

IMMUNOLOGY / SEROLOGY / STD / ALLERGY

INTRODUCTION

The Immunology & Serology section provides services for Autoimmune serology, Allergen-Specific IgE serology, Infectious Diseases serology, Sexually Transmitted Diseases (STD) serology and STD culture.

For cultures for *Mycoplasma* and *Ureaplasma*, special transport media should be requested from the laboratory (Tel: 6321 4961) in preparation for taking the specimen, which should be inoculated into the media. Note that swabs may be toxic to the organisms, and that swabs should be swirled and squeezed against the side of the container and then discarded. They should never be left in the container. In the event that immediate transportation is not possible, specimens can be kept at 4 – 8°C for short periods of time. For *Neisseria gonorrhoeae* (GC) and *Haemophilus ducreyi* cultures, specimens should be streaked onto special agar plates available from the laboratory.

For serological tests for toxoplasmosis and legionellosis, paired sera (acute and convalescent; at least two weeks apart) should be sent. However, antibodies to some infections may take a longer time to develop (e.g. *Legionella* infections), such specimens should be taken a month to 6 weeks apart. Results for the first specimen are always despatched when ready, and this specimen is kept so that it can be run in parallel with the second specimen when it arrives. Interpretation for single specimens are always presumptive and do not carry the same weight as a rise in titre between the two specimens.

For further inquiries on tests and interpretation of results, laboratory users should call Client Services, who will direct the inquiry to the technical and professional staff in the Section.

Stat results are only available for syphilis screening test (VDRL/RPR) for potential organ donors.

Turnaround time is based on the number of working days.

ALPHABETICAL TEST LISTING – IMMUNOLOGY

ALLERGEN-SPECIFIC IgE ANTIBODY – FOOD PANEL

Specimen required	: 5 mL plain blood for each panel
Method	: UniCAP (ImmunoCAP)
Allergens	: Cow's milk, egg white, soya bean, peanut, hazelnut, wheat flour, shrimp, lobster, crab, clam, squid, cod, chicken, corn, potato, rice, baker's yeast (<i>Saccharomyces cerevisiae</i>)
Test results	: Results are semi-quantitative, reported as classes 0 to 6 (from no specific antibodies detected, to very high antibody titre).
Turnaround time	: Range 2 – 4 days
Day(s) test set up	: Monday to Friday

ALLERGEN-SPECIFIC IgE ANTIBODY – BEEF

Specimen required	: 3 mL plain blood
Method	: UniCAP (ImmunoCAP)
Test results	: Result is semi-quantitative, reported as classes 0 to 6 (from no specific antibodies detected, to very high antibody titre).
Turnaround time	: Range 2 – 4 days
Day(s) test set up	: Monday to Friday

ALLERGEN-SPECIFIC IgE ANTIBODY – PORK

Specimen required	: 3 mL plain blood
Method	: UniCAP (ImmunoCAP)
Test results	: Result is semi-quantitative, reported as classes 0 to 6 (from no specific antibodies detected, to very high antibody titre).
Turnaround time	: Range 2 – 4 days
Day(s) test set up	: Monday to Friday

ALLERGEN-SPECIFIC IgE ANTIBODY – RESPIRATORY PANEL

Specimen required	: 5 mL plain blood for each panel
Method	: UniCAP (ImmunoCAP)
Allergens	: <i>Pteronyssinus</i> mite, <i>Dermatophagoides farinae</i> , <i>Blomia tropicalis</i> , American cockroach, cat hair, dog epithelium, <i>Alternaria</i> , <i>Aspergillus fumigatus</i> , Bermuda grass, Bahia grass, Timothy grass, mugwort, common ragweed, <i>Acacia</i> , Australian pine, oil palm, <i>Candida albicans</i> , <i>Cladosporium herbarum</i> , <i>Curvularia lunata</i> , <i>Penicillium notatum</i> , <i>Trichophyton mentagrophytes</i> , <i>Helminthosporium</i> , <i>Mucor</i> , <i>Stemphylium</i>
Test results	: Results are semi-quantitative, reported as classes 0 to 6 (from no specific antibodies detected, to very high antibody titre).
Turnaround time	: Range 2 – 4 days
Day(s) test set up	: Monday to Friday

