The laboratory establishes a specific cutoff for each condition, which classifies each screen as either screen-positive or screen-negative. A screen positive result indicates that the value obtained exceeds the established cutoff. A positive screen does not provide a diagnosis but indicates that further evaluation should be considered.

Further Information

Test is ordered during 11 to 14 weeks of gestation. An ultrasound report must be submitted along with the requisition. Samples must be collected within 2 days after ultrasound. A filled 1st Trimester Test form must also be submitted.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube

Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	Running days: Saturday & Tuesday, result after 2 days

Parathyroid Hormone (PTH) * – Intact

Clinical Significance

PTH is produced and secreted by the parathyroid glands, located along the posterior aspect of the thyroid gland. Serum calcium level regulates PTH secretion via negative feedback through the parathyroid calcium sensing receptor. The determination of PTH and calcium concentrations is significant when assessing hyperparathyroidism.

Further Information

Sample must be immediately refrigerated.

Methodology	ECLIA
Sample Requirement	plasma collected in EDTA tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Partial Thromboplastin Time activated (PTT / aPTT) *

Clinical Significance

The Activated Thromboplastin Time measured for rapid screening for disorders of the intrinsic coagulation system and sensitively detects Factors VIII and IX as well as the contact factors. In conjunction with deficient plasmas, it enables the individual factors of the intrinsic system to be quantified and permits diagnosis of hemophilia.

Further Information

Sample must be immediately separated and frozen in less than 1 hour.
If freezing not possible, sample must be sent in ambient temperature in < 4Hours.

Methodology	Photo Optical, Clot-based
Sample Requirement	plasma collected in CITRATED tube
Sample Volume	1 mL
Temperature	Frozen / Ambient
Turnaround time	1 day

Phenytoin*

Clinical Significance

Phenytoin has been used extensively for seizure control in patients having grand and mal epilepsy (major motor), cortical focal seizures, ad temporal lobe epilepsy. Serum level monitoring of the drug is essential in order to achieve maximal seizure control while maintaining minimal blood levels. Phenytoin is a potent inducer of hepatic drug-metabolizing enzymes. Serum level determinations for phenytoin are especially helpful when possible drug interactions are suspected.

Further Information

In accordance with the regulation, all requests must ALWAYS contain:

- ✓ the sampling date and time, the date and time of the last dose
- ✓ the treatment start date and/or the date of any change of dosage.
- ✓ the dosage data (quantity administered, frequency, administration route)
- ✓ Sample must be frozen in less than 4 hours.

Methodology	KIMS
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Wednesday, result the next day

Phosphate Inorganic – Blood*

Clinical Significance

Phosphorus occurs in blood in the form of inorganic phosphate and organically bound phosphoric acid. The small amount of extracellular organic phosphorus is found exclusively in the form of phospholipids. Serum phosphate concentrations are dependent on meals and variation in the secretion of hormones such as parathyroid hormone (PTH) and may vary widely. An increase in the level of phosphorus causes a decrease in the calcium level. The mechanism is influenced by interactions between parathormone, and vitamin D. Hypophosphatemia occurs in rickets, hyperparathyroidism, and Fanconi's syndrome.

Further Information

Patient should be fasting.

Methodology	Colorimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Phosphate – Urine*

Clinical Significance

Phosphorus is present in many foods with a mean intake of approximately 1500 mg per day for adult males and about 1000 mg per day for adult females. Absorbed phosphate, under the influence of parathyroid hormone is readily excreted in the kidney. Measurement of urinary phosphorus generally reflects dietary intake; hence, day-to-day excretion may show considerable variation.

Methodology	Endpoint Colorimetric
Sample Requirement	1st Morning Urine or 24-Hour Urine

Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	1 day

Potassium – Blood*

Clinical Significance

Potassium, a metallic inorganic ion and the most abundant cation in the body. The vast majority of potassium is in the intracellular compartment with a small amount in the extracellular space. Potassium testing is frequently ordered, along with other electrolytes, as part of a routine physical. The most common cause of hyperkalemia is kidney disease, but many drugs can also decrease potassium excretion from the body and result in this condition. Hypokalemia can occur in diarrhea, vomiting or excessive sweating. Potassium concentrations may be ordered at regular intervals to monitor drugs.

Methodology	Indirect Ion Selective Electrode
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Potassium – Urine*

Clinical Significance

Urinary excretion of potassium is increased in primary aldosteronism. It's often increased in dehydration and in salicylate toxicity. Decreased levels are seen in malabsorption.

Methodology	Indirect Ion Selective Electrode
Sample Requirement	Random Urine or 24-Hour Urine
Sample Volume	5 mL aliquot
Temperature	Refrigerated
Turnaround time	1 day

Potassium Hydroxide Prep (KOH)*

Clinical Significance

This examination can provide the physician with early information regarding the possible need for antifungal treatment.

Methodology	Microscopy
Sample Requirement	Scrappings, swab in gel transport medium
Sample Volume	---
Temperature	Refrigerated
Turnaround time	1 day

Pro - BNP

Clinical Significance

Tests for BNP and NT-proBNP measure their levels in the blood in order to detect and evaluate heart failure. It is associated with blood volume and pressure and with the work that the heart must do in pumping blood throughout the body. Small amounts of a precursor protein, pro-BNP, are continuously produced by the heart. Pro-BNP is then cleaved by the enzyme called corin to release the active hormone BNP and an inactive fragment, NT-proBNP, into the blood.

Further Information

Sample must be frozen in less than 1 hour.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Procalcitonin

Clinical Significance

Procalcitonin is an amino acid precursor of calcitonin. Test is used in the diagnosis of bacteremia and septicemia, renal involvement in urinary tract infection in children, bacterial infection in neutropenic patients, and in the diagnosis, risk stratification, and monitoring of septic shock, systemic secondary infection post- surgery, as well as in severe trauma, burns, and multi-organ failure. Differential diagnosis of bacterial versus viral meningitis. Differential diagnosis of community-acquired bacterial versus viral pneumonia. Monitoring of therapeutic response to antibacterial therapy.

Further Information

Sample must be frozen in less than 1 hour

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Frozen
Turnaround time	1 day

Progesterone*

Clinical Significance

Progesterone is a steroid hormone synthesized in the corpus luteum. It is involved in the female menstrual cycle, pregnancy and embryogenesis. The determination of progesterone is utilized in fertility diagnosis for the detection of ovulation and assessment of the luteal phase.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL

Temperature	Refrigerated
Turnaround time	1 day

Prolactin*

Clinical Significance

Prolactin is a hormone released by the pituitary gland. The prolactin test measures the amount of prolactin in the blood. The determination of prolactin is utilized in the diagnosis of ovular cycles, hyperprolactinemic amenorrhea and galactorrhea, gynecomastia and azoospermia. Prolactin is also determined when breast cancer and pituitary tumors are suspected. Hyperprolactinemia in men and women is the main cause of fertility disorders.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Protein Electrophoresis

Clinical Significance

Proteins are important building blocks of all cells and tissues. They form the structural part of most organs and make up enzymes and hormones that regulate body functions. Body fluids contain many different proteins that serve diverse functions, such as transport of nutrients, removal of toxins, control of metabolic processes, and defense against invaders. Protein electrophoresis is a method for separating these proteins based on their size and electrical charge.

Methodology	Alkaline Electrophoresis
Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, result the next day

Protein C Activity

Clinical Significance

Protein C is a vitamin K dependent protein that is present in plasma as a zymogen. Deficiency of Protein C is associated with recurrent venous thrombosis, especially in young adults. Acquired deficiencies of Protein C are associated with hepatic disorders, oral anticoagulant therapy, and disseminated intravascular coagulation.

Methodology	Chromogenic
Sample Requirement	plasma collected in CITRATED tube
Sample Volume	1 mL
Temperature	Frozen
Turnaround time	Running day: Sunday, result the next day

Protein C Activated Resistance (APC resistance)

Clinical Significance

Protein C is activated to activated protein C (APC) via proteolytic cleavage by thrombin bound to thrombomodulin, an endothelial cell surface membrane protein. Resistance to activated protein C (APC resistance) is a term used to describe abnormal resistance of human plasma to the anticoagulant effects of human APC. APC resistance is characterized by a reduced anticoagulant response of patient plasma after adding a standard amount of APC. Tests are developed to investigate the anticoagulant response to APC in plasma samples from patients who had unexplained thrombosis, evaluate patients with incident or recurrent venous thromboembolism, recurrent miscarriage.

Further Information

Separate aliquot must be specifically assigned for this test. Sample must be separated and frozen in less than 1 hour.

Methodology	Chromogenic
Sample Requirement	plasma collected in CITRATED tube
Sample Volume	1 mL
Temperature	Frozen
Turnaround time	Running day: Thursday, result the next day

Protein S

Clinical Significance

Protein S is a Vitamin K-dependent cofactor for the anticoagulant and the profibrinolytic effects of activated Protein C. Protein S deficiency may be hereditary or acquired. Acquired deficiency may be observed during pregnancy, oral anticoagulant therapy, oral contraceptive use, in liver disease, in newborn infants as well as in other clinical conditions. Deficiency of Protein S has been associated with a high risk of developing venous thromboembolism especially in young people.

Methodology	Functional Assay
Sample Requirement	plasma collected in CITRATED tube
Sample Volume	1 mL
Temperature	Frozen
Turnaround time	Running day: Sunday, result the next day

Prothrombin Time (PT & INR) *

Clinical Significance

The Prothrombin time is a rapid sensitive screening test for coagulation disorders in the domain of the extrinsic system (Factors II, V, VII, and X). Due to its high sensitivity for these coagulation factors, this test is utilized in monitoring of oral anticoagulant therapy, diagnosing acquired and genetical deficiencies in coagulation factors, checking the synthesis performance of the liver in hepatic diseases.

Further Information

Sample must be immediately separated and frozen in less than 1 hour.
If freezing not possible, sample must be sent in ambient temperature in < 4Hours.

Methodology	Photo Optical Clot-based / Calculation
Sample Requirement	plasma collected in CITRATED tube
Sample Volume	1 mL
Temperature	Frozen
Turnaround time	1 day

Prostate Specific Antigen Free (FPSA)*

Clinical Significance

Prostate Specific Antigen includes both bound and free forms. The ratio of free to total PSA is a useful diagnostic parameter because free PSA levels are particularly high in non-malignant hypertrophy of the prostate. A good parameter for early diagnosis of prostate cancer.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Prostate Specific Antigen Total (TPSA)*

Clinical Significance

Prostate Specific Antigen includes both bound and free forms. The ratio of free to total PSA is a useful diagnostic parameter because free PSA levels are particularly high in non-malignant hypertrophy of the prostate. A good parameter for early diagnosis of prostate cancer.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Quantiferon Test (Tuberculosis)

Clinical Significance

Tuberculosis is a highly contagious disease caused by Mycobacterium tuberculosis, infecting primarily the lungs. However, the disease can spread to any part of the body including the kidney, spine, and brain. The Quantiferon is a blood test use as an aid in diagnosing Mycobacterium tuberculosis in both latent and active stage of infection.

Further Information

Qunatiferon tubes are supplied on request.

Methodology	Enzyme Immunoassay
Sample Requirement	Srecific quantiferon tubes filled accordingly
Sample Volume	---
Temperature	Refrigerated
Turnaround time	Running day: Tuesday, result after 2 days

Reducing Substance*

Clinical Significance

The presence of saccharides in urine is seen in some inborn errors of metabolism. Urine tests for reducing substances (e.g., copper reduction test) are often used to screen for those disorders.

Methodology	Benedict's Copper reduction
Sample Requirement	Random Urine
Sample Volume	10 mL
Temperature	Refrigerated
Turnaround time	1 day

Respiratory Syncytial Virus Antigen* (SCREEN)

Clinical Significance

Respiratory syncytial virus (RSV) is a respiratory virus that infects the respiratory system causing an influenza-like illness. Most otherwise healthy people recover from RSV infection in 1 to 2 weeks. However, infection can be severe in infants, young children, and older adults. RSV is the most common cause of bronchiolitis.

Methodology	Immunochromatography
Sample Requirement	Nasopharyngeal Swab
Sample Volume	---
Temperature	Refrigerated
Turnaround time	1 day

Reticulocyte Count (Retic Count) *

Clinical Significance

Retic count evaluate the bone marrow's ability to produce red blood cells (RBCs) and to help distinguish between anemia related to blood loss or destruction and anemia related to decreased RBC production; to help monitor bone marrow response and return of normal marrow function following chemotherapy treatment, bone marrow transplant, or post-treatment follow-up for iron deficiency anemia.

