
Lab Dept: Hematology

Test Name: HEMOGLOBIN VARIANT, A2 & F
QUANTITATION

General Information

Lab Order Codes: HGBCE

Synonyms: Hbg S and F Quantitation for Therapeutic Monitoring

CPT Codes: 83020 – Hemoglobin fractionation and quantitation; electrophoresis

Testing includes: Hemoglobin variant, A2 and F measurement by capillary electrophoresis and reported as a % for patients <24 months of age.

Logistics

Test Indications: **ORDERED BY LAB ONLY for patients <24 months of age.**
Providers should order the Hemoglobin Variant, A2 & F Quantitation (HGBA2F) test available in the EHR. Lab staff will reorder the sendout test if applicable.

Useful for monitoring patients <24 months of age with sickling disorders who have received hydroxyurea or transfusion therapy. This test is not intended for diagnostic purposes; thus it is assumed the patient's diagnosis is established. If the patient has never been appropriately studied, hemoglobin electrophoresis is necessary.

Lab Testing Sections: Hematology - Sendouts

Referred to: Mayo Clinic Laboratories (MML Test: HGBCE)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 1-2 days, performed Monday - Friday

Special Instructions: This test is not intended for diagnostic purposes; sendout test is reserved for lab use only based on patient age. See [Test Indications](#).

Specimen

Specimen Type: Whole blood

Container: Lavender (EDTA) top tube
Alternate tube: Yellow (ACD) or Green (Heparin)

Draw Volume: 4mL (Minimum: 1 mL) blood

Processed Volume: Same as Draw Volume.

Collection: Routine venipuncture

Special Processing: Lab Staff: **Do Not** centrifuge. Specimen should remain in original collection container. **Do not** freeze. Send refrigerated.

Specimen is stable refrigerated for 10 days.

Patient Preparation: None

Sample Rejection: Testing cannot be performed on clotted samples; frozen specimens; mislabeled or unlabeled specimens.

Interpretive

Reference Range:

Hgb Fraction	Age	Range
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Hgb A	1 – 30 days:	5.9 – 77.2%
	1 – 2 months:	7.9 – 92.4%
	3 – 5 months:	54.7 – 97.1%
	6 – 8 months:	80.0 – 98.0%
	9 – 12 months:	86.2 – 98.0%
	13 – 17 months:	88.8 – 98.0%
	18 – 23 months:	90.4 – 98.0%
Hgb A2	1 – 30 days:	0.0 – 2.1%
	1 – 2 months:	0.0 – 2.6%
	3 – 5 months:	1.3 – 3.1%
	>or = 6 months	2.0 – 3.3%
Hgb F	1 – 30 days:	22.8 – 92.0%
	1 – 2 months:	7.6 – 89.8%
	3 – 5 months:	1.6 – 42.2%
	6 – 8 months:	0.0 – 16.7%
	9 – 12 months:	0.0 – 10.5%
	13 – 17 months:	0.0 – 7.9%
	18 – 23 months:	0.0 – 6.3%
Variant 1	All ages:	0.0%
Variant 2	All ages:	0.0%
Variant 3	All ages:	0.0%

Critical Values:

N/A

Limitations:

This test is not intended for diagnostic purposes. See [Test Indications](#).

Peaks present in zones Z9, Z7, Z6, Z5, Z3, and Z2 – recently labeled the Z(A), Z(F), Z(D), Z(E), Z(A2) and Z(C) zones, respectively – may not represent the hemoglobin fractions the zones are named after as other variants can migrate to these positions, including the F, A and A2 positions. See the reference lab catalog for more information.

Methodology:

Capillary electrophoresis

References:

[Mayo Clinic Laboratories](#) June 2024

Updates:

6/11/2024: Changed test indications to clarify that this is ordered only by lab based on patient age. Patients ≥ 24 months of age will have the testing performed in-house; lab staff will reorder for the sendout if appropriate. Added specimen stability. Modified collection volume. Omitted rejection due to hemolysis. Omitted reference ranges for patients ≥ 24 months. Changed test performance days of the week.