ANTI-CARDIOLIPIN ANTIBODY IgG

Specimen required	: 3 mL plain blood
Method	: Enzyme Immunoassay
Test results	: Reported as High Positive, Low to Medium Positive, Indeterminate, or Negative. Any values above the cut-off are reported as numerical figures in GPL units/mL.
Turnaround time	: Range 2 –7 days
Day(s) test set up	: Batch tested, once/week

ANTI-CARDIOLIPIN ANTIBODY IgM

Specimen required	: 3 mL plain blood
Method	: Enzyme Immunoassay
Test results	: Reported as High Positive, Low to Medium Positive, Indeterminate, or Negative. Any values above the cut-off are reported as numerical figures in MPL units/mL.
Turnaround time	: Range 2 –7 days
Day(s) test set up	: Batch tested, once/week

ANTI-CYCLIC CITRULLINATED PEPTIDE (CCP) ANTIBODY

Specimen required	: 3 mL plain blood
Method	: Fluoroenzymeimmunoassay
Test results	: Reported as Positive, Indeterminate or Negative. Any values above the cut-off are reported as numerical figures in U/mL.
Turnaround time	: Range 1 – 3 days
Day(s) test set up	: Monday – Friday

ANTI-DEOXYRIBONUCLEIC ACID, DOUBLE STRANDED (DS-DNA)

Specimen required	: 3 mL plain blood
Method	: Fluoroenzymeimmunoassay
Test results	: Reported as Positive, Indeterminate or Negative Any values above the cut-off are reported as numerical figures in IU/mL.
Turnaround time	: Range 1 – 3 days
Day(s) test set up	: Monday – Friday

ANTI-DOUBLE STRAND DNA ANTIBODY (CRITHIDIA LUCILIAE SUBSTRATE)

Specimen required	: 3 mL plain blood
Method	: Immunofluorescence
Test results	: Screening dilution is 1:10. Reported as Positive or Negative
Turnaround time	: Range 1 – 2 days
Day(s) test set up	: Monday – Friday

ANTI-ENDOMYSIUM ANTIBODY & ANTI-GLIADIN ANTIBODY (IgA)

Specimen required	: 3 mL plain blood
Method	: Immunofluorescence
Test results	: Screening dilution is 1:10. Reported as Positive or Negative for – Anti-endomysium (IgA) – Anti-gliadin (IgA)
Turnaround time	: Range 2 – 3 days
Day(s) test set up	: Monday – Friday

ANTI-EXTRACTABLE NUCLEAR ANTIGENS (ENA) – SCREENING

Specimen required	: 3 mL plain blood
Method	: Enzyme Immunoassay
Test results	: Reported as Positive or Negative for ENA If ENA screen is positive, sending the blood for ENA Profile is suggested.
Turnaround time	: Range 2 – 7 days
Day(s) test set up	: Batch tested, once/week

ANTI-EXTRACTABLE NUCLEAR ANTIGENS (ENA)-PROFILE

Specimen required	: 3 mL plain blood
Method	: Enzyme Immunoassay
Test results	: Reported as Positive or Negative for – Anti-Sm – Anti-RNP – Anti-SSA (Ro) – Anti-SSB (La) – Anti-Scl-70 – Anti-Jo-1
Turnaround time	: Range 2 – 7 days
Day(s) test set up	: Batch tested, once/week

ANTI-GLIADIN ANTIBODY (IgA)

See Anti-Endomysium Antibody & Anti-Gliadin Antibody (IgA)

ANTI-GLOMERULAR BASEMENT MEMBRANE (ANTI-GBM)