Methodology	BCB Stain and Microscopy
Sample Requirement	EDTA Whole Blood

Sample Volume	2 mL
Temperature	Refrigerate
Turnaround time	1 day

Rheumatoid Factor (RF) Quantitative*

Clinical Significance

High levels of rheumatoid factor in the blood are most often associated with autoimmune diseases, such as rheumatoid arthritis and Sjogren's syndrome. This protein behaves as if it were an IgM antibody directed against determinants of IgG globulins. Detection of the rheumatoid factor protein is of value in diagnosis of rheumatoid arthritis.

Methodology	Agglutination or Immunoturbidimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Rotavirus* (SCREEN)

Clinical Significance

Rotavirus is one of the most common causes of diarrhea, and severe infection (rotavirus gastroenteritis) is the leading cause of severe, dehydrating diarrhea in infants and young children.

Further Information

Maximum excretion of rotavirus in the stool of patients with gastroenteritis 3-5 days after the symptoms have appeared, hence sample collection is highly preferred during this time.

Methodology	Immunochromatography
Sample Requirement	Stool
Sample Volume	10 grams
Temperature	Refrigerated
Turnaround time	1 day

Rubella IgG & IgM

Clinical Significance

Rubella virus is the etiological agent of German measles, a commonly mild rash disease which occurs usually during childhood. It is spread by small droplets via the respiratory route. Rubella in pregnancy especially during the first trimester of pregnancy can result in fetal death or may cause severe malformations to the fetus, commonly summarized as congenital Rubella syndrome (CRS). CRS is an important cause of blindness, deafness, congenital heart disease, and mental retardation. The quantitative determination of Rubella IgG is used as an aid in the determination of the immune status to Rubella and the diagnosis of acute infection. Seroconversion of specific Rubella antibodies or a significant rise of the IgG antibody titer from a first to a second sample may support the diagnosis of acute Rubella infection.

Further Information

Rubella IgG and IgM can be requested separately.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Tuesday & Thursday, result the next day

Rubeola IgG & IgM

Clinical Significance

Measles, also known as rubeola, causes fever, irritability, respiratory illness, and the characteristic skin rash. Immunization has greatly diminished the incidence of measles. The presence of IgG is consistent with immunity or prior exposure. IgM is consistent with current or recent infection. IgM tests can generate false positive results and low levels of IgM can persist for longer than 12 months.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday & Wednesday, result the next day

Semen Analysis*

Clinical Significance

A semen analysis involves the count, morphology, motility and viability testing of sperm. It is is used to determine fertility status and determine success of vasectomy.

Further Information

Sample must be collected after 3 days of sexual abstinence. Sample must reach the laboratory within 30 minutes. Indicate collection date and time.

Methodology	Microscopy
Sample Requirement	Semen4
Sample Volume	---
Temperature	Ambient
Turnaround time	1 day

Sex Hormone Binding Globulin (SHBG)*

Clinical Significance

Sex hormone binding globulin (SHBG) is a glycoprotein synthesized in the liver, involved in transport of testosterone and estradiol. Its concentration is a major factor regulating their distribution between the protein-

bound and free states. Measurement of SHBG can be an important indicator of an excessive/chronic androgenic action where androgen levels are normal, but where clinical symptoms would seem to indicate androgen in excess. High values being found in hyperthyroidism, hypogonadism, androgen insensitivity and hepatic cirrhosis in men. Low concentrations are found in myxedema, hyperprolactinemia and syndromes of excessive androgen activity.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	1 day

Sickle Cell Test*

Clinical Significance

A sickle cell test is a blood test done to screen for sickle cell trait or sickle cell disease. Sickle cell disease is an inherited blood disease that causes red blood cells to be deformed (sickle-shaped). The red blood cells deform because they contain an abnormal type of hemoglobin, called hemoglobin S, instead of the normal hemoglobin, called hemoglobin A. Sickled blood cells are destroyed by the body faster than normal blood cells. This causes anemia. Also, sickled cells can get trapped in blood vessels and reduce or block blood flow. This can damage organs, muscles, and bones and may lead to life-threatening conditions.

Methodology	Sodium metabisulfite & Microscopy
Sample Requirement	EDTA Whole Blood
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	1 day

Sexually Transmitted Diseases (STD) PCR

Clinical Significance

Sexually transmitted disease is a very frequent and under-diagnosed cause of illness. A high number of detection methods and a large range of specimens in which sexually transmitted infections can be determined are available at the moment. Polymerase chain reaction performed on first void urine offers the advantage of being non-invasive, self-collectable and has high sensitivity and specificity in both symptomatic and asymptomatic patients.

Methodology	DNA amplification by PCR
Sample Requirement	Urine, Semen, Swab from infected area
Sample Volume	Urine: 5-10 mL, Semen: 2-4 mL, Dry Swab: 1-2 swabs
Temperature	Refrigerated
Turnaround time	1 day

Sodium – Blood*

Clinical Significance

Measurement of serum sodium is routine in assessing electrolyte, acid-base, and water balance, and renal function. Blood sodium testing is used to detect hyponatremia or hypernatremia associated with dehydration, edema, and a variety of diseases. In patients with a known electrolyte imbalance, a blood sodium test may be ordered at regular intervals to monitor the effectiveness of treatment. It may also be ordered to monitor patients taking medications that can affect sodium levels, such as diuretics.

Methodology	Indirect Ion Selective Electrode
Sample Requirement	serum collected in a red-top tube
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	1 day

Sodium – Urine*

Clinical Significance

Measurement of the urine sodium concentration is vital in determining the integrity of tubular re-absorptive function. Low urine sodium concentration thus indicates not only intact re-absorptive function but also the presence of a stimulus to conserve sodium, whereas a high urine sodium concentration may signify other salt wasting etiologies. It is usually ordered when we need to distinguish between various forms of renal failure and classifying hyponatremia.

Methodology	Indirect Ion Selective Electrode
Sample Requirement	Random urine or 24-hour urine
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	1 day

Sputum Culture and Sensitivity*

Clinical Significance

A sputum culture is a test to detect and identify bacteria or fungi (plural of fungus) that are infecting the lungs or breathing passages. Once culture is positive, an antibiogram test is performed.

Further Information

An early morning deep cough specimen is preferred.

Methodology	Culture and Sensitivity
Sample Requirement	Sputum
Sample Volume	0.5 mL
Temperature	Refrigerated
Turnaround time	3-5 days

Stool Culture and Sensitivity*

Clinical Significance

Diarrhea may be caused by a number of agents (eg, bacteria, viruses, parasites, and chemicals) and these agents may result in similar symptoms. A thorough patient history covering symptoms, severity and duration of illness, age, travel history, food consumption, history of recent antibiotic use, and illnesses in the family or other contacts will help the physician categorize the disease and ensure that any special requests are communicated to the laboratory.

Further Information

A single stool specimen cannot be used to rule out bacteria as a cause of diarrhea. It is recommended that two or three stool specimens, collected on separate days, be submitted to increase the probability of isolating a bacterial pathogen.

Methodology	Culture and Sensitivity
Sample Requirement	Stool
Sample Volume	10 gms
Temperature	Refrigerated
Turnaround time	3-5 days

Stool Routine Examination*

Clinical Significance

This test is performed to detect parasitic infection and along with culture test to detect bacterial infection.

Further Information

A single stool specimen cannot be used to rule out bacteria as a cause of diarrhea. It is recommended that two or three stool specimens, collected on separate days, be submitted to increase the probability of isolating a bacterial pathogen.

Methodology	Microscopy / Fecal Concentration
Sample Requirement	Stool
Sample Volume	10 gms
Temperature	Refrigerated
Turnaround time	1 day

Streptococcal A Antigen (SCREEN)

Clinical Significance

Streptococcus pyogenes is non-motile gram-positive cocci, which contains the Lancefield group A antigen that can cause serious infections such as pharyngitis, respiratory infection, impetigo, endocarditis, meningitis, puerperal sepsis and arthritis. Left untreated, these infections can lead to serious complications, including rheumatic fever and peri-tonsillar abscess.

Methodology	Lateral Flow Immunoassay
Sample Requirement	Throat swab in transport medium
Sample Volume	---
Temperature	Refrigerated
Turnaround time	1 day

Streptococcal B Antigen (SCREEN)

Clinical Significance

Group B streptococcus is a bacterium that can be found in the intestines or lower genital tract. Group B strep is significant for pregnant patients is it can cause septicemia, meningitis or fatality in the newborn.

Methodology	Lateral Flow Immunoassay
Sample Requirement	High Vaginal Swab in transport medium
Sample Volume	---
Temperature	Ambient
Turnaround time	1 day

Synovial Fluid Analysis*

Clinical Significance

Synovial fluid analysis is a group of tests that examine your joint (synovial) fluid. The test helps diagnose and treat joint-related problems. Test is used in the diagnosis of rheumatic disease- and disease-causing joint symptoms, increase in joint fluid, destructions in the joint space such as gout, pseudo gout, gonococcal infection, non-gonococcal infectious arthritis

Further Information

Indicate site of collection. Analysis includes: Cell count, Microscopy, Total Protein, Uric Acid, Glucose, Lactate, LDH, Culture and Sensitivity.

Methodology	Microscopy, Culture and Sensitivity, Chemistry
Sample Requirement	Synovial Fluid
Sample Volume	2 mL
Temperature	Ambient
Turnaround time	1 day

Syphilis Rapid Plasma Reagin – RPR*

Clinical Significance

Syphilis is a sexually transmitted disease caused by Treponema pallidum. The infection spreads systemically, and internal lesions can cause cardiovascular, mucocutaneous (especially affecting the gums) and neurological (general paresis and tabes dorsalis) symptoms. RPR test is a Serological non-treponema-specific test used to screen for syphilis infection and to determine the effectiveness of treatment.

Methodology	Flocculation
Sample Requirement	serum collected in a red-top tube
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	1 day

Syphilis – Treponema Pallidum Hemagglutination (TPHA)*

Clinical Significance

Syphilis is a sexually transmitted disease caused by Treponema pallidum. The infection spreads systemically and internal lesions can cause cardiovascular, mucocutaneous (especially affecting the gums) and neurological (general paresis and tabes dorsalis) symptoms. TPHA tests is used to detect antibodies to Treponema pallidum.

Methodology	Hemagglutination
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Testosterone*

Clinical Significance

Testosterone is a steroid hormone that promotes the development of the secondary sex characteristics in men and serves to maintain the function of the prostate and seminal vesicles. Testosterone is determined in men when reduced testosterone production is suspected. The determination of testosterone in women is helpful in the diagnosis of androgenic syndrome (AGS), polycystic ovaries (Stein-Leventhal syndrome) and when an ovarian tumor, adrenal tumor, adrenal hyperplasia or ovarian insufficiency is suspected.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Testosterone Free and Bioavailable Testosterone*

Clinical Significance

Free testosterone and Bioavailable testosterone are calculated values. These calculated parameters more accurately reflect the level of bioactive testosterone than does the sole measurement of total serum testosterone. Free testosterone measures the free fraction; bioavailable testosterone includes free plus weakly bound to albumin.

Methodology	ECLIA + Calculated
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Throat Swab Culture*

Clinical Significance

A throat swab culture or throat culture is a test commonly used to diagnose bacterial infections in the throat. These infections can include strep throat, pneumonia and tonsillitis.
The purpose of this test is to detect the presence of group A streptococcus bacteria (Streptococcus pyogenes).

Methodology	Culture and Sensitivity
Sample Requirement	Throat swab
Sample Volume	--
Temperature	Refrigerated
Turnaround time	3-5 days

Thrombin Time

Clinical Significance

Blood clotting is an important step in healing from an injury, such as a cut. Forming a blood clot is a complicated process, involving many blood components that must interact in a specific order. Thrombin time is a measure of how long the blood's plasma, or the liquid portion of the blood, takes to form a clot. This test provides information about how well one particular blood component, called fibrinogen, is working.

Further Information

Sample must be frozen in less than 1 hour.

