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**Lab Dept:** Chemistry

**Test Name:** PYRUVATE KINASE, RBC

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***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.

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***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

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***Specimen***

**Specimen Type:** Whole blood

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

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

**Processed Volume:** Same as Draw Volume

**Collection:** Routine blood collection

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

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### ***Interpretive***

<b>Reference Range:</b>	<p>≥12 months: 6.7 – 14.3 U/g Hb</p> <p>Reference values have not been established for patients &lt;12 months of age.</p> <p>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.</p> <p>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).</p>
<b>Critical Values:</b>	N/A
<b>Limitations:</b>	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.
<b>Methodology:</b>	Kinetic Spectrophotometry (KS)
<b>References:</b>	<a href="#">Mayo Clinic Laboratories</a> October 2020
<b>Updates:</b>	8/31/2010: Units and reference range update. 3/7/2017: Collection tube update. 10/12/2020: Collection tube update.