Specimen required	: 3 mL plain blood
Method	: Enzyme Immunoassay
Test results	: Reported as Positive or Negative. Any values above cut-off reported as numerical figures in RU/mL
Turnaround time	: Range 1 – 3 days
Day(s) test set up	: Monday – Friday

ANTI-INTRINSIC FACTOR

Specimen required	: 3 mL plain blood
Method	: Immunofluorescence
Test results	: Screening dilution is 1:10. Reported as Positive or Negative

ANTI-MPO AND ANTI-PR3 ANTIBODIES (ANCAE)

Specimen required	: 3 mL plain blood
Method	: Enzyme Immunoassay
Test results	: Reported as Positive or Negative for – Anti-MPO – Anti-PR3
Turnaround time	: Range 1 – 7 days
Day(s) test set up	: Batch tested, once/week

ANTI-NUCLEAR ANTIBODY (ANA)

Specimen required	: 3 mL plain blood
Method	: Immunofluorescence
Test results	: Starting dilution is 1:100. Serum worked-up in doubling dilutions from 1:100 to 1:800. Results reported as Positive or Negative. Pattern of fluorescence and titre are reported.
Turnaround time	: Range 2 – 4 days
Day(s) test set up	: Monday – Friday

ANTI-PARIETAL CELL ANTIBODY

Specimen required	: 3 mL plain blood
Method	: Immunofluorescence
Test results	: Screening dilution is 1:10. Reported as Positive or Negative
Turnaround time	: Range 2 – 3 days
Day(s) test set up	: Monday – Friday

ANTI-SACCHAROMYCES CEREVISIAE ANTIBODY (ASCA) IgA AND IgG

Specimen required	: 3 mL plain blood
Method	: Enzyme Immunoassay
Test results	: Reported as Positive, Indeterminate or Negative. Positive and Indeterminate results reported with values and interpretation.
Turnaround time	: Range 2 – 4 days
Day(s) test set up	: Monday – Friday

ANTI-SKELETAL MUSCLE ANTIBODY

Specimen required	: 3 mL plain blood
Method	: Immunofluorescence
Test results	: Screening dilution is 1:100. Reported as Positive or Negative
Turnaround time	: Range 2 – 3 days
Day(s) test set up	: Monday – Friday

ANTI-SKIN ANTIBODY (SERUM)

Specimen required	: 3 mL plain blood
Method	: Immunofluorescence
Test results	: Starting dilution is 1:10.

Reported as Positive or Negative for Anti basement membrane antibody and Anti intercellular antibody. Anti intercellular antibody positive samples will be diluted only at 1:10 for the first sample. Follow-up sample (s) will be diluted to end-point in parallel with its previous sample, for the monitoring of treatment.

Turnaround time : Range 2 – 4 days
Day(s) test set up : Monday – Friday

ANTI-SLA/LP ANTIBODY

See Anti-Liver Antibodies Profile

ANTI-SMOOTH MUSCLE ANTIBODY

Specimen required : 3 mL plain blood
Method : Immunofluorescence
Test results : Starting dilution is 1:100.
Serum worked-up in doubling dilutions from 1:100 to 1:400. Results reported as Negative, or Positive with titre
Turnaround time : Range 2 – 4 days
Day(s) test set up : Monday – Friday



ANTI-THYROGLOBULIN ANTIBODY

Specimen required : 3 mL plain blood
Method : Particle agglutination
Test results : Serum worked-up in four-fold dilutions from 1:100 to 1:102400. Results reported as Negative, or Positive with titre
Turnaround time : Range 2 – 4 days
Day(s) test set up : Monday, Wednesday and Friday



ANTI-THYROID MICROSOMAL ANTIBODY

Specimen required : 3 mL plain blood
Method : Particle agglutination
Test results : Serum worked-up in four-fold dilutions from 1:100 to 1:102400. Results reported as Negative, or Positive with titre
Turnaround time : Range 2 – 4 days
Day(s) test set up : Monday, Wednesday and Friday

