

# H6PD (E-15): sc-54898

## BACKGROUND

H6PD (hexose-6-phosphate dehydrogenase, GDH/6PGL endoplasmic bifunctional protein) is a 789 amino acid protein encoded by the human gene H6PD. The N-terminal section of H6PD belongs to the glucose-6-phosphate dehydrogenase family, while the C-terminal section belongs to the glucosamine/galactosamine-6-phosphate isomerase family, 6-phosphogluconolactonase subfamily. H6PD is responsible primarily for the oxidation of glucose-6-phosphate and glucose. It also oxidizes other hexose-6-phosphates. H6PD catalyzes the conversion of glucose 6-phosphate to 6-phosphogluconolactone within the lumen of the endoplasmic reticulum, thereby generating reduced nicotinamide adenine dinucleotide phosphate. Reduced nicotinamide adenine dinucleotide phosphate is a necessary cofactor for the reductase activity of 11 $\beta$ -hydroxysteroid dehydrogenase type 1, which converts hormonally inactive cortisone to active cortisol (in rodents, 11-dehydrocorticosterone to corticosterone).

## REFERENCES

1. Draper, N., et al. 2003. Mutations in the genes encoding 11 $\beta$ -hydroxysteroid dehydrogenase type 1 and hexose-6-phosphate dehydrogenase interact to cause cortisone reductase deficiency. *Nat. Genet.* 34: 434-439.
2. San Millán, J.L., et al. 2005. A study of the hexose-6-phosphate dehydrogenase gene R453Q and 11 $\beta$ -hydroxy-steroid dehydrogenase type 1 gene 83557insA polymorphisms in the polycystic ovary syndrome. *J. Clin. Endocrinol. Metab.* 90: 4157-4162.
3. White, P.C. 2005. Genotypes at 11 $\beta$ -hydroxysteroid dehydrogenase type 1B1 and hexose-6-phosphate dehydrogenase loci are not risk factors for apparent cortisone reductase deficiency in a large population-based sample. *J. Clin. Endocrinol. Metab.* 90: 5880-5883.
4. Lavery, G.G., et al. 2006. Hexose-6-phosphate dehydrogenase knock-out mice lack 11 $\beta$ -hydroxysteroid dehydrogenase type 1-mediated glucocorticoid generation. *J. Biol. Chem.* 281: 6546-6551.
5. Crooke, A., et al. 2006. Transient silencing of *Plasmodium falciparum* bifunctional glucose-6-phosphate dehydrogenase-6-phosphogluconolactonase. *FEBS J.* 273: 1537-1546.

## CHROMOSOMAL LOCATION

Genetic locus: H6pd (mouse) mapping to 4 E2.

## SOURCE

H6PD (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of H6PD of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-54898 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

H6PD (E-15) is recommended for detection of H6PD of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

H6PD (E-15) is also recommended for detection of H6PD in additional species, including equine and canine.

Suitable for use as control antibody for H6PD siRNA (m): sc-62432, H6PD shRNA Plasmid (m): sc-62432-SH and H6PD shRNA (m) Lentiviral Particles: sc-62432-V.

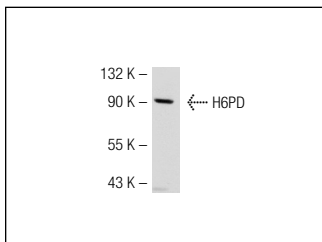
Molecular Weight of H6PD: 89 kDa.

Positive Controls: Mouse liver extract: sc-2256.

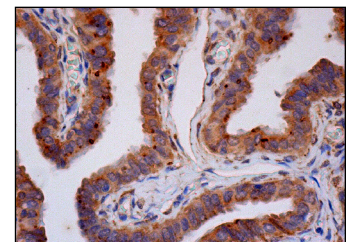
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



H6PD (E-15): sc-54898. Western blot analysis of H6PD expression in mouse liver whole cell lysate.



H6PD (E-15): sc-54898. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing cytoplasmic staining of glandular cells.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.