# Glyoxalase II (h): 293T Lysate: sc-159999



The Power to Question

#### **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., Saccucci, F., Hellman, U., Bergman, T., Principato, G. and Mannervik, B. 1996. Molecular cloning, heterologous expression, and characterization of human Glyoxalase II. J. Biol. Chem. 271: 319-323.
- Cameron, A.D., Ridderström, M., Olin, B. and Mannervik, B. 1999. Crystal structure of human Glyoxalase II and its complex with a glutathione thiolester substrate analogue. Structure 7: 1067-1078.
- Rulli, A., Carli, L., Romani, R., Baroni, T., Giovannini, E., Rosi, G. and Talesa, V. 2001. Expression of Glyoxalase I and II in normal and breast cancer tissues. Breast Cancer Res. Treat. 66: 67-72.
- Cordell, P.A., Futers, T.S., Grant, P.J. and Pease, R.J. 2004. The human hydroxyacylglutathione hydrolase (HAGH) gene encodes both cytosolic and mitochondrial forms of Glyoxalase II. J. Biol. Chem. 279: 28653-28661.
- Krömer, S.A., Kessler, M.S., Milfay, D., Birg, I.N., Bunck, M., Czibere, L., Panhuysen, M., Pütz, B., Deussing, J.M., Holsboer, F., Landgraf, R. and Turck, C.W. 2005. Identification of Glyoxalase I as a protein marker in a mouse model of extremes in trait anxiety. J. Neurosci. 25: 4375-4384.
- Yadav, S.K., Singla-Pareek, S.L., Ray, M., Reddy, M.K. and Sopory, S.K. 2005. Methylglyoxal levels in plants under salinity stress are dependent on Glyoxalase I and glutathione. Biochem. Biophys. Res. Commun. 337: 61-67.
- 7. Ariza, A., Vickers, T.J., Greig, N., Fairlamb, A.H. and Bond, C.S. 2006. Crystallization and preliminary X-ray analysis of *Leishmania major* Glyoxalase I. Acta Crystallograph. Sect. F Struct. Biol. Cryst. Commun. 61: 769-772.
- 8. Ariza, A., Vickers, T.J., Greig, N., Armour, K.A., Dixon, M.J., Eggleston, I.M., Fairlamb, A.H. and Bond, C.S. 2006. Specificity of the trypanothione-dependent *Leishmania major* Glyoxalase I: structure and biochemical comparison with the human enzyme. Mol. Microbiol. 59: 1239-1248.

#### **CHROMOSOMAL LOCATION**

Genetic locus: HAGH (human) mapping to 16p13.3.

## **PRODUCT**

Glyoxalase II (h): 293T Lysate represents a lysate of human Glyoxalase II transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ I SDS-PAGE buffer.

#### **APPLICATIONS**

Glyoxalase II (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Glyoxalase II antibodies. Recommended use:  $10\text{-}20~\mu\text{I}$  per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

# **STORAGE**

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

#### **RESEARCH USE**

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

## **PROTOCOLS**

See our web site at www.scbt.com for detailed protocols and support products.

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