TOTAL SERUM COMPLEMENT (CAE)

Specimen required : 3 mL plain blood. Send blood tube immediately to the laboratory at 2 – 8°C with an ice pack. If unable to send to the laboratory within 4 hours, separate the serum first (the serum may be kept at 2 – 8°C in the refrigerator while awaiting despatch) and then send to the laboratory with an ice pack.
Method : Enzyme Immunoassay
Test results : Normal values: 60 – 156 CAE Units
Turnaround time : Range 2 – 7 days
Day(s) test set up : Batch tested, once/week

ALPHABETICAL TEST LISTING – SEXUALLY TRANSMITTED DISEASES (STD)

ANTIBODY DETECTION

LIA TP CONFIRMATION IgG OR IgM, BLOOD

Specimen required	: 3 mL plain blood
Method	: Line Immunoassay
Test results	: Reported as Negative, Indeterminate or Positive. Assay used for confirmation of syphilis infection
Turnaround time	: Range 2 – 8 days
Day(s) Test Set Up	: Monday

LIA TP CONFIRMATION IgG, CEREBRO SPINAL FLUID (CSF)

Specimen required	: 1 mL CSF. Blood stained specimens are unsuitable.
Method	: Line Immunoassay
Test results	: Reported as Negative, Indeterminate or Positive. Assay used for confirmation of syphilis infection.
Turnaround time	: Range 2 – 8 days
Day(s) Test Set Up	: Monday

TREPONEMA PALLIDUM PARTICLE AGGLUTINATION (TPPA)

Specimen required	: 3 mL plain blood
Method	: Particle agglutination
Test results	: Reported as Non-reactive, Indeterminate or Reactive. Assay used for confirmation of syphilis infection.
Turnaround time	: Range 1 – 3 days
Day(s) Test Set Up	: Monday – Friday

VENEREAL DISEASE RESEARCH LABORATORY TEST (VDRL – BLOOD)

Specimen required	: 3 mL plain blood
Method	: Micro flocculation
Test results	: VDRL is a screening test for treponemal infection. The test is reported as Non-reactive, Weakly Reactive or Reactive. Reactive values are given with dilution factor in brackets. Reactive values should be confirmed by LIA TP Confirmation test or TPPA.
Turnaround time	: Range 1 – 3 days
Day(s) Test Set Up	: Monday – Friday

VENEREAL DISEASE RESEARCH LABORATORY TEST (VDRL – CSF)

Specimen required	: 1 mL clear CSF
Method	: Micro flocculation
Test results	: Results reported as Non-reactive or Reactive. Useful in the diagnosis of neurosyphilis. Please note that blood stained specimens are unsuitable for the test, as antibodies detected may be from blood.

Turnaround time : Range 1 – 3 days
 Day(s) Test Set Up : Monday – Friday



DETECTION BY CULTURE

CHANCROID (*HAEMOPHILUS DUCREYI*) CULTURE

Specimen required : Swab from genital ulcers, bubo aspirates and cervical swabs must be inoculated directly onto culture plates in the form of a “Z” at the bedside, the plates must be despatched to the laboratory as soon as possible. Culture plates can be obtained from the laboratory on request.

Method : Culture

Test results : Reported as *Haemophilus ducreyi* Isolated or Not Isolated

Turnaround time : Range 5 – 7 days

Day(s) Test Set Up : Monday – Saturday

GONOCOCCUS (*NEISSERIA GONORRHOEAE*) CULTURE

Specimen required : Specimen collection from specific sites:
Endocervix*: Collect endocervical specimens after inserting a speculum. Wipe away the cervical mucus with a cotton ball before taking the endocervical specimen.
Urethra*: Collect the urethral specimen at least one hour after the patient has urinated. If no discharge is present obtain the specimen by scraping the mucosal lining of the urethra. **Anorectal***: Collect anorectal swabs.
Oropharynx*: Swab from the posterior pharynx and the tonsillar crypts. **Conjunctiva***: In infants with conjunctivitis collect swab from the conjunctiva.

