
Reporting Title: Hexosaminidase A (MUGS), S**Performing Location:** Rochester**Ordering Guidance:**

Testing for Tay-Sachs Disease and Sandhoff Disease

The following tests are available for diagnostic and carrier testing for Tay-Sachs and Sandhoff diseases.

NAGR / Hexosaminidase A and Total, Leukocytes/Molecular Reflex, Whole Blood:

- This is the recommended test for carrier testing for Tay-Sachs disease and Sandhoff disease.
- Testing begins with hexosaminidase A and total enzyme analysis. If the results are consistent with an affected or carrier for Tay-Sachs disease or Sandhoff disease, next-generation sequencing to detect single nucleotide and copy number variants for HEXA or HEXB, respectively, will automatically be performed on the original specimen.
- This test is appropriate for males and pregnant or nonpregnant females.

NAGW / Hexosaminidase A and Total Hexosaminidase, Leukocytes:

- This test can be used for diagnosis and carrier testing for Tay-Sachs disease or Sandhoff disease.
- Results for hexosaminidase A and total enzyme analysis are reported with recommendations for additional testing when appropriate. All follow-up testing must be ordered separately on new specimens.
- This test is appropriate for males and pregnant or nonpregnant females.

NAGS / Hexosaminidase A and Total Hexosaminidase, Serum:

- This test can be used for diagnosis and carrier testing for Tay-Sachs disease or Sandhoff disease. Results for hexosaminidase A and total enzyme analysis are reported with recommendations for additional testing when appropriate.
- If results indicate normal, indeterminate, or carrier status and the suspicion of Tay-Sachs disease remains high, MUGS / Hexosaminidase A, Serum for Tay-Sachs disease (B1 variant) can typically be added and performed on the same specimen.
- With the exception of MUGS, all follow-up testing must be ordered separately on new specimens.
- This test is not appropriate for pregnant females or women receiving hormonal contraception. This test is appropriate for males and nonpregnant females.
- This test is particularly useful when it is difficult to obtain enough blood to perform leukocyte testing (NAGR or NAGW), as may be the case with infants.

MUGS / Hexosaminidase A, Serum:

- This is the recommended test for diagnosis and carrier testing for the B1 variant of Tay-Sachs disease. This test will not detect Sandhoff disease.
- This test should not be ordered as a first-line test. Rather, this test should be ordered when the NAGR, NAGW, or NAGS indicate normal, indeterminate, or carrier results and the suspicion of Tay-Sachs disease remains high. In most cases, this test can be performed on the original specimen collected for NAGS.

Necessary Information:

Physician's name and phone number are required.

Specimen Requirements:

Patient Preparation: Patient should be fasting for 4 hours.

Collection Container/Tube:

Preferred: Serum gel

Acceptable: Red top

Submission Container/Tube: Plastic vial

Specimen Volume: 1 mL

Collection Instructions: Centrifuge and aliquot serum into plastic vial.

Specimen Minimum Volume:

0.15 mL

Forms:

1. New York Clients-Informed consent is required. Document on the request form or electronic order that a copy is on file. The following documents are available:

-Informed Consent for Genetic Testing (T576)

-Informed Consent for Genetic Testing-Spanish (T826)

2. Biochemical Genetics Patient Information (T602)

3. If not ordering electronically, complete, print, and send a Biochemical Genetics Test Request (T798) with the specimen.

Specimen Type	Temperature	Time	Special Container
Serum	Frozen (preferred)	365 days	
	Refrigerated	5 days	

Result Codes:

Result ID	Reporting Name	Type	Unit	LOINC®
80350	Hexosaminidase A (MUGS), S	Numeric	U/L	2643-5

LOINC and CPT codes are provided by the performing laboratory.

Supplemental Report:

No

CPT Code Information:

83080

Reference Values:

1.23-2.59 U/L (normal)
1.16-1.22 U/L (indeterminate)
0.58-1.15 U/L (carrier)