Methodology	Photo Optical, Clot-based
Sample Requirement	plasma collected in CITRATED tube
Sample Volume	2 mL
Temperature	Frozen
Turnaround time	1 day

Thyroglobulin (Tg)*

Clinical Significance

Tg is synthesized in large quantities by the thyrocytes and is released into the lumina of the thyroid follicles. It has an essential function in the iodination of L-tyrosine and in the formation of the thyroid hormones T4 and T3. Determination of Tg is used in the confirmation of a diagnosis of thyroid disease and for monitoring progress after total thyroid ablation (removal). Thyroglobulin also serves as a protein storehouse for iodine and inactive thyroid hormone until these substances are needed.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Thyroglobulin Antibody (Anti-Tg)

Clinical Significance

Thyroglobulin antibodies bind thyroglobulin (Tg), a major thyroid-specific protein. Test is utilized in the detection and monitoring of autoimmune thyroid diseases such as Hashimoto's thyroiditis, for differential diagnosis (cases of suspected autoimmune thyroiditis of unknown origin with negative anti-TPO results, Graves' disease without lymphocytic infiltration, and to rule out interference by Tg-autoantibodies in the Tg test.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Thyroid Peroxidase Antibody (Anti-TPO) *

Clinical Significance

Thyroid peroxidase (TPO), an enzyme normally found in the thyroid gland, plays an important role in the production of thyroid hormones. A TPO test detects antibodies against TPO in the blood. The presence of TPO antibodies in blood suggests that the cause of thyroid disease is an autoimmune disorder, such as Hashimoto's disease or Graves' disease. In autoimmune disorders, your immune system makes antibodies that mistakenly attack normal tissue. Antibodies that attack the thyroid gland cause inflammation and impaired function of the thyroid.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

TSH Receptor Antibodies (TSHR)

Clinical Significance

This antibody is found in autoimmune thyroid disorders. High levels are pathognomy for Graves' disease. Tests are useful in determining prognosis following treatment. A return to high levels indicates relapse.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday, Monday & Wednesday, result the next day

Total Iron Binding Capacity (TIBC)*

Clinical Significance

TIBC is a measurement for the maximum iron concentration that transferrin can bind. It is calculated from the sum of serum UIBC and serum iron. The serum TIBC varies in disorders of iron metabolism. In iron- deficiency anemia the TIBC is elevated, and the transferrin saturation is lowered to 15% or less. Low serum iron associated with low TIBC is characteristic of the anemia of chronic disorders, malignant tumors, and infections.

Methodology	Calculated
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Total Protein – CSF

Clinical Significance

CSF protein measurements are used in the diagnosis and treatment of conditions such as meningitis, brain tumors and infections of the central nervous systems. Elevated levels occur as a result of increased permeability of the blood-CSF barrier or with increased local synthesis of immunoglobulins.

Further Information

Blood must not be present in the CSF specimen.

Methodology	Colorimetric
Sample Requirement	CSF
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Total Protein – Blood*

Clinical Significance

A total serum protein test measures the total amount of protein in the blood. It also measures the amounts of two major groups of proteins in the blood: albumin and globulin. Total protein measurements are used in the diagnosis and treatment of a variety of diseases involving the liver, kidney, or bone marrow, as well as other metabolic or nutritional disorders.

Methodology	Colorimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Total Protein – Urine*

Clinical Significance

A urine total protein test is conducted to detect excess protein in the urine. This test helps determine an individual's kidney functioning. Urine protein measurements are used in the diagnosis and treatment of disease conditions such as renal or heart diseases, or thyroid disorders, which are characterized by proteinuria or albuminuria.

Methodology	Colorimetric
Sample Requirement	Random urine or 24-hour urine
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	1 day

Total T3*

Clinical Significance

Thyroid gland produces triiodothyronine, a hormone known as T3. Along with T4, it regulates your body's temperature, metabolism, and heart rate. The determination of this hormone is used in the diagnosis of T3-hyperthyroidism, the detection of early stages of hyperthyroidism and for indicating a diagnosis of thyrotoxicosis factitia.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Total T4*

Clinical Significance

A T4 test measures the blood level of the hormone T4, also known as thyroxine, which is produced by the thyroid gland and helps control metabolism and growth. The determination of this hormone can be used for the following indications: the detection of hyperthyroidism, the detection of primary and secondary hypothyroidism, and the monitoring of TSH-suppression therapy.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Tuesday, result the next day

Toxoplasma IgG*

Clinical Significance

Toxoplasmosis is a common infection caused by the protozoan parasite Toxoplasma gondii. The infection is mainly acquired by ingestion of food or water that is contaminated by oocyst. Primary, acute infection, which is mostly mild or even asymptomatic in healthy individuals. Primary maternal Toxoplasma infection occurring during pregnancy may lead to severe damage of the fetus as the parasite can be transmitted across the placenta. Toxoplasma infection as a result of immunosuppression is frequently associated with meningoencephalitis. The determination of IgG antibodies to Toxoplasma gondii is used to assess the serological status to T. gondii and is indicative of an acute or latent infection.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday, Tuesday & Thursday, result the next day

Toxoplasma IgM*

Clinical Significance

Toxoplasmosis is a common infection caused by the protozoan parasite Toxoplasma gondii. The detection of IgM antibodies to Toxoplasma gondii is presumptive of an acute, recent, or reactivated Toxoplasma.

Methodology	Colorimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Sunday, Tuesday & Thursday, result the next day

Transferrin*

Clinical Significance

Transferrin is the iron transport protein in serum. In cases of iron deficiency, the degree of transferrin saturation appears to be an extremely sensitive indicator of functional iron depletion. In sideropenia, an iron deficiency can be excluded if the serum transferrin concentration is low, as in inflammations or in cases of ascorbic acid deficiency.

Methodology	Immunoturbidimetry
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Monday & Thursday, result the next day

Transferrin Saturation

Clinical Significance

Transferrin is the iron transport protein in serum. In cases of iron deficiency, the degree of transferrin saturation appears to be an extremely sensitive indicator of functional iron depletion. In sideropenia, an iron deficiency

can be excluded if the serum transferrin concentration is low, as in inflammations or in cases of ascorbic acid deficiency. Transferrin saturation in conjunction with ferritin gives a conclusive prediction of the exclusion of iron overloading in patients with chronic liver disease.

Further Information

Indicate test as either total or free T4.

Methodology	Calculation
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Triglycerides*

Clinical Significance

Triglycerides are esters of the trihydric alcohol glycerol with 3 long-chain fatty acids. They are partly synthesized in the liver and partly derived from the diet. Increased plasma triglyceride levels are indicative of a metabolic abnormality and, along with elevated cholesterol, are considered a risk factor for atherosclerotic disease. Hyperlipidemia may be inherited or be associated with biliary obstruction, diabetes mellitus, nephrotic syndrome, renal failure, or metabolic disorders related to endocrinopathies. Increased triglycerides may also be medication-induced (eg, prednisone).

Further Information

Sample must be collected at fasting state (10-12 hours).

Methodology	Enzymatic Colorimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Troponin I

Clinical Significance

Troponin I is a part of a protein complex which regulates the contraction of striated muscle. In acute coronary syndromes (ACS), it can be detected in blood at 4-8 hours following the onset of chest pain, reaches a peak concentration at 12-16 hours, and remains elevated for 5-9 days. Troponin I has been used as a reliable marker in the diagnosis of perioperative myocardial infarction in patients undergoing cardiac surgery.

Further Information

Sample should be centrifuged within 2 hours from collection. Samples are run in STAT basis.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Troponin T*

Clinical Significance

Troponin T is a myofibrillar protein found in striated musculature. As a result of its high tissue-specificity, cardiac troponin T (cTnT) is a cardio-specific, highly sensitive marker for myocardial damage. Cardiac troponin T increases approximately 3-4 hours after myocardial infarction (AMI) and may persist up to two weeks thereafter. Cardiac troponin is also the preferred marker of myocardial injury in the new guidelines for the diagnosis and treatment of non-ST-segment elevation acute coronary syndrome.

Further Information

Samples should be centrifuged within 2 hours from collection. Samples are run on a STAT basis.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Thyroid Stimulating Hormone (TSH)*

Clinical Significance

TSH is a glycoprotein hormone that has 2 subunits. The alpha-subunit is similar to those of follicle stimulating hormone, human chorionic gonadotropin, and luteinizing hormone. The beta-subunit is different from those of the other glycoprotein hormones and confers its biochemical specificity. TSH determination serves as the initial test in thyroid diagnostics. TSH is a very sensitive and specific marker for assessing thyroid function and is particularly suitable for early detection or exclusion of disorders in the central regulating circuit between the hypothalamus, pituitary, and thyroid.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Unsaturated Iron Binding Capacity (UIBC)*

Clinical Significance

Iron is essential for electron and oxygen transport and as a metal cofactor for enzymes. Ingested iron is absorbed primarily from the intestinal tract and is temporarily stored in the mucosal cells as Fe(III)ferritin. The additional amount of iron that can be bound is the unsaturated (or latent) iron-binding capacity (UIBC). Iron studies are used in the diagnosis and treatment of diseases such as iron deficiency anemia, hemochromatosis, and chronic renal disease.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL

Temperature	Refrigerated
Turnaround time	1 day

Urea Breath Test*

Clinical Significance

The urea breath test (UBT) is a test for diagnosing the presence of a bacterium, Helicobacter pylori (H. pylori) in the stomach. H. pylori causes inflammation, ulcers, and atrophy of the stomach. The test also may be used to demonstrate that H. pylori has been eliminated by treatment with antibiotics.

Further Information

Patient Preparation Fasting for 4-6 hours. Discontinue antibiotics and bismuth compounds for at least two weeks. Discontinue Proton Pump Inhibitors for at least two weeks.

Methodology	Infra-Red Spectrophotometry
Sample Requirement	Special Kit (available upon request)
Sample Volume	---
Temperature	Ambient
Turnaround time	1 day

Urea – Blood*

Clinical Significance

During the metabolism of protein in the body, the liver creates ammonia, which is broken down into a by-product called urea. Kidney's filter excess urea into the urine and in sweat, but some goes into the bloodstream as serum urea. Determination of blood urea nitrogen is the most widely used screening test for renal function. When used in conjunction with serum creatinine determinations, it can aid in the differential diagnosis of the three types of azotemia: prerenal, renal, and postrenal.

Further Information

Test is included in the Renal Profile.

Methodology	Kinetic Colorimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Urea – Urine*

Clinical Significance

Urea is a low molecular weight substance that is freely filtered by glomeruli and the majority is excreted into the urine, although variable amounts are reabsorbed along the nephron. It is the major end product of protein metabolism in humans and other mammals. Hence, determination of urea in urine tests the ability of the kidney to excrete urea Factors which tend to increase urea excretion include increases in glomerular filtration rate, increased dietary protein intake, protein catabolic conditions, and water diuretic states. Factors which reduce urea excretion include low protein intake and conditions which result in low urine output (eg, dehydration).

Further Information

Indicate total volume for 24-hour urine collection.

Methodology	Kinetic Colorimetric
Sample Requirement	Random urine or 24-hour Urine
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	1 day

Uric Acid – Blood*

Clinical Significance

Uric acid is the final product of purine metabolism in humans. Purines, compounds that are vital components of nucleic acids and coenzymes, may be synthesized in the body or they may be obtained by ingesting foods rich in nucleic material (e.g., liver, sweetbreads, etc.). Uric acid measurements are used in the diagnosis and treatment of numerous renal and metabolic disorders, including renal failure, gout, leukemia, psoriasis, starvation or other wasting conditions, and of patients receiving cytotoxic drugs.

Methodology	Enzymatic Colorimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Uric Acid – Urine*

Clinical Significance

Uric acid is the end-product of purine metabolism. It is freely filtered by the glomeruli, and most is reabsorbed by the tubules. There is also active tubular secretion. Increased levels of uric acid in the urine usually accompany increased plasma uric acid levels unless there is a decreased excretion of uric acid by the kidneys. Urine uric acid levels reflect the number of dietary purines and also endogenous nucleic acid breakdown.

Methodology	Enzymatic Colorimetric
Sample Requirement	Random urine or 24-hour Urine
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	1 day

Urine Analysis – Routine*

Clinical Significance

A urinalysis is an array of tests performed on urine. This involves chemical analysis and cellular identification and count to aid and evaluate various diagnosis. It is useful in monitoring metabolic or endocrine disturbances of the body and to detect intrinsic conditions that may adversely affect the urinary tract of the kidneys.

Methodology	Reflectance Photometry: Chem-strip analysis Refractometry: Specific gravity testing Turbidimetry: Clarity testing Macroscopy & Microscopy
Sample Requirement	Midstream urine using a sterile container
Sample Volume	20 mL
Temperature	Refrigerated
Turnaround time	1 day

Urine Culture and Sensitivity*

Clinical Significance

A urine culture is a test to find and identify pathogenic microbes that cause urinary tract infection (UTI). Urine in the bladder normally is sterile; it does not contain any bacteria or other organisms such as fungi. But bacteria can enter the urethra and cause an infection. If the urine culture is positive, an antibiogram test is performed.

Further Information

Specimens must be kept in fridge at 2 – 8 ˚C if not being processed within 1 hour of collection.

Methodology	Culture and Sensitivity
Sample Requirement	Midstream urine using a sterile container or with urine stabilizer
Sample Volume	10-20 mL
Temperature	Refrigerated
Turnaround time	3-5 days

Urine Drug Panel Screening – 10 Parameters

Clinical Significance

Drug panel serve as a screening test for the qualitative detection of drugs of abuse namely: Amphetamine, Barbiturates, Benzodiazepines, Cocaine, Marijuana, Methadone, Methamphetamine, Morphine, Phencyclidine, Tricyclic Antidepressants.

