

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human G6PD in direct ELISA.
Source	Monoclonal Mouse IgG _{2A} Clone # 1067503
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	E. coli-derived human G6PD Ala2-Leu515 Accession # P11413
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide
*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.	

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

Glucose-6-phosphate dehydrogenase (G6PD) converts D-glucose 6-phosphate (G6P) into 6-phosphoglucono-δ-lactone and generate co-enzyme nicotinamide adenine dinucleotide phosphate (NADPH) (1). G6PD is the rate-limiting enzyme of the pentose phosphate pathway that supplies reducing energy to cells by maintaining the level of NADPH, which in turn maintains the level of glutathione in these cells that helps protect the red blood cells against oxidative damage from compounds like hydrogen peroxide (1, 2). More importantly, NADPH is used for biosynthesis of fatty acids or isoprenoids. G6PD is generally found as a dimer of two identical monomers (3). Depending on conditions, such as pH, these dimers can themselves dimerize to form tetramers. Each monomer in the complex has a substrate binding site that binds to G6P, and a catalytic coenzyme binding site that binds to NADP⁺/NADPH using the Rossman fold (4). Its activity is stimulated by the substrate G6P and NADP⁺. Clinically, genetic deficiency of G6PD predisposes a person to non-immune hemolytic anemia (5). G6PD is remarkable for its genetic diversity. Many variants of G6PD have been described with wide-ranging levels of enzyme activity and associated clinical symptoms. G6PD is frequently used as a coupling enzyme for measuring the enzymatic activity of glucose kinase (6).

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