
Lab Dept: Chemistry

Test Name: PYRUVATE KINASE, RBC

General Information

Lab Order Codes: PYKI

Synonyms: Pyruvate Kinase, Erythrocytes

CPT Codes: 84220 – Pyruvate kinase

Test Includes: Pyruvate kinase RBC level reported in U/g Hb.

Logistics

Test Indications: Useful for the workup of cases of nonspherocytic hemolytic anemia, for a family workup to determine inheritance pattern (pyruvate kinase deficiency is autosomal recessive), and for genetic counseling.

Lab Testing Sections: Chemistry - Sendouts

Referred to: Mayo Medical Laboratories (MML Test: PK)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 1 - 4 days, test set up Monday - Saturday

Special Instructions: N/A

Specimen

Specimen Type: Whole blood

Container: Lavender (EDTA) top tube
Alternate tube: Yellow top (ACD- Solution B) tube

Draw Volume: 6 mL (Minimum: 1 mL) blood

Processed Volume: Same as Draw Volume

Collection: Routine venipuncture

Special Processing:	Lab Staff: Do Not centrifuge. Send whole blood refrigerated in original collection container. Do Not transfer blood to other containers. Store and ship at refrigerated temperatures. Forward promptly.
Patient Preparation:	None
Sample Rejection:	Specimen cannot be frozen; mislabeled or unlabeled specimens; gross hemolysis

Interpretive

Reference Range: ≥12 months: 6.7 – 14.3 U/g Hb

Reference values have not been established for patients <12 months of age.

Interpretation: Most hemolytic anemias due to pyruvate kinase (PK) deficiency are associated with activity levels less than 40% of mean normal. However, some patients with clinically significant hemolysis can have normal or only mildly decreased PK enzyme activity, which paradoxically may occur in individuals with most severe symptoms. Carriers (heterozygotes) may show mildly decreased activity and are hematologically normal.

Elevated PK concentrations can be found in those patients with younger erythrocyte population. This may be due to the patient being a newborn or young red cells are being produced in response to the anemia (reticulocytosis).

Critical Values: N/A

Limitations: Because leukocytes also contain pyruvate kinase that is not diminished in hereditary erythrocytic pyruvate kinase deficiency, freeing the blood of white blood cells is always critical to this test.

Methodology: Kinetic Spectrophotometry (KS)

References: [Mayo Medical Laboratories](#) March 2017

Updates: 8/31/2010: Units and reference range update.
3/7/2017: Collection tube update.