***Specimen swabs are to be inoculated onto GC agar plates in the form of a “Z” at the bedside.**

Bartholin gland: Drain pus or fluid, submit in a sterile container. **Skin lesions**: A punch biopsy from the lesion is preferable to material aspirated from the lesion, submit in a sterile container. **Joint fluid**: Aspirate fluid from infected joints and send to the laboratory in a sterile container or inoculate into Anaerobic blood culture media. **Blood Specimens**: Inoculate 10ml blood into a Anaerobic blood culture bottle. Advisable to send 2 sets of blood culture bottles.

All samples should reach the laboratory within two hours of collection. When a delay in the transport of samples for GC culture cannot be avoided, keep the plates at room temperature or 35°C in a candle jar (please see how to set up a candle jar) and despatch to the laboratory as soon as possible. Do not keep any samples in the refrigerator.

Method : Culture

- Test results : Reported as: *Neisseria gonorrhoeae* Isolated or Not Isolated
- Turnaround time : Range 3 – 5 days for urogenital cultures
Range 5 – 10 days for samples from sterile sites
- Day(s) Test Set Up : Monday – Saturday
- How to set up a candle jar : (a) Use a big tin that can be closed tightly.
(b) Wet a clean tissue paper with tap water to humidify atmosphere. Place it next to the plate(s) or underneath the plate.
(c) The candle that is used in a candle jar should be thick, white, odourless, and smokeless because the burning of coloured and scented candles may produce substances that are toxic to gonococci. Light the candle and place it on the stack of inverted agar plates with enough distance from the lid of the container, or place it next to the agar plates.
(d) Close the lid carefully and do not move the jar for 10 minutes.
(e) A properly burning candle in a closed jar will utilize oxygen and produce a 3% CO₂ atmosphere, and humidity will be provided by the wet tissue paper.
- Note: **Do not place inoculated plates/media in the refrigerator.** Leave at room temperature if no incubators are available.

MYCOPLASMA PNEUMONIAE PCR

(See Molecular Lab)

MYCOPLASMA PNEUMONIAE SEROLOGY

(See Virology Lab)

MYCOPLASMA HOMINIS CULTURE

- Specimen required : **Urogenital samples:**
Urethral swabs, prostatic secretions, semen, urinary calculi, cervical swabs, high vaginal swabs, endometrial tissue, tubal samples, fluid from the pouch of Douglas. **Urine** samples are **not suitable**.
- Respiratory samples: Nasopharyngeal, throat and endotracheal secretions
- Samples from sterile sites: Blood, CSF, joint fluid and fluid or tissue from other sterile sites
- Swabs:**
When swabs are obtained from patients, care should be taken to sample as many cells as possible, since mycoplasmas are cell-associated. Special mycoplasma transport media should be requested from the laboratory (Tel: 63214961) in preparation for taking the specimen

which should be inoculated into the media. As the swab-sticks may be toxic to the mycoplasmas, the swabs should be swirled and squeezed against the side of the container and then discarded. They should never be left in the container.

Tissue and fluid from all sites:

Small pieces of tissue (< 5 g) and small volumes (< 1 mL) of fluid/pus, should be sent in the mycoplasma transport media to ensure viability of the organism. Large amounts of such samples may be sent in plain, sterile containers.

Blood:

10 mL of blood obtained aseptically should be inoculated into an Anaerobic blood culture bottle commonly available in the wards.

All samples should be despatched to the laboratory as soon as possible. Specimens must be held at 4°C (refrigerated) if there is a delay for a few hours in transporting the specimen.