Further Information

A positive result in any of the substance, must have a confirmatory test using High Performance Liquid Chromatography or Gas chromatography/mass spectrometry.

Methodology	Immunochromatography
Sample Requirement	Random urine
Sample Volume	10 mL
Temperature	Refrigerated
Turnaround time	1 day

Vaginitis Screen

Clinical Significance

Vaginal symptoms such as abnormal discharge, unpleasant odor, itching, and burning are common reasons for gynecologic consultation and typically lead to a diagnosis of bacterial vaginosis (BV), parasitic vaginitis (vaginal trichomoniasis; VT), or yeast vaginitis (vaginal candidiasis; VC).

Methodology	Nucleic acid probe assay / Microscopy
Sample Requirement	High Vaginal Swab in transport medium
Sample Volume	---
Temperature	Refrigerated
Turnaround time	2 days

Valproic Acid*

Clinical Significance

Valproic acid is a chemical compound that has been found clinical use as an anticonvulsant and mood stabilizing drug, primarily in the treatment of epilepsy, bipolar disorder, and less commonly major depression. It is also used to treat migraine headaches and schizophrenia. Further Information: Sampling must be done at the same time before another administration.

Further Information

Request must ALWAYS contain:

- ✓ the sampling date and time, the date and time of the last dose
- ✓ the dosage data (quantity administered, frequency, administration route)

Methodology	Fluorescence Polarization
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	Running day: Saturday & Wednesday, result the next day

Varicella Zoster Antibody IgG and IgM*

Clinical Significance

Varicella-zoster virus is a herpes virus, that causes 2 distinct rash-associated diseases: chickenpox (varicella) and herpes zoster (shingles). Chickenpox is a highly contagious, characterized by a dermal vesiculopustular rash that develops in successive crops approximately 10 to 21 days following exposure. Shingles is an extremely painful condition typically occurring in older nonimmune adults or those with waning immunity to VZV and in patients with impaired cellular immunity. Serological diagnosis of primary infection depends on demonstrating seroconversion with the presence of specific IgM antibodies. Reactivation (i.e., herpes zoster) can be associated with changes in the antibody profile, including the transient reappearance of IgM. The presence of only IgG is definitive evidence of long-standing infection.

Further Information

IgG and IgM may be requested separately.

Methodology	ELISA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated

Turnaround time	Running day: Sunday & Wednesday, result the next day

Vitamin B12 (Cobalamin)*

Clinical Significance

Vitamin B12 (cobalamin) is necessary for hematopoiesis and normal neuronal function. Vitamin B12 is reabsorbed from the ileum and returned to the liver; with very little amount is excreted. Vitamin B12 levels, together with folate levels, are of diagnostic importance for the recognition of vitamin B12 deficiency, especially in the differential diagnosis of megaloblastic anemia.

Further Information

Vitamin B12 determinations should be performed on serum samples from fasting patients.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Vitamin D Total 25-OH*

Clinical Significance

Vitamin D is the collective name for a group of fat-soluble compounds which are derived from the ring structure of cholesterol. Vitamin D is essential in the regulation of calcium homeostasis and bone metabolism. A deficiency of this vitamin leads to a decrease of the calcium level and to the disturbances in bone mineralization. Vitamin D deficiency is linked to an increased risk of some chronic diseases like autoimmune diseases, musculoskeletal diseases, diabetes and some types of cancer. 1,25(OH)2D3 is a metabolite of vitamin D and measuring its levels is useful in investigating disorders which might be related to vitamin D metabolism.

Further Information

Fasting sample is preferred.

Methodology	ECLIA
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

Widal Test

Clinical Significance

Salmonella serotypes are responsible for typhoid and paratyphoid fever, food poisoning and digestive tract infection. The Widal test is a presumptive serological test for enteric fever or undulant fever. In case of Salmonella infections, it is a demonstration of agglutinating antibodies against antigens O-somatic and H-flagellar in the blood. The presence of low or moderate titers of antibodies specific to the H antigen of Typhi or Paratyphi A or B is suggestive of prior immunization.

Methodology	Agglutination
Sample Requirement	serum collected in a red-top tube
Sample Volume	2 mL
Temperature	Refrigerated
Turnaround time	1 day

Zinc – Blood

Clinical Significance

Zinc is an essential element; it is a critical cofactor for carbonic anhydrase, alkaline phosphatase, RNA and DNA polymerases, alcohol dehydrogenase, and many other physiologically important proteins. Zinc is a key element required for active wound healing. A decrease in serum zinc, is observed in enteropathic acrodermatitis with alopecia, diarrhea, skin lesions. In contrast, its level increases in familial hyperzincaemia or in the case of exposure to metal fumes.

Methodology	Colorimetric
Sample Requirement	serum collected in a red-top tube
Sample Volume	1 mL
Temperature	Refrigerated
Turnaround time	1 day

REFERRED TESTS

NOTE: TAT for referred tests are counted within working days only (weekends and holidays not included).

URINE BENCE JONES PROTEINS

Sample Requirement	Urine collected in a sterile container
Sample Volume	60 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

11 DESOXYCORTICOSTERONE

Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 – 4 weeks

11-Deoxycortisol – Compound S, 0h & 1h

Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

17 HYDROXY CORTICOSTEROIDS

Sample Requirement	urine collected in 24-hour urine container
Sample Volume	*Indicate total volume
Temperature	Refrigerated
Turnaround time	2 weeks

17 KETOSTEROIDS

Sample Requirement	urine collected in 24-hour urine container
Sample Volume	*Indicate total volume
Temperature	Refrigerated
Turnaround time	2 weeks

17 OH PREGNENOLONE – Oh, 1h & 2h

Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	16 – 18 days (cutoff day Sun/Mon/Wed 11am)

5 HIAA in Urine (HYDROXYINDOLEACETIC ACID)

Sample Requirement	urine collected in 24-hour urine container
Sample Volume	*Indicate total volume
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

5 NUCLEOTIDASE

Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

ACETYLCHOLINE RECEPTOR ANTIBODIES

Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

ACTIVATED PROTEIN C RESISTANCE

Sample Requirement	plasma collected in CITRATED blue-top
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	10 days (cutoff day Sun/Mon/Wed 11am)

ADENOSINE DEAMINASE

Sample Requirement	Serum/csf/pleural collected in a red-top tube / sterile container
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	4 – 6 weeks (cutoff day Sun/Mon/Wed 11am)

ADENOVIRUS ANTIBODIES

Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

ADH (ANTI DIURETIC HORMONE)/VASOPRESSIN

Sample Requirement	plasma collected in EDTA violet-top + aprotinine pink-top tube
Sample Volume	3 mL (2 tubes each)
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

ADRENALINE (EPINEPHRINE)

Sample Requirement	plasma collected in EDTA violet-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	3 weeks (cutoff day Sun/Mon/Wed 11am)

ALDOLASE

Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	5 – 7 days (cutoff day Sun/Mon/Wed 11am)

ALDOSTERONE (URINE)

Sample Requirement	urine collected in 24 hour urine container
Sample Volume	*indicate total volume
Temperature	Frozen
Turnaround time	7 days (cutoff day Sun/Mon/Wed 11am)

ALKALINE PHOSPHATASE ISOENZYMES

Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	5 – 7 days (cutoff day Sun/Mon/Wed 11am)

ALLERGENS FOOD, WHEAT, IgE

Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	1 – 2 weeks

ALLERGENS, FOOD, PLUMS, IgE

Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	1 – 2 weeks

ALLERGENS FOOD, SESAME

Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	1 – 2 weeks

ALPHA FETO PROTEIN L3 FRACTION-AFP

Sample Requirement	serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks

ALPHA GLUCOSIDASE SPERM

Sample Requirement	seminal fluid collected in a gray-top tube
Sample Volume	*indicate total volume
Temperature	Frozen
Turnaround time	16 – 20 days (cutoff day Sun/Mon/Wed 11am)

AMINO ACIDS (PLASMA)

Sample Requirement	plasma collected in HEPARIN green-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	10 – 14 days (cutoff day Sun/Mon/Wed 11am)

AMINO ACIDS (URINE)

Sample Requirement	fasting urine collected in sterile container
Sample Volume	60 mL
Temperature	Frozen
Turnaround time	10 – 14 days (cutoff day Sun/Mon/Wed 11am)

ANTI-AQUAPORIN 4 ANTIBODIES

Sample Requirement	Serum/csf collected in a red-top tube / sterile container
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 – 14 days (cutoff day Sun/Mon/Wed 11am)

ANTI-DNAse B

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

ANTI-OVARIAN ANTIBODY

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

ANTI-PLATELETS ANTIBODY FREE SCREENING

Sample Requirement	Serum collected in a red-top + EDTA violet-top tube
Sample Volume	5 mL serum +15 mL EDTA
Temperature	Refrigerated
Turnaround time	1 month (cutoff day Sun/Mon/Wed 11am)

ANTI-MOG ANTIBODIES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 – 14 days (cutoff day Sun/Mon/Wed 11am)

ANTI-NEUROMYELITIS OPTICA

Sample Requirement	Serum/csf collected in a red-top tube / sterile container
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	3 weeks (cutoff day Sun/Mon/Wed 11am)

ANTI-NEUROMYELITIS OPTICA ANTIBODIES (Anti-NMO)

Sample Requirement	Serum/csf collected in a red-top tube / sterile container
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	3 weeks (cutoff day Sun/Mon/Wed 11am)

ASCARIASIS ANTIBODIES - ASCARIASIS

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

ASPERGILLOSIS SCREENING

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	7 – 10 days (cutoff day Sun/Mon/Wed 11am)

BARTONELLA QUINTANA SEROLOGY

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 days (cutoff day Sun/Mon/Wed 11am)

BENZODIAZEPINES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	3 weeks (cutoff day Sun/Mon/Wed 11am)

BETA CAROTENE / CAROTENE

Sample Requirement	plasma collected in HEPARIN green-top tube *protected from light
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	3 weeks (cutoff day Sun/Mon/Wed 11am)

BETA THALASSEMIA GENE

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	2 months (cutoff day Sun/Mon/Wed 11am)

BORDETELLA PERTUSIS SEROLOGY

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

BORELLIA IgG + IgM SCREENING SEROLOGY

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

BORDETELLA CONFIRMATION IgG & IgM

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

BORRELIOSIS – DIRECT DIAGNOSIS (PCR)

Sample Requirement	dry swab collected in a sterile container
Sample Volume	N/A
Temperature	Room temperature
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

BRAIN NATRIURETIC PEPTIDE

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	10 days (cutoff day Sun/Mon/Wed 11am)

C1 INHIBITOR COMPLEMENT FRACTION - FUNCTIONAL

Sample Requirement	Serum collected in a red-top + CITRATED blue-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	1 week (cutoff day Sun/Mon/Wed 11am)

C1Q COMPLEMENT

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

CAMPYLOBACTER SEROLOGY

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

CANDIDA SCREENING SEROLOGY

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	12 days (cutoff day Sun/Mon/Wed 11am)

CARBOXYHEMOGLOBIN

Sample Requirement	HEPARIN collected in a green-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	9 – 12 days (cutoff day Sun/Mon/Wed 11am)

CATECHOLAMINES - PLASMA

Sample Requirement	plasma collected in EDTA violet-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	3 weeks (cutoff day Sun/Mon/Wed 11am)

CATECHOLAMINES - URINE

Sample Requirement	urine collected in 24 hour urine container
Sample Volume	*indicate total volume
Temperature	Refrigerated
Turnaround time	7 – 10 days (cutoff day Sun/Mon/Wed 11am)

CD10

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	10 days (cutoff day Sun/Mon/Wed 11am)

CD19

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	10 days (cutoff day Sun/Mon/Wed 11am)

CD3

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	1 week (cutoff day Sun/Mon/Wed 11am)

CHLAMYDIA - PCR

Sample Requirement	urine / dry swab collected in a sterile container
Sample Volume	urine: 60 mL
Temperature	Refrigerated
Turnaround time	10 days

CHLAMYDIA PSITACCI SEROLOGY

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 days (cutoff day Sun/Mon/Wed 11am)

CHOLINESTERASE

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	12 – 14 days (cutoff day Sun/Mon/Wed 11am)

CHROMIUM

Sample Requirement	HEPARIN collected in a green-top tube
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	16 – 18 days (cutoff day Sun/Mon/Wed 11am)

CHROMOSOMAL ANALYSIS (Products of Conception)

Sample Requirement	POC collected in a sterile container
Sample Volume	N/A
Temperature	Room temperature
Turnaround time	16 days

CHROMOSOMAL ANALYSIS (KARYOTYPING)

Sample Requirement	HEPARIN collected in a green-top tube
Sample Volume	3 mL (3 tubes)
Temperature	Room temperature
Turnaround time	4 weeks

