



Glyoxalase II siRNA (m): sc-60706

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

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2. 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.
3. Rulli, A., et al. 2001. Expression of Glyoxalase I and II in normal and breast cancer tissues. *Breast Cancer Res. Treat.* 66: 67-72.
4. 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.
5. Krömer, S.A., et al. 2005. Identification of Glyoxalase I as a protein marker in a mouse model of extremes in trait anxiety. *J. Neurosci.* 25: 4375-4384.
6. Yadav, S.K., et al. 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., et al. 2006. Crystallization and preliminary X-ray analysis of *Leishmania major* Glyoxalase I. *Acta Crystallograph. Sect. F Struct. Biol. Cryst. Commun.* 61: 769-772.

CHROMOSOMAL LOCATION

Genetic locus: Hagh (mouse) mapping to 17 A3.3.

PRODUCT

Glyoxalase II siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Glyoxalase II shRNA Plasmid (m): sc-60706-SH and Glyoxalase II shRNA (m) Lentiviral Particles: sc-60706-V as alternate gene silencing products.

For independent verification of Glyoxalase II (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60706A, sc-60706B and sc-60706C.

RESEARCH USE

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Glyoxalase II siRNA (m) is recommended for the inhibition of Glyoxalase II expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

Glyoxalase II (F-9): sc-166781 is recommended as a control antibody for monitoring of Glyoxalase II gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Glyoxalase II gene expression knockdown using RT-PCR Primer: Glyoxalase II (m)-PR: sc-60706-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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