MALARIA SCREEN

London Health Sciences Centre | St. Joseph's Health Care London

Pathology and Laboratory Medicine

Orderable - MALS

STAT: 2 hours

Alternate Name(s):

Malaria Prep
Malarial Parasites

Laboratory:
Core Lab

Complicated or mixed infections will be referred to the Public Health Ontario Laboratory for confirmation at the discretion of the laboratory.

Requisition:
GENERAL LABORATORY REQUISITION

Method of Analysis:
The malaria screening orderable is a panel of tests. Initially a molecular screening test is performed using the illumigene™ DNA Amplification Assay for the Detection of Plasmodium species. The illumigene™ Malaria assay utilizes loop-mediated isothermal DNA amplification (LAMP) technology to detect Plasmodium sp. DNA by targeting segments of the Plasmodium genome. Positive molecular screening tests will be reflexively tested with an

Specimen:

Adult	Pediatric
4 mL K_2 or K_3 EDTA Lavender top Vacutainer tube	0-2 years: 0.5 mL Lavender Microtainer 2-10 years: 3 mL Lavender top tube

Collection Information:

Orders generated within LHSC (non-referred in samples) must be received in the laboratory as soon as possible as testing must be initiated within 1 hour of sample collection.

Orders for confirmation of malarial screening performed in regional centres (referred-in samples) must be received in a timely manner in order to meet the Ministry standard of a 24-hour turn-around-time following detection of malaria.

Referred in (non LHSC) repeat testing on previous negative samples (within 7 days) will not be tested.

Minimum volume required for testing is 500 uL.

Reference Ranges:

Negative

Critical Value: Positive molecular screen, parasitemia level > 5.0%

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immune-chromatography-based rapid malaria screening method for presumptive speciation of P. falciparum or non-P. falciparum and a standard blood film will be microscopically examined and a parasitemia level (expressed as a percentage of infected red blood cells) will be reported. Thick and thin films will be microscopically examined and a final speciation report will be generated in consultation with a Hematologist.

Test Schedule:
Available 24 hours a day, 7 days per week

Interpretive Comments:

The initial molecular screening test has a sensitivity of 97.3% with a negative predictive value of 99.8%. The assay is capable of detecting the presence of Plasmodium falciparum, Plasmodium vivax, Plasmodium ovale, Plasmodium malariae and Plasmodium knowlesi but CANNOT distinguish between these species. There is no cross-reactivity with non-Plasmodium species such as Babesia. Because of the extremely high negative predictive value, a negative molecular screening test excludes malaria and will not require any reflexive testing such as the rapid malaria test for presumptive species, parasitemia level or examination of thick and thin films for final speciation. Repeated testing of the patient over the course of multiple days is not required if the initial molecular screen is negative.

Special Processing:

Referring centres must include the following with all requests for confirmation:
- Requisition with patient demographics (HCN included)
- Travel history
- CBC results
- Wrights-Giemsa (or equivalent) stained blood film
- 4 unstained “thick” films
- 4 unstained and methanol fixed “thin” films
- The reported results of the rapid malaria screening test
- The reported initial level of parasitemia and presumptive speciation
- A fax number to which the final report can be sent

Referring centres are to send samples to:
Core Laboratory (VH)
Room D1-218
London Health Sciences Centre
800 Commissioners Rd., London ,ON
N6A 5W9

Referring centres are to notify the laboratory (519-685-8500 ext 52544) prior to sending the sample.

Critical Information Required:

Travel history, transfusion history and recent anti-malarial treatment are required pieces of information to be provided at time of order submission either electronically or by paper requisition.

Storage and Shipment:

Ship samples at room temperature.

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Specimen Stability:

Samples are stable for 7 days at room temperature and 14 days at 2-8ºC. Samples required beyond 14 days should be frozen at -80ºC