CHYMOTRYPSIN - STOOL

Sample Requirement	stool collected in a sterile container
Sample Volume	N/A
Temperature	Refrigerated
Turnaround time	3 weeks

CITRIC ACID - URINE

Sample Requirement	urine collected in 24 hour urine container
Sample Volume	*indicate total volume
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

Ck ISOENZYMES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

CK-MM

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

CMV – VIRAL LOAD (PCR)

Sample Requirement	urine / dry swab collected in a sterile container
Sample Volume	urine: 60 mL
Temperature	Room temperature
Turnaround time	7 – 10 days

COBALT TEST

Sample Requirement	HEPARIN collected in a green-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	18 days

COMPLEMENT C1Q

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

COPPER - URINE

Sample Requirement	urine collected in a sterile container
Sample Volume	60 mL
Temperature	Refrigerated
Turnaround time	10 – 12 days (cutoff day Sun/Mon/Wed 11am)

CORTECOSTERONE COMPUND B

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	3 weeks

CORTISOL (FREE) URINE

Sample Requirement	urine collected in a sterile container
Sample Volume	60 mL
Temperature	Refrigerated
Turnaround time	7 – 10 days (cutoff day Sun/Mon/Wed 11am)

COXSACKIE VIRUSES (PICORNAVIRUS)

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 – 12 days (cutoff day Sun/Mon/Wed 11am)

CPK ISOENZYMES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 days (cutoff day Sun/Mon/Wed 11am)

CRYPTOCOCCUS NEOFORMANS SOLUBLE ANTIGEN

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	7 – 10 days (cutoff day Sun/Mon/Wed 11am)

CYCLOSPORIN

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	1 week (cutoff day Sun/Mon/Wed 11am)

CYFRA 21-1

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

CYSTIC FIBROSIS (Study of the main CFTR gene mutation)

Sample Requirement	EDTA collected in a violet-top tube with consent form
Sample Volume	5 mL
Temperature	Room temperature
Turnaround time	2 – 3 weeks (cutoff day Sun/Mon/Wed 11am)

CYSTICERCOSIS SEROLOGY

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

CYSTINE URINE

Sample Requirement	Urine collected in a sterile container with consent form
Sample Volume	10 mL early morning and fasting
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

CYTOMEGALOVIRUS AVIDITY

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

DIHYDROTESTOSTERONE

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 – 3 weeks (cutoff day Sun/Mon/Wed 11am)

ELASTASE - STOOL

Sample Requirement	stool collected in a sterile container
Sample Volume	N/A
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

ENTEROVIRUS SEROLOGY

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	7 – 10 days (cutoff day Sun/Mon/Wed 11am)

ERYTHROPOIETIN

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

ESTRONE

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 days

ETHOSUXIMIDE

**Please provide: dosage and frequency of intake, time and date of last intake and blood collection.*

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

FACTOR IX ACTIVITY

Sample Requirement	plasma collected in CITRATED blue-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

FACTOR V LEIDEN MUTATION

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	10 days

FACTOR V PROACCELERIN

Sample Requirement	plasma collected in CITRATED blue-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

FACTOR VII PROCONVERTIN

Sample Requirement	plasma collected in CITRATED blue-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	10 days (cutoff day Sun/Mon/Wed 11am)

FACTOR X STUART PROWER

Sample Requirement	plasma collected in CITRATED blue-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

FACTOR XI ROSENTHAL

Sample Requirement	plasma collected in CITRATED blue-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

FACTOR XII HAGEMAN

Sample Requirement	plasma collected in CITRATED blue-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

FAMILIAL MEDITERRANEAN FEVER DNA ANALYSIS

Sample Requirement	EDTA collected in a violet-top tube with consent form
Sample Volume	15 mL
Temperature	Refrigerated
Turnaround time	5 weeks (cutoff day Sun/Mon/Wed 11am)

FASCIOLA ANTIBODIES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

FIBRINOGEN DEGRADATION PRODUCTS (FDP)

Sample Requirement	plasma collected in CITRATED blue-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	4 – 7 days (cutoff day Sun/Mon/Wed 11am)

FIBRONECTIN

Sample Requirement	EDTA collected in a violet-top tube / CITRATED blue-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 days

FILARIA SEROLOGY

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

FOOD INTOLERANCE TEST

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL (3 tubes)
Temperature	Refrigerated
Turnaround time	10 days

FRAGILE X

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	5 mL
Temperature	Room temperature
Turnaround time	4 weeks (cutoff day Sun/Mon/Wed 11am)

FRUCTOSAMINE

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 – 12 days

GASTRIN

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

GONOCCOCAL ANTIBODIES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

GONORRHEAE PCR

Sample Requirement	Dry swab collected in a sterile container
Sample Volume	N/A
Temperature	Room temperature
Turnaround time	10 days

GONORRHEAE ANTIBODIES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks

He-4

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 – 3 weeks (cutoff day Sun/Mon/Wed 11am)

HEPATITIS C – IMMUNO BLOT

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 – 12 days (cutoff day Sun/Mon/Wed 11am)

HEPATITIS C GENOTYPING

Sample Requirement	plasma collected in EDTA violet-top tube
Sample Volume	3 mL (3 tubes)
Temperature	Frozen
Turnaround time	16 days

HEPATITIS D ANTIGEN

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 – 14 days (cutoff day Sun/Mon/Wed 11am)

HEPATITS DELTA ANTIBODIES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

HEPATITS DELTA IgM

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

HEPATITS E IgM

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

HERPES SIMPLEX VIRUS - PCR

Sample Requirement	EDTA collected in a violet-top tube / swab collected in a sterile container
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	1 – 2 weeks

HFE GENE ANALYSIS C28Cy-HMC

Sample Requirement	EDTA collected in a violet-top tube with consent
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

HFE GENE ANALYSIS H63D

Sample Requirement	EDTA collected in a violet-top tube with consent
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

HFE GENE MUTATION HAEMOCHROMATOSIS

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	3 weeks (cutoff day Sun/Mon/Wed 11am)

HISTAMINE - PLASMA

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

HLA CLASS 2 TYPING (Dr & Dq)

Sample Requirement	EDTA collected in a violet-top tube with consent
Sample Volume	5 mL
Temperature	Room temperature
Turnaround time	16 – 18 days (cutoff day Sun/Mon/Wed 11am)

HLA TYPING (A, B & C)

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	2 weeks

HLA - Dr

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	2 weeks

IGF-BP3

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	10 – 12 days (cutoff day Sun/Mon/Wed 11am)

IgG - SUB CLASS, 2, 3, & 4

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	6 – 10 days (cutoff day Sun/Mon/Wed 11am)

IMMUNOELECTROPHORESIS (SERUM)

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

IMMUNOELECTROPHORESIS (Immunofixation)

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

IMMUNOPHENOTYPING OF CHRONIC LYMPHOID DISEASES

Sample Requirement	EDTA collected in a violet-top tube + 1 blood smear unstained
Sample Volume	5mL
Temperature	Room temperature
Turnaround time	3 weeks (cutoff day Sun/Mon/Wed 11am)

IMMUNOPHENOTYPING OF PB LYMPHOCYTES

Sample Requirement	EDTA collected in a violet-top tube + 1 blood smear unstained
Sample Volume	5 mL
Temperature	Room temperature
Turnaround time	3 weeks (cutoff day Sun/Mon/Wed 11am)

INFLUENZA VIRUS ANTIBODIES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 – 14 days (cutoff day Sun/Mon/Wed 11am)

INHIBINE A

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	16 days (cutoff day Sun/Mon/Wed 11am)

INHIBINE B

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

INSULIN FREE

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL fasting
Temperature	Frozen
Turnaround time	2 – 3 weeks (cutoff day Sun/Mon/Wed 11am)

IODINE (SERUM)

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 – 14 days (cutoff day Sun/Mon/Wed 11am)

ISLET CELL ANTIBODIES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 days (cutoff day Sun/Mon/Wed 11am)

JAK 2 MUTATION

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	2 weeks

KAPPA LIGHT CHAINS (SERUM)

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

KAPPA LIGHT CHAINS (URINE)

Sample Requirement	urine collected in 24hour urine container
Sample Volume	*Indicate total volume
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

KEPPRA/LEVETIRACETAM

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

LAMBDA LIGHT CHAINS (SERUM)

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

LAMBDA LIGHT CHAINS (URINE)

Sample Requirement	urine collected in 24-hour urine container
Sample Volume	*Indicate total volume
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

LAMOTRIGINE LEVEL

**Please provide dosage and frequency of intake, time and date of last intake and blood collection.*

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

LDH ISOENZYMES ELECTROPHORESIS

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	1 week (cutoff day Sun/Mon/Wed 11am)

LEAD

Sample Requirement	EDTA collected in a violet-top / HEPARIN collected in a green-top tube
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

LEPTIN

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

LEPTOSPIRA IgM ANTIBODIES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	7 – 10 days (cutoff day Sun/Mon/Wed 11am)

LISTERIA ANTIBODIES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

MALARIA ANTIBODIES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

MANGANESE

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 – 3 weeks (cutoff day Sun/Mon/Wed 11am)

MERCURY

Sample Requirement	EDTA collected in a violet-top / HEPARIN collected in a green-top tube
Sample Volume	5 mL
Temperature	Refrigerated
Turnaround time	16 – 18 days (cutoff day Sun/Mon/Wed 11am)

MERCURY - URINE

Sample Requirement	urine collected in a sterile container
Sample Volume	60 mL
Temperature	Refrigerated
Turnaround time	3 weeks (cutoff day Sun/Mon/Wed 11am)

METHOXYLATED DERIVATIVES OF CATECHOLAMINES (METANEPHRINE – PLASMA)

Sample Requirement	plasma collected in EDTA violet-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 – 3 weeks (cutoff day Sun/Mon/Wed 11am)

MTHFR MUTATION

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	10 days

NEURON SPECIFIC ENOLASE

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	10 days (cutoff day Sun/Mon/Wed 11am)

NK CELLS

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Room temperature
Turnaround time	1 – 2 weeks

NON-INVASIVE PRENATAL TEST (BABY SAFE)

Sample Requirement	Serum collected in a streck-top tube (special tube given upon request)
Sample Volume	10 mL
Temperature	Room temperature
Turnaround time	10 days

OLIGO CLONAL BANDING (Csf) + IgG SYNTHESIS RATE

Sample Requirement	Serum collected in a red-top tube + CSF collected in a sterile container
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	7 – 10 days (cutoff day Sun/Mon/Wed 11am)

ORGANIC ACIDS SCREEN - URINE

Sample Requirement	fasting early morning urine collected in a sterile container
Sample Volume	60 mL
Temperature	Frozen
Turnaround time	5 weeks (cutoff day Sun/Mon/Wed 11am)

OXALATE 24 HOURS - URINE

Sample Requirement	urine collected in 24 hour urine container
Sample Volume	*indicate total volume
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

OXALIC ACIDS

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	5 weeks (cutoff day Sun/Mon/Wed 11am)

OXCARBAZEPINE (TRILEPTAL)

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	10 days (cutoff day Sun/Mon/Wed 11am)

P1NP-INTACT N-TERMINAL PROPEPTIDE OF RTYPE I PROCOLLAGEN

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 days (cutoff day Sun/Mon/Wed 11am)

PHYLLOQUINONE (VITAMIN K1)

Sample Requirement	Serum collected in a red-top tube kept away from light
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	3 weeks (cutoff day Sun/Mon/Wed 11am)

PLASMINOGEN ACTIVATOR INHIBITOR

Sample Requirement	plasma collected in CITRATED blue-top
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	12 – 14 days (cutoff day Sun/Mon/Wed 11am)

PLASMODIUM FALCIPARUM TOAL ANTIBODIES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

PLATELETS ANTIBODIES BOUND OR FREE

Sample Requirement	Serum collected in a red-top tube + EDTA collected in a violet-top
Sample Volume	3 mL (serum) + 3 mL (5 EDTA tubes)
Temperature	Refrigerated
Turnaround time	4 weeks (cutoff day Sun/Mon/Wed 11am)

PORPHOBILINOGEN - URINE

Sample Requirement	early morning urine collected in a sterile container kept away from light
Sample Volume	60 mL
Temperature	refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

PORPHYRINS - BLOOD

Sample Requirement	EDTA collected in a violet-top tube protected from light kept away from light
Sample Volume	10 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

PORPHYRINS - URINE

Sample Requirement	early morning urine collected in a sterile container kept away from light
Sample Volume	60 mL
Temperature	Frozen
Turnaround time	2 – 3 weeks (cutoff day Sun/Mon/Wed 11am)

PRE-ALBUMIN

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	6 – 10 days (cutoff day Sun/Mon/Wed 11am)

PYRUVATE (CSF / Blood)

Sample Requirement	supernatant/CSF collected in a sterile container
Sample Volume	N/A
Temperature	Refrigerated
Turnaround time	18 – 20 days (cutoff day Sun/Mon/Wed 11am)

