

# Haptoglobin $\alpha$ (E-9): sc-374208

## BACKGROUND

Haptoglobin (Hp) is a blood plasma protein that functions to bind free hemoglobin that has been released from erythrocytes, thereby inhibiting its oxidative activity. During this process, Haptoglobin sequesters the iron within hemoglobin, preventing iron-utilizing bacteria from benefitting from hemolysis. This function suggests that Haptoglobin concentrations may increase in response to inflammation. The resulting Haptoglobin-hemoglobin complex is then removed by the reticulo-endothelial system. Due to cleavage of a common precursor protein during protein synthesis, Haptoglobin consists of two  $\alpha$  and two  $\beta$  chains, connected by disulfide bridges. In human, Haptoglobin exists in two allelic forms designated Haptoglobin 1 (Hp1) and Haptoglobin 2 (Hp2), where Hp2 is the result of a partial Hp1 gene duplication. There are three known phenotypes of human Haptoglobin: Hp1-1, Hp2-1 and Hp2-2, which may be associated with diabetes and cardiovascular disease pathology and a susceptibility to Parkinson's and Crohn's disease. Haptoglobin levels are useful in diagnosing hemolytic anemia, the abnormal breakdown of red blood cells. Haptoglobin is expressed in mammalian hepatocytes as well as other tissues such as skin, lung and kidney.

## REFERENCES

- Suleiman, M., et al. 2005. Haptoglobin polymorphism predicts 30-day mortality and heart failure in patients with diabetes and acute myocardial infarction. *Diabetes* 54: 2802-2806.
- Na, N., et al. 2005. Serum free hemoglobin concentrations in healthy individuals are related to Haptoglobin type. *Clin. Chem.* 51: 1754-1755.
- Yerbury, J.J., et al. 2005. The acute phase protein Haptoglobin is a mammalian extracellular chaperone with an action similar to clusterin. *Biochemistry* 44: 10914-10925.
- Mihailovic, M., et al. 2005. Acute-phase related binding ability of p53 for the hormone response element of the Haptoglobin gene in adult rats. *Cell Biol. Int.* 29: 968-970.
- Ship, N.J., et al. 2005. Binding of acellular, native and cross-linked human hemoglobins to Haptoglobin: enhanced distribution and clearance in the rat. *Am. J. Physiol. Gastrointest. Liver Physiol.* 288: G1301-G1309.
- Sharpe-Timms, K.L., et al. 2005. Haptoglobin expression by shed endometrial tissue fragments found in peritoneal fluid. *Fertil. Steril.* 84: 22-30.
- Dinic, S., et al. 2005. C/EBP  $\alpha$  and C/EBP  $\beta$  regulate Haptoglobin gene expression during rat liver development and the acute-phase response. *Mol. Biol. Rep.* 32: 141-147.

## CHROMOSOMAL LOCATION

Genetic locus: HP/HPR (human) mapping to 16q22.2.

## SOURCE

Haptoglobin  $\alpha$  (E-9) is a mouse monoclonal antibody raised against amino acids 21-150 mapping near the N-terminus of Haptoglobin of human origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Haptoglobin  $\alpha$  (E-9) is recommended for detection of Haptoglobin  $\alpha$  and Haptoglobin-related protein of human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

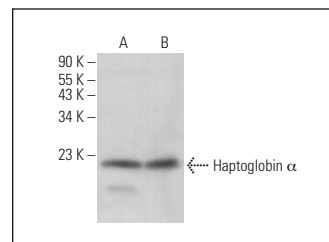
Molecular Weight of Haptoglobin  $\alpha$  chains: 9-18 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



Haptoglobin  $\alpha$  (E-9): sc-374208. Western blot analysis of Haptoglobin  $\alpha$  expression in Hep G2 (A) and HeLa (B) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Zhao, K.W., et al. 2015. Fibroblastic synoviocytes secrete plasma proteins via  $\alpha_2$ -macroglobulins serving as intracellular and extracellular chaperones. *J. Cell. Biochem.* 116: 2563-2576.
- Berntson, L., et al. 2022. Haptoglobin in juvenile idiopathic arthritis. *Pediatr. Rheumatol. Online J.* 20: 117.

## STORAGE

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