

Glyoxalase II (F-9): sc-166781

BACKGROUND

The glyoxal pathway plays a role in the detoxification of glucose degradation products (GDP). Glyoxalase I and Glyoxalase II (also designated hydroxyacyl glutathione hydrolase or HAGH) are members of the Glyoxalase family. The Glyoxalase II enzyme is a thiolesterase that catalyzes the hydrolysis of S-D-lactoyl-glutathione to form reduced glutathione and D-lactic acid. It exists only as a monomer and binds two zinc ions per subunit. Glyoxalase II contains 260 amino acids. It is detected in the mitochondria and cytosol of mammals. Both Glyoxalase I and Glyoxalase II are detected at a higher activity level in breast cancer tissues than with matched unaffected tissues. This suggests that Glyoxalase inhibitor drugs may be effective in the treatment of cancer.

REFERENCES

- Ridderström, M., et al. 1996. Molecular cloning, heterologous expression, and characterization of human Glyoxalase II. *J. Biol. Chem.* 271: 319-323.
- Cameron, A.D., et al. 1999. Crystal structure of human Glyoxalase II and its complex with a glutathione thiolester substrate analogue. *Structure* 7: 1067-1078.
- Rulli, A., et al. 2001. Expression of Glyoxalase I and II in normal and breast cancer tissues. *Breast Cancer Res. Treat.* 66: 67-72.
- Cordell, P.A., et al. 2004. The human hydroxyacylglutathione hydrolase (HAGH) gene encodes both cytosolic and mitochondrial forms of Glyoxalase II. *J. Biol. Chem.* 279: 28653-28661.

CHROMOSOMAL LOCATION

Genetic locus: HAGH (human) mapping to 16p13.3; Hagh (mouse) mapping to 17 A3.3.

SOURCE

Glyoxalase II (F-9) is a mouse monoclonal antibody raised against amino acids 61-110 mapping within an internal region of Glyoxalase II of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Glyoxalase II (F-9) is available conjugated to agarose (sc-166781 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166781 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166781 PE), fluorescein (sc-166781 FITC), Alexa Fluor® 488 (sc-166781 AF488), Alexa Fluor® 546 (sc-166781 AF546), Alexa Fluor® 594 (sc-166781 AF594) or Alexa Fluor® 647 (sc-166781 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166781 AF680) or Alexa Fluor® 790 (sc-166781 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

Glyoxalase II (F-9) is recommended for detection of Glyoxalase II of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

Suitable for use as control antibody for Glyoxalase II siRNA (h): sc-60705, Glyoxalase II siRNA (m): sc-60706, Glyoxalase II shRNA Plasmid (h): sc-60705-SH, Glyoxalase II shRNA Plasmid (m): sc-60706-SH, Glyoxalase II shRNA (h) Lentiviral Particles: sc-60705-V and Glyoxalase II shRNA (m) Lentiviral Particles: sc-60706-V.

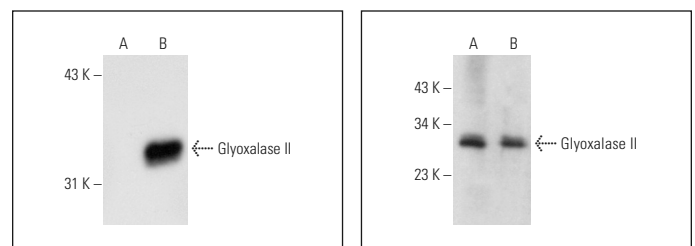
Molecular Weight of Glyoxalase II: 29 kDa.

Positive Controls: rat liver extract: sc-2395, mouse liver extract: sc-2256 or Glyoxalase II (h3): 293T Lysate: sc-170335.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



Glyoxalase II (F-9): sc-166781. Western blot analysis of Glyoxalase II expression in non-transfected: sc-117752 (A) and human Glyoxalase II transfected: sc-170335 (B) 293T whole cell lysates.

Glyoxalase II (F-9): sc-166781. Western blot analysis of Glyoxalase II expression in mouse liver (A) and rat liver (B) tissue extracts.

SELECT PRODUCT CITATIONS

- Frandsen, J., et al. 2020. Neural glyoxalase pathway enhancement by morin derivatives in an Alzheimer's disease model. *ACS Chem. Neurosci.* 11: 356-366.

RESEARCH USE

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