QUADRUPLE TEST

Sample Requirement	Serum collected in a red-top tube with clinical details
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	16 – 18 days

RENIN - PLASMA

Sample Requirement	Plasma collected in EDTA violet-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	7 – 10 days (cutoff day Sun/Mon/Wed 11am)

RESPIRATORY SYNCYTIAL VIRUS IgG

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	1 – 2 weeks (cutoff day Sun/Mon/Wed 11am)

REVERSE T3

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	12 – 15 days (cutoff day Sun/Mon/Wed 11am)

RUBELLA AVIDITY

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

SELENIUM

Sample Requirement	Plasma collected in royal blue-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 – 12 days (cutoff day Mon/Wed 12nn)

SEROTONIN

Sample Requirement	HEPARIN collected in a green-top tube DIET: Within 48 hours prior to the assay, avoid consuming bananas, chocolate, dried fruit, citrus fruit, avocados, tomatoes, plums, kiwis, pineapples and molluscs
Sample Volume	2 tubes x 3 mL
Temperature	Sample to be frozen within 1 hour. Home sampling is not advisable.
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

SERUM AMYLOID A PROTEIN

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 – 14 days (cutoff day Mon/Wed 12nn)

SIROLIMUS

**Please provide dosage and frequency of intake, time and date of last intake and time and date of blood collection*

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

SPECIFIC IgE TO PENICILLIN AND CEPHALOSPARIN

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 days

SPECIFIC IgE TO RABBIT

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 days

SPERM DNA FRAGMENTATION

Sample Requirement	seminal fluid collected in gray-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	10 – 14 days (cutoff day Mon/Wed 12nn)

SQUAMOUS CELL CARCINOMA (Scc) ANTIGEN

Sample Requirement	Non-hemolyzed Serum collected in a red-top tube. ATTENTION: interference possible in patients treated with biotin (vitamin B7, B8 or H) or taking any food supplement containing biotin. Essential to STOP treatment 8 days before taking the sample.
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 days (cutoff day Mon/Wed 12nn)

TACROLIMUS (Fk 506)

**Please provide: dosage and frequency of intake, time and date of last intake and blood collection.*

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	7 – 9 days (cutoff day Mon/Wed 12nn)

TB PCR

Sample Requirement	EDTA collected in a violet-top tube / urine collected in a sterile container
Sample Volume	3 mL (2 tubes) / 60 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

TETANUS ANTIBODY IgG

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	7 – 10 days (cutoff day Mon/Wed 12nn)

THEOPHYLLINE

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 days (cutoff day Mon/Wed 12nn)

THIOPURIN METHYL TRANSFERASE

Sample Requirement	EDTA collected in a violet-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks

THYROXINE BINDING GLOBULIN

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	3 weeks (cutoff day Mon/Wed 12nn); 4 weeks if dilution or control is needed

TOPIRAMATE (TOPAMAX)

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	3 weeks (cutoff day Mon/Wed 12nn)

TOXOCARA CANIS STRUCTURE

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Mon/Wed 12nn)

TOXOPLASMA AVIDITY

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	10 days (cutoff day Mon/Wed 12nn)

TRICHINELLA ANTIBODIES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Mon/Wed 12nn)

TRYPTASE

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Mon/Wed 12nn)

URINE FOR MYOGLOBIN

Sample Requirement	urine collected in a sterile container
Sample Volume	60 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Mon/Wed 12nn)

VANCOMYCIN

**Please provide dosage and frequency of intake, time and date of last intake and blood collection.*

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	10 days (cutoff day Mon/Wed 12nn)

VARICELLA ZOSTER PCR

Sample Requirement	bronchial secretion collected via transport media
Sample Volume	N/A
Temperature	Refrigerated
Turnaround time	10 days

VERY LONG CHAIN FATTY ACIDS

Sample Requirement	plasma collected in EDTA violet-top + HEPARIN collected in a green-top tube
Sample Volume	3 mL (2 tubes each)
Temperature	Frozen
Turnaround time	3 weeks (cutoff day Mon/Wed 12nn)

VITAMIN A - RETINOL

Sample Requirement	Plasma collected in HEPARIN green-top tube kept away from light
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

VITAMIN B1 - THIAMIN

Sample Requirement	EDTA collected in a violet-top tube kept away from light
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

VITAMIN B2 - RIBOFLAVIN

Sample Requirement	EDTA collected in a violet-top tube kept away from light
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

VITAMIN B6 - PYRIDOXINE

Sample Requirement	EDTA collected in a violet-top tube kept away from light
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

VITAMIN B8 - BIOTIN

Sample Requirement	Serum collected in a red-top tube / plasma collected in HEPARIN green-top tube kept away from light
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	3 weeks (cutoff day Mon/Wed 12nn)

VITAMIN C – ASCORBIC ACID

Sample Requirement	plasma collected in LITHIUM HEPARIN green-top tube kept away from light
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

VITAMIN D (1-25 Dihydroxycholecalciferol)

Sample Requirement	Non-hemolyzed Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

VITAMIN E

Sample Requirement	Serum collected in a red-top tube / HEPARIN green-top tube kept away from light
Sample Volume	3 mL
Temperature	Sample to be frozen within 90 minutes. Home sampling is not advisable.
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

VITAMIN K1

Sample Requirement	Serum collected in a red-top tube kept away from light

Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	3 – 4 weeks (cutoff day Mon/Wed 12nn)

VON WILLEBRAND FACTOR Rco

Sample Requirement	Plasma collected in CITRATED blue-top
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

VON WILLEBRAND FACTOR ANTIGEN

Sample Requirement	Plasma collected in CITRATED blue-top
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	2 weeks (cutoff day Sun/Mon/Wed 11am)

VON WILLEBRAND FACTOR ASSAY

Sample Requirement	Plasma collected in CITRATED blue-top
Sample Volume	3 mL
Temperature	Frozen
Turnaround time	5 – 7 days (cutoff day Mon/Wed 12nn)

Y CHROMOSOME - Microdeletion

Sample Requirement	EDTA collected in a violet-top tube protected from light
Sample Volume	3 – 5 mL
Temperature	Room temperature
Turnaround time	15 – 21 days (cutoff day Mon/Wed 12nn)

YERSINIA ANTIBODIES

Sample Requirement	Serum collected in a red-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	2 weeks (cutoff day Mon/Wed 12nn)

ZINC PROTOPORPHYRIN

Sample Requirement	HEPARIN green-top tube
Sample Volume	3 mL
Temperature	Refrigerated
Turnaround time	16 days (cutoff day Mon/Wed 12nn)

INSTRUCTIONS FOR PATIENTS

STOOL / FECAL COLLECTION

PATIENT'S PREPARATION:

1. If a patient has undergone a BARIUM SWALLOW, he/she must delay collection until the barium has passed from his/her system.
2. If possible, avoid the following within 48 hours before stool collection: Pepto Bismol, Maalox, Mineral oil, Antacids (Rolaids, Tums), Kaopectate.
3. Pass stool directly into container. Avoid contact with urine. Transfer pea-sized specimen into the container using the spatula provided.
4. Label it with your full name, date, and time of collection.
5. Submit the specimen to the lab within 2 hours of collection.

فحص البراز بطريقة التركيز
فحص زراعة البراز

تحضير المريض:

1- **يجب تاخير اعطاء عينة البراز اذا كان المريض خضع لتناول الباريوم حتى يتم التخلص من الباريوم**

MATERIALS:
1. Collection container with a spatula
2. Biohazard bag to be used for sample and requisition delivery to the lab.

SPECIMEN LABELING:
1. The patient shall be given the container labeled with his full name, unique number, and birth date.
2. Once the patient completes collection, he/she closes the container firmly and writes clearly the date, time and his/her initials.

SPECIMEN REJECTION CRITERIA:
1. Taking any of following within 48 hours before stool collection: Pepto-Bismol, Maalox, Mineral oil, Antacids (Rolaids, Tums), Kaopectate.
2. If a patient has undergone a barium swallow, he/she must delay collection until the barium has passed from his/her system.
3. Stool sample contaminated with urine.
4. Samples without proper patient identification, date and time of collection.

OCCULT BLOOD IN STOOL

PATIENT'S PREPARATION:

1. The patient should be placed on a meat-free low-peroxidase diet to reduce the possibility of false positive indications. This special diet should be started two days before testing and continued through the testing period.
2. Avoid Red or rare meat, and the following raw vegetables and fruits: broccoli, turnips, horseradish, cauliflower, red radishes, parsnips, and cantaloupe.
3. Avoid Vitamin C more than 250 mg per day.
4. Aspirin and anti-inflammatory drugs which may cause gastrointestinal irritation for 7days prior to and during the test period.
5. No iron supplements.

الدم الخفي في البراز
تحضير المريض:

1. يجب وضع المريض على نظام غذائي منخفض البيروكسيديز وغذاء خالي من اللحوم للحد من إمكانية مؤشرات إيجابية كاذبة. يجب أن تبدأ هذاالنظام الغذائي الخاص قبل يومين من الاختباروبجب الاستمرار بذلك خلال فترة الاختبار.

2. تجنب اللحوم الحمراء أ ، والخضار النيئة والفواكه التالية: القرنبيط، اللفت،الزهره الفجل والقرنبيط، الفجل الأحمر، والجزر الأبيض والشمام.

3. تجنب فيتامين (ج) ما يزيد على 250 ملغ يوميا.

4. يجب التوقف عن تناول الأسبرين والأدوية المضادة للالتهابات التي قد تسبب تهيج الجهاز الهضمي لمدة 7 أيام قبل وأثناء فترة الاختبار.

5.- يجب عدم تناول مكملات الحديد

MATERIALS:

1. Collection container with a spatula
2. Biohazard bag to be used for sample and requisition delivery to the lab.

COLLECTION PROCEDURE:

1. Label the specimen container (see instructions below).
2. Urinate before collecting the stool to avoid mixing urine with the stool sample.
3. Do not urinate while passing the stool.
4. Pass stool directly into container. Avoid contact with urine.
5. Transfer at least a pea-sized specimen into the container using the spatula provided.
6. Either solid or liquid stool can be collected.
7. Do not collect the sample from the toilet bowl.
8. Do not mix toilet paper, water, or soap with the sample.
9. Close the container securely/firmly.
10. Remove the gloves and clean your hands with soap and water.
11. Submit the specimen to the lab within 2 hours of collection.

SPECIMEN LABELING:

1. The patient shall be given the container labeled with his full name, unique number, and birth date.
2. Once the patient completes collection, he/she closes the container firmly and writes clearly the date, time and his/her initials.

SPECIMEN REJECTION CRITERIA:

1. Stool sample contaminated with menstrual blood.
2. Stool sample contaminated with urine.
3. Samples without proper patient identification, date and time of collection.

URINE ANALYSIS, CULTURE and SENSITIVITY

PATIENT PREPARATION:
No special preparation is required.

MATERIALS:

1. Wide-mouthed, sterile urine collection container.
2. Biohazard bag to be used for sample and requisition delivery to the lab.

COLLECTION:

1. Wash hands adequately. Clean the genital area with water.
2. Urinate into the toilet, and without stopping, collect the midstream urine by passing the sterile container into the stream of urine for a few seconds.
3. Do not contaminate the container with your finger or by contact with the body. Void remaining urine into the toilet. Replace the lid securely on the container.
4. Submit the specimen to the laboratory within 1 hour of collection. If it is not possible to deliver the urine specimen to the laboratory within 1 hour, refrigerate it after collection. Do not freeze.

فحص البول للروتيني وفحص زراعة البول

طريقة تجميع العينة:
1. غسل اليدين بشكل كاف. تنظيف المنطقة التناسلية بالماء.

2. تبول في المرحاض،بودون توقف، قم بجمع البول اثناء منتصف عملية التجميع عن طريق تمرير حاوية معقمة في مجرى البول لبضع ثوان.

3. لا تلوث الحاوية بإصبعك أو عن طريق الاتصال مع الجسم. قم بافراغ كمية البول المتبقية في المرحاض. قم بوضع غطاء آمن على الحاوية.

4. تقديم عينة إلى المختبر في غضون 1 ساعة من جمعها. إذا لم يكن ممكنا لتقديم عينة البول إلى المختبر في غضون 1 ساعة، ضع العينة في الثلاجة ولا تقوم بتجميدها.

SPECIMEN LABELING:

1. The patient shall be given the container labeled with his full name, unique number, and birth date.
2. Once the patient completes collection, he/she closes the container firmly and clearly writes the date, time and his/her initials.

SPECIMEN REJECTION CRITERIA:

1. Urine not delivered to laboratory within 1 hour of collection or within 24 hours and not refrigerated.
2. Urine contaminated with water and other substances.
3. Samples without proper patient identification, date and time of collection.

