MAYO CLINIC LABORATORIES

Test Definition: LY27B

HLA-B27, Blood

Overview

Useful For
Assisting in the diagnostic process of ankylosing spondylitis, juvenile rheumatoid arthritis, and reactive arthritis

Method Name
Flow Cytometry

NY State Available
Yes

Specimen

Specimen Type
Whole Blood EDTA

Ordering Guidance
This test is best used alone if a particular disease, such as ankylosing spondylitis, is under consideration.

Orders received for both this test and 1LRR / Human Leukocyte Antigens (HLA) Class I Typing Low Resolution, Recipient, Blood or 1DIS / Human Leukocyte Antigens (HLA) A-B-C Disease Association Typing Low Resolution, Blood (which provides data on all HLA Class I low-resolution antigens, including B27) will be questioned due to test overlap.

Shipping Instructions
Specimen must arrive within 96 hours of collection.

Specimen Required
Container/Tube: Lavender top (EDTA)
Specimen Volume: 6 mL
Collection Instructions: Send whole blood specimen in original tube. **Do not aliquot.**

Forms
If not ordering electronically, complete, print, and send a General Request (T239) with the specimen.

Specimen Minimum Volume
1 mL

Reject Due To
All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Whole Blood EDTA	Ambient	4 days	

Clinical & Interpretive

Clinical Information

This major histocompatibility coded class I antigen is associated with ankylosing spondylitis, juvenile rheumatoid arthritis, and reactive arthritis. The mechanism of the association is not understood but probably is that of linkage disequilibrium.

There is an increased prevalence of human leukocyte antigen (HLA)-B27 in certain rheumatic diseases, particularly ankylosing spondylitis.

Studies have demonstrated that the *HLA-B*27:06* allele, which is present in a small percentage of individuals of Asian ethnicity, may not be associated with ankylosing spondylitis.

Reference Values

An interpretive report will be provided.

Interpretation

Approximately 8% of the normal population carries the human leukocyte antigen (HLA)-B27.

HLA-B27 is present in approximately 89% of patients with ankylosing spondylitis, 79% of patients with reactive arthritis, and 42% of patients with juvenile rheumatoid arthritis. However, lacking other data, it is not diagnostic for these disorders.

Cautions

Extreme temperature changes during shipping may alter the specimen making it unacceptable for testing.

Clinical Reference

1. Profaizer T, Dibb K, Bethers H, et al. Comparison of next-generation sequencing-based human leukocyte antigen typing with clinical flow cytometry and allele-specific PCR melting assays for HLA-B27 genotyping. J Appl Lab Med. 2021;6(5):1221-1227. doi:10.1093/jalm/jfab046
2. Skalska U, Kozakiewicz A, Maslinski W, Jurkowska M. HLA-B27 detection - comparison of genetic sequence-based method and flow cytometry assay. Reumatologia. 2015;53(2):74-78. doi:10.5114/reum.2015.51506
3. Brewerton DA, Hart FD, Nicholls A, Caffrey M, James DC, Sturrock RD. Ankylosing spondylitis and HL-A27. Lancet. 1973;1(7809):904-907
4. Albrecht J, Muller HA. HLA-B27 typing by use of flow cytofluorometry. Clin Chem. 1987;33(9):1619-1623

Performance

Method Description

Anti- human leukocyte antigens (HLA) fluorescein isothiocyanate/CD3 phycoerythrin monoclonal antibody reagent is

added to human whole blood. The fluorochrome-labeled antibodies bind specifically to leukocyte surface antigens. The stained specimens are treated with lysing solution to lyse red blood cells, then washed and fixed prior to flow cytometric analysis. The flow cytometer is set up using BD 7 Color Setup beads and CS and T beads with FacsDIVA software and HLA-B27 calibration beads with the HLA-B27 software. The HLA-B27 software first identifies, on a forward scatter (FSC) versus fluorescence 2 (FL2) dot plot, the cluster of events with a uniformly bright CD3-positive signal (T-lymphocytes). During analysis, the median fluorescence intensity of the anti-HLA-B27 FITC signal is calculated for the events included in the FSC/FL2 gate. Specimens with a median fluorescence 1 channel result greater than or equal to the decision marker are considered HLA-B27 positive. Specimens with a median channel result lower than the decision marker are considered HLA-B27 negative. This decision marker is encoded in the suffix of the reagent lot number listed on the vial label.(Package insert: BD HLA-B27 Test Kit. BD Biosciences; 01/2018)

PDF Report
No

Day(s) Performed
Monday through Saturday

Report Available
2 to 14 days

Specimen Retention Time
7 days

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Main Campus

Fees & Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification
This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information
86812

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
LY27B	HLA-B27, B	26028-1

Test Definition: LY27B

HLA-B27, Blood

Result ID	Test Result Name	Result LOINC® Value
LY27	HLA-B27 Result	26028-1
B27C	Interpretation	96625-9