Method	: Culture
Test results	: Reported as <i>Mycoplasma hominis</i> Isolated or Not Isolated
Turnaround time	: Range 3 to 11 days
Day(s) Test Set Up	: Monday – Saturday

UREAPLASMA SPECIES CULTURE

Specimen required	: Specimen sources and transport requirements are the same as for <i>MYCOPLASMA HOMINIS</i> CULTURE.
Method	: Culture
Test results	: Reported as <i>Ureaplasma spp</i> Isolated or Not Isolated
Turnaround time	: Same as for <i>Mycoplasma hominis</i>
Day(s) Test Set Up	: Monday – Saturday

ANTIGEN DETECTION



CHLAMYDIA TRACHOMATIS ANTIGEN DETECTION (DIF)

Specimen required	: Chlamydia are intracellular organisms that infect epithelial surfaces. As such, specimens collected must contain as many epithelial cells as possible. Hence, specimens should ideally be swabs of epithelial surfaces with a good sampling of cells, e.g., conjunctival swabs, urethral swabs, cervical swabs.
-------------------	---

Patient samples that are obtained by swabs should be smeared onto the well of the Teflon-coated slide (obtainable from the laboratory, Tel: 63214961) at the bedside. The slide should be air-dried and despatched to the laboratory in a slide container.

General principles for
collection of swab specimens:

1. Wipe off excess mucous/pus from site with cotton or Dacron swab. Dispose of the swab.
2. (a) Urethra: Insert small Dacron swab 2 – 4 cm into urethra, rotate swab and withdraw.
(b) Cervix: Insert large or small Dacron swab into endocervix canal until most of the tip is not visible. Rotate for 5 – 10 seconds inside canal, withdraw swab without touching any vaginal surfaces.
(c) Conjunctival swab: Using a small Dacron swab, thoroughly swab the inner surface of the lower, then the upper eyelid.
3. Smear onto the well of Teflon coated slide. Air dry completely.

The following types of specimens will be **rejected** by the laboratory:

- Body fluids e.g. semen and urine
- Pieces of tissue, rectal swabs and samples submitted in the form of dry swabs

Method : Direct Immunofluorescence (DIF)

Test results : Reported as follows:

Chlamydial trachomatis elementary bodies, Seen or Not Seen

Turnaround time : Range 2 – 3 days

Day(s) Test Set Up : ~~Tuesday and Friday~~

CHLAMYDIA PNEUMONIAE PCR

(See Molecular Lab)

CHLAMYDIA TRACHOMATIS PCR

(See Molecular Lab)

CHLAMYDIA SEROLOGY

(See Virology)

ALPHABETICAL TEST LISTING – MISCELLANEOUS INFECTIOUS DISEASES – ANTIBODIES AND ANTIGENS

AMOEBC ANTIBODY

Specimen required	: 3 mL plain blood
Method	: Indirect haemagglutination
Test results	: Titre \geq 1:32 Presumptive positive Titre below 1:32 Inconclusive: suggest send second specimen in 1 week.
Turnaround time	: Range 2 – 7 days
Day(s) test set up	: Batch tested, once/week

ASPERGILLUS ANTIBODY

Specimen required	: 3 mL plain blood To diagnose aspergilloma and allergic bronchopulmonary aspergillosis (ABPA) in immunocompetent hosts
Method	: Immunodiffusion
Test results	: Reported as Positive or Negative for <i>Aspergillus</i> Antibody
Turnaround time	: Range 2 – 8 days
Day(s) test set up	: Batch tested, once/week

ASPERGILLUS GALACTOMANNAN ANTIGEN

Specimen required	: 5 mL plain blood To diagnose invasive aspergillosis in immunocompromised hosts
Method	: Enzyme Immunoassay
Test results	: Reported as <i>Aspergillus</i> galactomannan Antigen Index Negative < 0.5 Ag Index Positive \geq 0.5 Ag Index
Turnaround time	: Range 1 – 3 days
Day(s) test set up	: Batch tested, Tuesday and Friday

BORRELIA BURGDORFERI ANTIBODY IgM (IF)