24-HOUR URINE COLLECTION

PATIENT'S PREPARATION:
For most tests (such as creatinine clearance or 24-hour urine protein), no special preparation is required. However, special tests for 24-hour urine collections (such as metanephrines or 5-HIAA) may require certain restrictions on diet or medications. In such cases, instructions will be given by your doctor or laboratory.

COLLECTION:

1. It is recommended to start the collection early in the morning. Take note of the Start Time and Date.
2. At the start of collection, completely empty your bladder by voiding into the toilet.
3. All urine passed during the next 24 hours must be collected into the bottle provided by the laboratory. You can pass urine into a clean dry jug or basin and pour immediately into the specimen bottle provided.
4. During the 24-hour period of collection, keep the specimen bottle refrigerated if the bottle does not contain any preservatives.
5. At the end of 24 hours, empty your bladder by collecting any voided urine into the bottle. Label the bottle with your Full Name, start Time/ Date of collection and the Time/Date of finish.
6. If more than one 24-hour container is used per collection, mark the bottles as "Bottle #1", "Bottle #2", etc., according to the sequence of filling.

تجميع البول لمدة 24 ساعة
تحضير المريض

بالنسبة لمعظم الاختبارات (مثل تصفية الكرياتينين أو 24 ساعة بروتين البول)، لا يلزم إعداد خاص. ومع ذلك، قد اختبارات خاصة لمدة 24 تتطلب بعض القيود على النظام الغذائي أو الأدوية. في مثل هذه الحالات، تعطى HIAA أو 5 metanephrinesساعة جمع البول (مثل تعليمات من قبل الطبيب أو المختبر.

1. فمن المستحسن ان يبدا الجمع في وقت مبكر من صباح اليوم. الرجاء تسجيل الوقت والتاريخ.

2. في بداية الجمع، قم بتفريغ المثانة تما ما في المرحاض.

3. يجب جمع كل البول بعد ذللك خلال ال 24 ساعة القادمة في الوعاء الذي تم تزويده من المختبر.

4. خلال فترة 24 ساعة من بداية الجمع يجب الحفاظ على عينة البول مبردة إذا الوعاء لا تحتوي على أي مواد حافظة.

5. في نهاية 24 ساعة،قم بتفريغ المثانة كاملا في الوعاء ودون اسمك الكامل ووقت وتاريخ بداية التجميع ووقت وتاريخ نهاية التجميع.|
6. إذا تم استخدام أكثر من حاوية واحدة على مدار 24 ساعة لكل مجموعة، قم بترقيم وعاء # 1"، "وعاء # 2"، وما إلى ذلك، وفقا لتسلسل ملء الاوعية.

SPECIMEN LABELING:

1. The patient shall be given the container(s) labeled with his full name, unique number, and birth date.
2. At the start of collection, the patient shall write the starting date and time.
3. Once the patient completes collection, he/she closes the container firmly and indicates the date and time of finish.
4. If more than one 24-hour container is used per collection, mark the bottles as "Bottle #1", "Bottle #2", etc., according to the sequence of filling.

SPECIMEN REJECTION CRITERIA:

1. Urine not refrigerated or preserved with additives during collection period and transport.
2. Urine contaminated with water and other substances.
3. Samples without proper patient identification, date and time of collection.

LIPID PROFILE (Total Cholesterol, Triglyceride, HDL, LDL)

PATIENT'S PREPARATION:

1. Fasting for 12 hours.

فحص الكولسترول الكلي والكولسترول العالي الكثافة (HDL) الكولسترول المنخفض الكثافة (LDL) والدهون الثلاثية

تحضير المريض:

1. صيام لمدة 12 ساعة.

SPECIMEN LABELING:

1. The specimen tube is labeled with the patient's full name (first, middle, and last), unique number, and birth date.
2. After collection, the phlebotomist writes the date and time of collection and the phlebotomist's initials.

SPECIMEN REJECTION CRITERIA:

1. Patient preparation not observed (not fasting for 10-12 hours)
2. Samples without proper patient identification, date and time of collection.
3. Hemolysed specimens.
4. Specimens collected in an inappropriate or expired tube.

SPUTUM CULTURE

PATIENT'S PREPARATION:

1. It is preferable to collect the sputum specimen early in the morning just after waking up.
2. Before collecting the specimen, gargle and rinse your mouth with water.
3. Prepare the sterile, screw-capped container to be used for collection.
4. Inhale repeatedly to the full capacity of the lungs and exhale the air with an explosive cough, expectorate the mucus into the container. The specimen MUST BE MUCUS (PHLEGM) FROM THE LUNGS. 'Spit" from the mouth is inadequate and will give incorrect results.
5. If multiple specimens are ordered for culture, it is better to collect one good sample on each consecutive day than to collect all samples on one day.

فحص زراعة البلغم
تحضير المريض:

1. فمن الأفضل لجمع عينات البلغم ان تتم في الصباح الباكر بعد الاستيقاظ من النوم.
2. قبل جمع العينة قم بغسل الفم والغرغرة، أوشطف الفم بالماء.
3. استخدم الوعاء ال
معقم الذي يتم تزويده من المختبر.
4. يستنشق مرارا إلى القدرة الكاملة من الرئتين وزفر في الهواء مع السعال المتفجرة، تنخم المخاط في وعاء. يجب أن تكون العينة المخاط (البلغم) من الرئتين. "البصاق" من الفم غير كافية، وسوف تعطي نتائج غير صحيحة.
5. إذا أمرت عينات متعددة للثقافة، فمن الأفضل لجمع عينة واحدة جيدة في كل يوم على التوالي من لجمع كل العينات في يوم واحد.

SPECIMEN LABELING:

1. The patient shall be given the container(s) labeled with his full name, unique number, and birth date.
2. Once the patient completes collection, he/she closes the container firmly and indicates the date and time of collection and his/her initials.

SPECIMEN REJECTION CRITERIA:

1. Specimens not representative of the respiratory tract conditions (e.g. phlegm/mucus not collected or specimen is mostly saliva).
2. Samples without proper patient identification, date and time of collection.

SEMEN ANALYSIS

PATIENT'S PREPARATION:

Abstain from ejaculating for 3 days before the date of specimen collection.

COLLECTION:

1. Use a sterile plastic or glass container provided by your doctor or laboratory.
2. A clean plastic or glass container from home may also be used. A specimen in a condom is not acceptable.
3. Collect the semen by masturbation or withdrawal method and ejaculate directly into the container.
4. Replace lid securely on the container.
5. Label the container with your full name, date and time of collection.
6. Submit the sample to the laboratory within 1 hour of collection.
7. If it is not possible to collect and deliver the specimen within 1 hour, the specimen must be collected on or near the laboratory premises.

تحليل السائل المنوي

تحضير المريض:

الامتناع عن القذف لمدة 3 أيام قبل موعد جمع العينات.

طريقة التجميع:

1. استخدام أ إناء زجاجي او اوعية بلاستيكية معقمة و مقدمة من قبل الطبيب أو المختبر.

2. ويمكن أيضا من البلاستيك نظيفة أو إناء زجاجي من المنزل يمكن استخدامها. عينة في الواقي الذكري غير مقبول.
3. جمع السائل المنوي عن طريق الاستمناء أو طريقة الانسحاب وينزل مباشرة في وعاء.
4. استبدال غطاء آمن على الحاوية.
5. تسمية حاوية مع لكم كامل الاسم والتاريخ والوقت لجمع.
6. تقديم عينة الى المختبر مع 1 ساعة من جمعها.
7. إذا لم يكن ممكنا لجمع وتسليم العينات في حدود 1 ساعة، لا بد من جمع العينات على أو بالقرب من مبنى المختبر.

GC CULTURE

PATIENT'S PREPARATION:

1. Samples must be transported to the laboratory immediately after collection.
2. Maintain samples at room temperature.
3. Neisseria species are sensitive to cold; do not refrigerate specimens for GC culture.
4. Alternatively, a pre-warmed Modified Martin Lewis plate may be inoculated at the collection site and transported to the laboratory immediately.

الثقافة

المريض التحضير:
1. ويجب أن تنقل العينات إلى المختبر مباشرة بعد جمع.
2. الحفاظ على العينات في درجة حرارة الغرفة.
3. أنواع النيسرية حساسة للبرد، لا برد العينات للثقافة GC.
4. بدلا من ذلك، قد يتم تلقيح ما قبل حرارة معدلة لوحة لويس مارتن في موقع جمع ونقلها إلى المختبر مباشرة.

GLUCOSE FASTING

PATIENT'S PREPARATION:

1. Fasting for 6-8 hours.

فحص السكر للصائم

تحضير المريض:
صيام لمدة 6-8 ساعات.

ORAL GLUCOSE CHALLENGE TEST (OGCT)

PATIENT'S PREPARATION

1. NPO post-midnight. Check the glucose baseline of the patient using a near patient testing glucose kit. If reading is greater than 11.0mmol/L, do not proceed. If reading is less than 11.0 mmol/L, proceed to the test.
2. Give the patient oral glucose loading solution (it can be 50 grams or 75 grams depending on the doctor's request.)
3. The patient must consume the glucose solution in 5 minutes.
4. Record time patient commenced the drink and the glucose load given.
5. Patients must remain seated at the center for 1 hr., unless under the supervision of their Medical Practitioner. No food or drink, except water, should be consumed during this time. If any food or drink is taken, this must be recorded on the request form.
6. Collect blood sample 60 minutes after start of glucose consumption using Na Fluoride (grey top).
7. Label 1hr and record time/date of collection.
8. End of procedure.

الفم اختبار التحدي الجلوكوز (OGCT)

المريض التحضير
1. NPO آخر midnight.Check الأساس الجلوكوز للمريض باستخدام اختبار المريض قرب عدة الجلوكوز. إذا القراءة أكبر من 11.0mmol / L، لا المضي قدما. إذا القراءة هي أقل من 11،0 مليمول / لتر، والمضي قدما على المحك.
2. إعطاء المريض الغلوكوز عن طريق الفم حل التحميل (أنه يمكن أن يكون 50 غراما أو 75 غراما اعتمادا على طلب الطبيب.)
3. يجب على المريض تستهلك حل الجلوكوز في 5 دقائق.
4. بدأت سجل المريض مرة والشراب، ونظرا للحمولة الجلوكوز.
5. يجب أن المريض البقاء في مقاعدهم في المركز لمدة 1 ساعة، ما لم يكن تحت إشراف ممارس الطبية. أي طعام أو شراب، باستثناء الماء، يجب أن تستهلك خلال هذه الفترة. إذا لم يتم اتخاذ أي طعام أو شراب، لا بد من تسجيل ذلك على شكل طلب.
6. جمع عينة من الدم بعد 60 دقيقة من بداية استهلاك السكر باستخدام فلوريد الصوديوم (رمادي أعلى).
7. hr1 التسمية وسجل الوقت / التاريخ من جمع.
8. نهاية الداخلي.

ORAL GLUCOSE TOLERANCE TEST (OGTT)

PATIENT PREPARATION

1. Patients are asked to eat a balanced diet that contains at least 150 to 200 grams (g) of carbohydrate per day for 3 days before the test. Fruits, breads, cereals, grains, rice, crackers, and starchy vegetables such as potatoes, beans, and corn are good sources of carbohydrate.
2. Patients are not allowed to eat, drink, smoke, or exercise strenuously for at least 8 hours before your first blood sample is taken.
3. Patients must tell their doctors about all the prescription and nonprescription medicines they are taking. Sometimes doctors will ask their patient to stop taking a certain medicine prior to testing.
4. Ask the time of their last meal.
5. Inform the patient about the duration of the test.
6. Take the fasting blood sample and label it as a fasting blood sample.
7. Give the patient oral glucose loading solution (it can be 100 grams or 75 grams depending on doctor's

request.

8. The patient must consume the glucose solution in 5 minutes.
9. Record time patient commenced the drink and the glucose load given.
10. Patients must remain seated at the center for the duration of the test, unless under the supervision of their Medical Practitioner. No food or drink, except water, should be consumed during this time. If any food or drink is taken, this must be recorded on the request form.
11. Collect blood sample 1 hour after start of glucose consumption using grey tube.
12. Label 1st hr. and record time/date of collection.
13. Patients must remain seated at the center for the duration of the test, unless under the supervision of their Medical Practitioner. No food or drink, except water, should be consumed during this time. If any food or drink is taken, this must be recorded on the request form.
14. Collect blood sample 1 hour after the 1st hour sample was taken using grey tube, this will be the 2nd hour sample.
15. Label 2nd hr. and record time/date of collection.
16. If the doctor specifically requested a 3rd hour sample, then the patient should wait again for another hour – refer to no. 12.
17. Collect blood sample 1 hour after the 2nd hour sample was taken using grey tube, this will be the 3rd hour sample.
18. Label 3rd hr. and record time/date of collection.
19. End of procedure.

