MAYO CLINIC LABORATORIES

Test Definition: RTIC

Reticulocytes, B

Overview

Useful For
Assessing erythropoietic bone marrow activity in anemia and other hematologic conditions

Method Name
Flow Cytometry

NY State Available
Yes

Specimen

Specimen Type
Whole Blood EDTA

Necessary Information
Specimen must arrive within 48 hours of draw.

Specimen Required
Container/Tube: Lavender top (EDTA)

Specimen Volume: 3 mL

Forms
If not ordering electronically, complete, print, and send a Benign Hematology Test Request Form (T755) with the specimen.

Reject Due To

Gross hemolysis	Reject
Other	Clotted

Specimen Minimum Volume
1.5 mL

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Whole Blood EDTA	Refrigerated (preferred)		
	Ambient		

Clinical & Interpretive

Clinical Information

Reticulocytes are immature erythrocytes (RBC) that have been released into the peripheral blood from the bone marrow after extrusion of their nucleus. The reticulocyte contains residual polyribosomes used in the formation of hemoglobin in the developing erythrocyte.

Reference Values

% RETICULOCYTES

1-3 days: 3.47-5.40%

4 days-4 weeks: 1.06-2.37%

5 weeks-7 weeks: 2.12-3.47%

8 weeks-5 months: 1.55-2.70%

6 months-23 months: 0.99-1.82%

24 months-5 years: 0.82-1.45%

6-11 years: 0.98-1.94%

12-17 years: 0.90-1.49%

Adults: 0.60-2.71%

ABSOLUTE RETICULOCYTES

1-3 days: 147.5-216.4 x 10(9)/L

4 days-4 weeks: 51.3-110.4 x 10(9)/L

5 weeks-7 weeks: 51.8-77.9 x 10(9)/L

8 weeks-5 months: 48.2-88.2 x 10(9)/L

6 months-23 months: 43.5-111.1 x 10(9)/L

24 months-5 years: 36.4-68.0 x 10(9)/L

6-11 years: 42.4-70.2 x 10(9)/L

12-17 years: 41.6-65.1 x 10(9)/L

Adults: 30.4-110.9 x 10(9)/L

Interpretation

The reticulocyte count is a measure of the number of RBCs delivered by the bone marrow. It is elevated with active erythropoiesis such as regeneration, and is decreased in hypoplastic or deficiency conditions such as vitamin B12 deficiency.

Cautions

Reticulocyte counts must be carefully correlated with other clinical and laboratory findings.

Clotted specimens yield unreliable results and are unacceptable for analysis.

Clinical Reference

1. Adeli K, Raizman J, Chen Y, et al: Complex biological profile of hematologic markers across pediatric, adult, and geriatric ages: establishment of robust pediatric and adult reference intervals on the basis of the Canadian Health Measures Survey. Clin Chem 2015 Aug;61(8):1075-1086

2. CLSI. Defining, Establishing, and Verifying Reference Intervals in the Clinical Laboratory; Approved Guideline, Third Edition. CLSI document EP28-A3c. Wayne, PA, Clinical and Laboratory Standards Institute, 2008

3. Soldin J, Brugnara C, Wong EC: Pediatric Reference Intervals. Fifth edition. AACC Press. Washington DC 2005. ISBN 1-594250-32-4

4. Clinical Hematology: Principles, procedures, correlations. Second edition. Edited by CA Lotspeich-Steininger, EA Stiene-Martin, JA Koepke. Philadelphia, Lippincott-Raven, 1998, pp 114-117

Performance

Method Description

The Sysmex XN 9000 reticulocyte analyzer is a flow cytometer that uses an argon laser as the light source. Whole blood specimens are stained with polymethine fluorescent dye and passed through the laser beam in a sheath flow cell. Each blood cell causes a forward light scatter that depends on cell size. This measurement permits a separation of the various

blood cell types so that only erythrocytes are included in the cell count. Erythrocytes containing the protein reticulin (ie, reticulocytes) are stained by the dye in the laser beam. The right-angle fluorescence is measured to count these stained cells. The instrument counts 30,000 erythrocytes in each specimen. Because a known aliquot is counted, an actual RBC per unit volume is performed and an absolute reticulocyte count is obtained.(Instruction manual: Automated Hematology Analyzer XN series [XN-9000], North American edition, Code No. CJ410539. November 2015)

PDF Report
No

Specimen Retention Time
3 days

Performing Laboratory Location
Rochester

Fees & Codes

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
85045

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
RTIC	Reticulocytes, B	50262-5

Result ID	Reporting Name	LOINC®
PRTIC	Reticulocytes, B	17849-1
ARTIC	Absolute Reticulocyte	60474-4