



# TECHNICAL NOTICE

## SOUTH BEND MEDICAL FOUNDATION

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### Glucose-6-phosphate dehydrogenase (G6PD) in whole blood

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**Effective Date:** March 1, 2011

**Performing Department:** Automated Lab

**Clinical Significance:** Glucose-6-phosphate dehydrogenase (G6PD) deficiency is the most common metabolic disorder of red blood cells with over 200 million people affected worldwide. The disorder is manifested usually in tropical and subtropical areas. The affected gene is present on the X chromosome and affected individuals include males and homozygous females. The enzyme deficiency causes hemolytic anemia in sporadic episodes associated with patient exposure to certain drugs (including anti-malarial drugs), fava beans, and infections (including bacterial pneumonia and viral hepatitis). During asymptomatic intervals the patients have no symptoms and no anemia but their RBC survival may be slightly decreased. Due to a wide spectrum of variants in this enzyme, healthcare professionals should always bear in mind the consequences of administering drugs to patients with G6PD deficiency. The second cause, ingestion of fava beans which is mostly common during the spring in Southeast Asia, Africa and the Mediterranean. Fresh, frozen and dried forms of these beans can cause a condition known as favism. In addition to anemia, G6PD deficient individuals can expect several other clinical manifestations of their condition, such as neonatal jaundice, abdominal and/ or back pain, dizziness, headache, dyspnea and palpitations.

**Method:** G6PD is measured by a spectrophotometric method. Hemoglobin is also measured in the same whole blood specimen and the final result is reported as G6PD per gram of hemoglobin.

**Use:** This test is primarily used to evaluate the presence of G6PD deficiency. In addition, the test can be used to evaluate the cause of drug-induced hemolysis or hemolysis secondary to various infections.

**Reference Range:** 6.5 to 17.3 U G6PD/g Hb

**Specimen Requirements and Collection:**

**Specimen:** 3mL EDTA whole blood

**Minimum Specimen:** 1.5mL

**Type of Container:** Lavender top (EDTA)

**Storage:** 4° C

**Transport:** • 4° C

**Causes for Rejection:** Frozen samples

**Stability:** 5 days at 2-8° C

**Testing Schedule:** Monday and Thursday; received by 0800, result by 1700

**Order:** Glucose-6-phosphate dehydrogenase (G6PD) ..... Test #: 29104 ..... CPT: • 82955

For additional information contact Deborah H. Sun, Ph.D. (dsun@sbfm.org) or Brett Colter, Director of Automated and Manual Lab (bcolter@sbfm.org) or South Bend Medical Foundation, (574) 234-4176 or (800) 544-0925.

**SOUTH BEND MEDICAL FOUNDATION**

530 N. Lafayette Boulevard • South Bend, IN 46601 • (574) 234-4176

Elkhart (574) 293-8441 • (800) 544-0925

Robert J. Tomec, M.D. • *Medical Director*