)OGTTالفم اختبار تحمل الجلوكوز (

تحضير المريض

1. ويطلب من المرضى على اتباع نظام غذائي متوازن يحتوي على ما لا يقل عن 150 حتي 200 غراما (ز) من الكربوهيدرات في اليوم الواحد لمدة 3 أيام قبل إجراء الاختبار. الفاكهة، والخبز والحبوب والحبوب، والأرز، والمفرقعات، والخضار النشوية مثل البطاطا والفول والذرة هي مصادر جيدة من الكربوهيدرات.
2. ولا يسمح للمرضى لتناول الطعام والشراب والدخان وأو ممارسة بشدة لما لا يقل عن 8 ساعات قبل اتخاذ عينة الدم الأولى.
3. يجب أن نقول المرضى أطبائهم عن جميع الأدوية والوصفات غير وصفة التي تتخذها. في بعض الأحيان سوف يطلب الأطباء مرضاهم التوقف عن تناول دواء معين قبل الاختبار.
4. نطلب من وقت وجبة الماضي.
5. إبلاغ المريض عن فترة الاختبار.
6. أخذ عينة من الدم الصوم والتسمية على عينة الدم أثناء الصيام.
7. إعطاء المريض الغلوكوز عن طريق الفم حل التحميل (أنه يمكن أن يكون 100 غرام أو غرام 75 اعتمادا على طلب الطبيب.
8. يجب على المريض تستهلك حل الجلوكوز في 5 دقائق.
9. بدأت سجل المريض مرة والشراب، ونظرا للحمولة الجلوكوز.
10. يجب أن المريض البقاء في مقاعدهم في المركز لمدة الاختبار، إلا تحت إشراف ممارس الطبية. أي طعام أو شراب، باستثناء الماء، يجب أن تستهلك خلال هذه الفترة. إذا أي طعام أو شراب المتخذة، لا بد من تسجيل ذلك على شكل طلب.
11. جمع عينة الدم 1 ساعة بعد بدء استهلاك الجلوكوز باستخدام أنبوب اللون الرمادي.
12. 1 التسمية الموارد البشرية وسجل الوقت / التاريخ من جمع.
13. يجب أن المريض البقاء في مقاعدهم في المركز لمدة الاختبار، إلا تحت إشراف ممارس الطبية. أي طعام أو شراب، باستثناء الماء، يجب أن تستهلك خلال هذه الفترة. إذا أي طعام أو شراب المتخذة، لا بد من تسجيل ذلك على شكل طلب.
14. جمع عينة الدم 1 ساعة بعد أن تم أخذ عينة ساعة 1 باستخدام أنبوب اللون الرمادي، وستكون هذه العينة 2 ساعة.
15. ساعة التسمية 2 وسجل الوقت / التاريخ من جمع.
16. إذا كان الطبيب وطلب على وجه التحديد لعينة ساعة 3 ثم يجب على المريض الانتظار مرة أخرى لمدة ساعة - الإشارة إلى أي. 12.
17. جمع عينة الدم 1 ساعة بعد أن تم أخذ عينة 2 ساعة باستخدام أنبوب اللون الرمادي، وستكون هذه العينة ساعة 3.
18. ساعة التسمية 3 وسجل الوقت / التاريخ من جمع.
19. نهاية الداخلي.

PROLACTIN

PATIENT PREPARATION

1. Blood sample should be collected between 8 am and 10 am.

البرولاكتين

تحضير المريض

1. وينبغي جمع عينة من الدم بين الساعة 8 صباحا والساعة 10.

ACTH (ADENOCORTICOTROPIC HORMONE)

1. Required specimen: EDTA plasma (fresh)
2. Specimen may be taken either in the morning (between 6-10 AM) or in the evening (between 9 PM-12 AM).
3. Note in the request form the exact time of blood collection.
4. Centrifuge and separate EDTA plasma from the cells as soon as possible and freeze the plasma if there is a delay in testing.

(هرمون الكظر)

البلازما (جديد)1EDTA. مطلوب عينة:

2. يمكن أن تؤخذ العينات إما في الصباح (بين 6-10 صباحا) أو في المساء (بين 9:00 حتي 0:00).
3. ملاحظة في نموذج طلب في الوقت المحدد لجمع الدم.

من الخلايا في أسرع وقت ممكن وتجميد البلازما إذا كان هناك تأخير في الاختبار.4EDTA. الطرد المركزي وفصل بلازما

H. PYLORI UREA BREATH TEST

1. Patients should fast 6 hours before the test without eating or drinking.
2. The Patient should not be on antibiotics.
3. Patients should not have the test if they took bismuth drug in the last one month.
4. Patients should not have the test performed if they had a proton pump inhibitor in the last 7 days.
5. Patients should not have the test performed if they had a Sucralfate drug in the last 14 days.
6. The patient should inflate the balloon with first breath partially, simply squeeze the straw to keep the breath in the balloon from escaping, allow the patient to take another breath and hold it for 5-10 seconds and then again blow in the balloon.

. التنفس اليوريا بكتريا الاختبارH

1. المريض تصوم 6 ساعات قبل الفحص دون أكل أو شرب.
2. المريض يجب أن لا تكون على المضادات الحيوية.
3. وينبغي أن المرضى الذين ليس لديهم اختبار إذا ما أخذ الدواء البزموت في شهر واحد آخر.
4. وينبغي أن المرضى ليس لديهم اختبار يؤديها إذا كان لديهم مثبطات مضخة البروتون في آخر 7 أيام.

في الأيام ال 14 الماضية.5Sucralfate - المرضى الذين لا ينبغي أن يكون إجراء هذا الاختبار إذا كان لديهم دواء

6 - يجب على المريض أن تضخم البالون مع النفس 1 جزئيا، ضغط ببساطة سترو للحفاظ على التنفس في بالون من الهرب، تسمح للمريض أن تأخذ نفسا آخر وأنه عقد ل5-10 ثانية، ومرة أخرى ثم ضربة في البالون.

PROTHROMBIN TIME

PURPOSE:

The Prothrombin Time (PT) is the most common test used for monitoring oral anticoagulant therapy (warfarin or Coumadin, and congeners) combined with INR reporting. Oral anticoagulants reduce the activities of the 4 vitamins K-dependent procoagulant factors (factors II, VII, IX, and X), and the PT is sensitive to 3 of them. It is also useful as a screening assay to detect 1 or more coagulation factor deficiencies and coagulation inhibition.

PATIENT PREPARATION:

1. With the Physicians' order, Patient may be asked to stop taking medicines (Aspirin, Heparin, Antihistamines, and Vitamin C) before having the test as it may cause certain changes in the blood results.

2. No fasting is required; however, a high-fat meal prior to the blood draw may interfere with the test and should be avoided.

MATERIALS:

1. Sodium Citrate (Light-Blue top) evacuated tubes.
2. Pilot tube
3. Vacutainer needle and adapter, or syringe and needle.
4. Push-button butterfly set and adapter (for difficult phlebotomy or small veins).
5. Tourniquet
6. Sterile alcohol swabs
7. Bandage
8. Sterile cotton or gauze
9. Puncture-resistant sharps container

COLLECTION PROCEDURE (by the licensed healthcare staff):

1. Proceed to your laboratory or blood collection center and have your blood sample collected.
2. Blood collection is performed by trained and authorized phlebotomy staff of the laboratory or collection center.
3. The detailed procedure for phlebotomy can be found in "Blood Specimen Collection by Venipuncture" (***PHD/COL/SOP-003***) of this sample collection manual.
4. Note if the patient is under any medication during blood extraction.

SPECIMEN LABELING:

1. The specimen tube is labeled with the patient's full name (first, middle, and last), unique number, and birth date.
2. After collection, the phlebotomist writes the date and time of collection and the phlebotomist's initials.

SPECIMEN REJECTION CRITERIA:

1. Patient preparation not observed.
2. Samples without proper patient identification, date and time of collection.
3. hemolyzed specimens.
4. Specimens collected in an inappropriate or expired tube.
5. Sample under filled.

ACTIVATED PARTIAL THROMBOPLASTIN TIME

PURPOSE:

The Activated Partial Thromboplastin Time (APTT) is performed to investigate bleeding disorders and to monitor patients under heparin therapy (unfractionated heparin). It can also help in the detection of coagulation inhibitors such as lupus anticoagulant, specific factor inhibitors, and nonspecific inhibitors.

PATIENT PREPARATION:

1. With the Physicians' order, Patient may be asked to stop taking medicines (Aspirin, warfarin, heparin, antihistamines, vitamin c) before having the test as it may cause certain changes in the blood results.
2. No fasting is required; however, a high-fat meal prior to the blood draw may interfere with the test and should be avoided.

MATERIALS:

1. Sodium Citrate (Light Blue top) evacuated tubes.
2. Pilot tube
3. Vacutainer needle and adapter, or syringe and needle.
4. Push-button butterfly set and adapter (for difficult phlebotomy or small veins).
5. Tourniquet
6. Sterile alcohol swabs
7. Bandage
8. Sterile cotton or gauze
9. Puncture-resistant sharps container

COLLECTION PROCEDURE (by the licensed healthcare staff):

1. Proceed to your laboratory or blood collection center and have your blood sample collected.
2. Blood collection is performed by trained and authorized phlebotomy staff of the laboratory or collection center.
3. The detailed procedure for phlebotomy can be found in "Blood Specimen Collection by Venipuncture" (***PHD/COL/SOP-003***) of this sample collection manual.
4. Note if the patient is under any medication during blood extraction.

SPECIMEN LABELING:

1. The specimen tube is labeled with the patient's full name (first, middle, and last), unique number, and birth date.
2. After collection, the phlebotomist writes the date and time of collection and the phlebotomist's initials.

SPECIMEN REJECTION CRITERIA:

1. Patient preparation not observed.
2. Samples without proper patient identification, date and time of collection.
3. Hemolysed specimens.
4. Specimens collected in an inappropriate or expired tube.
5. Sample under filled.

THERAPEUTIC DRUG MONITORING

PURPOSE:

Therapeutic drug monitoring (TDM) is the use of drug concentration measurements in body fluids as an aid to the management of drug therapy for the cure, alleviation or prevention of disease.1 It has long been customary to adjust the dosage of drugs according to the characteristics of the individual being treated and the response obtained. Physicians have been most ready to do this when the pharmacological response can be easily established by clinical means (e.g., antihypertensive drugs, analgesics, hypnotics) or by laboratory markers (e.g., anticoagulants, hypoglycemic agents, lipid-lowering drugs, hormone preparations).

PATIENT PREPARATION:

Determine whether the collection is a trough level or peak level.

Trough Level:

1. Collection of blood 30 mins before administration of drug.

Peak Level:

2. Collection of blood at the peak of dosage depending on the pharmacokinetic characteristic of the drug e.g.
    a. Acetaminophen peak of time is 30 mins to 1 hour.
    b. Acetylsalicylic acid peak of time is 1 to 2 hours.
    c. Carbamazepine peak of time is 4 to 8 hours.
    d. Digoxin peak of time is 1 hour.
    e. Phenobarbital peak of time is 2 to 4 hours.
    f. Phenytoin peak of time is 3 to 12 hours.
    g. Valproic acid peak time is 1 to 4 hours.
    h. Lithium peak of time is 2 to 4 hours.

MATERIALS:

1. Red/Tiger/Yellow-top evacuated serum tubes.
2. Vacutainer needle and adapter, or syringe and needle.
3. Push-button butterfly set and adapter (for difficult phlebotomy or small veins).
4. Tourniquet
5. Sterile alcohol swabs
6. Bandage
8. Puncture-resistant sharps container

COLLECTION PROCEDURE (by the licensed healthcare staff):

1. Proceed to your laboratory or blood collection center and have your blood sample collected.
2. Blood collection is performed by trained and authorized phlebotomy staff of the laboratory or collection center.
3. The detailed procedure for phlebotomy can be found in "Blood Specimen Collection by Venipuncture" (***PHD/COL/SOP-003***) of this sample collection manual.
4. Note if the patient is under *trough level* or *peak level* of dosage.
5. Indicate the following in the request form:
    a. Date and time of last dosage
    b. Treatment start date and/or the date of any change of dosage.
    c. Dosage data (quantity administered, frequency, administration route)

SPECIMEN LABELING:

1. The specimen tube is labeled with the patient's full name (first, middle, and last), unique number, and birth date.
2. After collection, the phlebotomist writes the date and time of collection and the phlebotomist's initials.

SPECIMEN REJECTION CRITERIA:

1. Patient preparation not observed (wrong time of collection).
2. Samples without proper patient identification, date and time of collection.
3. Hemolyzed specimens.
4. Specimens collected in an inappropriate or expired tube.
5. Insufficient sample.

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