Specimen required	: 3 mL plain blood. To diagnose acute infection, send acute specimen for IgM and second specimen taken 4 weeks later for IgG on the pair.
Method	: Immunofluorescence
Test results	: Test done at serum dilution of 1:10. Reported as Detected or Not Detected. For positive results, suggest <i>B. burgdorferi</i> Western Blot (WB) for confirmation. In acute infections, IgM should be positive and a \geq 4 fold rise in IgG titre will be seen.
Turnaround time	: Range 2 – 3 days
Day(s) test set up	: Monday – Friday

BORRELIA BURGDORFERI ANTIBODY IgG (IIF)

Specimen required	: 3 mL plain blood. Ideally paired acute and convalescent sera should be sent for both IgM and IgG. (Please see <i>Borrelia Burgdorferi</i> Antibody IgM.)
Method	: Immunofluorescence
Test results	: Screening dilution is 1:80. Reported as Detected with the end-point titre or Not Detected For single specimens: If titre is $\leq 1:320$, result is Inconclusive, suggest sending second specimen in 4 weeks, where IgG will be performed on the pair. If titre is $> 1:320$ result is reported as Presumptive positive. For Presumptive positive results, suggest <i>B. burgdorferi</i> Western Blot (WB) for confirmation.
Turnaround time	: Range 2 – 4 days
Day(s) test set up	: Monday – Friday

BORRELIA BURGDORFERI ANTIBODY, WESTERN BLOT (IgG OR IgM)

Specimen required	: 3 mL plain blood. The screening result and the lab number should be indicated.
Method	: Western Blot
Test results	: Reported as Positive, Indeterminate or Negative
Turnaround time	: Range 2 – 7 days
Day(s) test set up	: Monday – Friday

BRUCELLA ANTIBODY

Specimen required	: 3 mL plain blood
Method	: Tube agglutination
Test results	: Serum tested using doubling dilutions from 1:20 to 1:640 Presumptive Positive reported if titre $\geq 1:160$. If $< 1:160$, suggest send second specimen 2 weeks later.
Turnaround time	: Range 2 – 8 days
Day(s) test set up	: Once/week

CLOSTRIDIUM DIFFICILE TOXINS A & B

Specimen required	: Fresh stool (one teaspoon or about 10 mm ³ of stool) in a clean leak-proof container with a tight-fitting lid. If it is not possible to despatch the stool sample to the laboratory within the same day, the sample should be kept at 2 – 8°C in the refrigerator. Please note: Stool in transport media, on swabs, mixed in urine or preservatives, is not appropriate for testing and will have to be rejected.
Method	: Horizontal-flow Enzyme Immunoassay
Test results	: Reported as Detected or Not Detected
Turnaround time	: Same day of receipt of sample
Day(s) test set up	: Monday – Saturday (Saturday morning up to 12 noon)

HELICOBACTER PYLORI STOOL ANTIGEN (HPSA)

Specimen required : Fresh stool (one teaspoon or about 10 mm³ of stool) in a clean leak-proof container with a tight-fitting lid. If it is not possible to despatch the stool sample to the laboratory within the same day, the sample should be kept at 2 – 8°C in the refrigerator.

Please note:

1. Stool specimens should be sent 2 weeks after discontinuation of therapy involving antimicrobials, proton pump inhibitors and bismuth preparations, as these are known to cause false-negative results if ingested within 2 weeks prior to stool testing.
2. Stool in transport media, on swabs, mixed in urine or preservatives, is not appropriate for testing and will have to be rejected.

Method : Immunochromatographic assay
 Test results : Reported as Detected or Not Detected
 Turnaround time : Same day of receipt of sample
 Day(s) test set up : Monday – Saturday (Saturday morning up to 12 noon)

LEGIONELLA ANTIBODY

Specimen required : 3 mL plain blood
 Paired acute and convalescent (3 – 6 weeks after onset of fever) should be sent. Acute phase sera are tested alone; a convalescent specimen is requested and when received will be run together with the acute phase sera.

Method : Immunofluorescence
 Test results : Serum run at doubling dilutions from 1:64 to 1:1024. A fourfold rise in titre between acute and convalescent sera is considered proof of ongoing infection. A single titre of $\geq 1:1024$ is considered a presumptive positive.

Turnaround time : Range 1 – 4 days
 Day(s) test set up : Monday – Friday

LEGIONELLA URINARY ANTIGEN (L. PNEUMOPHILA SEROGROUP 1)

Specimen required : 5 mL fresh urine
 Method : Immunochromatographic assay
 Test results : Reported as Presumptive Positive or Presumptive Negative
 Turnaround time : Same day of receipt of sample
 Day(s) test set up : Monday – Saturday (Saturday morning up to 12 noon)

LEPTOSPIRA IgM ANTIBODY

Specimen required : 3 mL plain blood
 Method : Enzyme immunoassay (qualitative)
 Test results : Results reported as Positive, Indeterminate or Negative
 Convalescent samples are required for Indeterminate and Negative results. Positive results are considered “Presumptive positive”
 Turnaround time : Range 2 – 7 days
 Day(s) test set up : Batch tested, once/week

**TOXOPLASMA ANTIBODY, IgM**

Specimen required	: 3 mL plain blood To diagnose acute infection, send acute specimen and second serum taken 14 days later for IgG on the pair as well.
Method	: Immunofluorescence
Test results	: Test done at serum dilution of 1:10. Reported as Detected, Indeterminate or Not Detected. Acute infection will show IgM positive and ≥ 4 fold rise in IgG.
Turnaround time	: Range 1 – 3 days
Day(s) test set up	: Monday – Friday

TOXOPLASMA ANTIBODY, IgG

Specimen required	: 3 mL plain blood Paired acute and convalescent sera (3 – 6 weeks after onset of fever) should be sent. Acute phase sera are tested alone; a convalescent specimen is requested and when received will be run together with the acute phase sera. Ideally, paired acute and convalescent sera should be sent for both IgM and IgG. (Please see <i>Toxoplasma</i> Antibody, IgM.)						
Method	: Immunofluorescence						
Test results	: Results reported as Detected or Not Detected at the screening titre (1:16) if only IgG is requested. If the serum is sent for both IgM and IgG testing or both acute and convalescent sera are received, they will be run at doubling dilutions from 1:16 to 1:1024. Interpretation of titres on single specimens: <table> <tr> <td>< 1:16:</td> <td>No previous infection</td> </tr> <tr> <td>1:16 – 1:512:</td> <td>A single specimen with such a result has no significance in itself; such titres may be prevalent in a population where toxoplasma infection is endemic.</td> </tr> <tr> <td>$\geq 1:1024$:</td> <td>Presumptive positive Four-fold rise in titre of greatest significance</td> </tr> </table>	< 1:16:	No previous infection	1:16 – 1:512:	A single specimen with such a result has no significance in itself; such titres may be prevalent in a population where toxoplasma infection is endemic.	$\geq 1:1024$:	Presumptive positive Four-fold rise in titre of greatest significance
< 1:16:	No previous infection						
1:16 – 1:512:	A single specimen with such a result has no significance in itself; such titres may be prevalent in a population where toxoplasma infection is endemic.						
$\geq 1:1024$:	Presumptive positive Four-fold rise in titre of greatest significance						
Turnaround time	: Range 1 – 4 days						
Day(s) test set up	: Monday – Friday						

URINE PREGNANCY SCREEN (HCG ASSAY)

Specimen required	: 5 mL fresh urine
Method	: Immunochromatographic assay
Test results	: Sensitivity of this test is 25 mIU hCG/mL, a level usually achieved 3 – 4 days after the first missed menstrual period. Reported as Negative or Positive
Turnaround time	: Same day of receipt of sample
Day(s) test set up	: Monday – Saturday (Saturday morning up to 12 noon)