Store at -20°C

#14184

SignalSilence® Glut1 siRNA I

www.cellsignal.com

Support: 877-678-TECH (8324)
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orders@cellsignal.com

Entrez-Gene ID #6513
UniProt ID #P11166

New 01/15

For Research Use Only. Not For Use In Diagnostic Procedures.

Species Cross-Reactivity: H

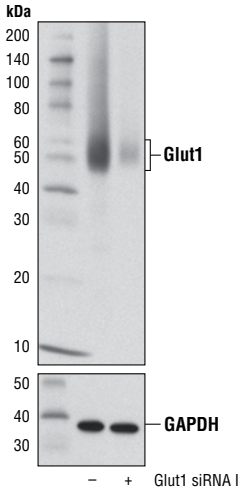
Description: SignalSilence® Glut1 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit Glut1 expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence® siRNA products from CST are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

Background: Glucose transporter 1 (Glut1, SLC2A1) is a widely expressed transport protein that displays a broad range of substrate specificity in transporting a number of different aldose sugars as well as an oxidized form of vitamin C into cells (1,2). Glut1 is responsible for the basal-level uptake of glucose from the blood through facilitated diffusion (2). Research studies show that Glut1 and the transcription factor HIF-1α mediate the regulation of glycolysis by O-GlcNAcylation in cancer cells (3). Additional studies demonstrate that Glut1 is required for CD4 T cell activation and is critical for the expansion and survival of T effector (Teff) cells (4). Mutations in the corresponding *SLC2A1* gene cause GLUT1 deficiency syndromes (GLUT1DS1, GLUT1DS2), a pair of neurologic disorders characterized by delayed development, seizures, spasticity, paroxysmal exercise-induced dyskinesia, and acquired microcephaly (5,6). Two other neurologic disorders - dystonia-9 (DYT9) and susceptibility to idiopathic generalized epilepsy 12 (EIG12) - are also caused by mutations in the *SLC2A1* gene (7,8).

Directions for Use: CST recommends transfection with 100 nM SignalSilence® Glut1 siRNA I 48 to 72 hours prior to cell lysis. For transfection procedure, follow protocol provided by the transfection reagent manufacturer. Please feel free to contact CST with any questions on use.

Each vial contains the equivalent of 100 transfections, which corresponds to a final siRNA concentration of 100 nM per transfection in a 24-well plate with a total volume of 300 µl per well.

Quality Control: Oligonucleotide synthesis is monitored base by base through trityl analysis to ensure appropriate coupling efficiency. The oligo is subsequently purified by affinity-solid phase extraction. The annealed RNA duplex is further analyzed by mass spectrometry to verify the exact composition of the duplex. Each lot is compared to the previous lot by mass spectrometry to ensure maximum lot-to-lot consistency.



Western blot analysis of extracts from Hep G2 cells transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-) or SignalSilence® Glut1 siRNA I (+), using Glut1 (D3J3A) Rabbit mAb #12939 (upper) or GAPDH (D16H11) XP® Rabbit mAb #5174 (lower). The Glut1 (D3J3A) Rabbit mAb confirms silencing of Glut1 expression, while the GAPDH (D16H11) XP® Rabbit mAb is used as a loading control.

Storage: Glut1 siRNA I is supplied in RNAse-free water. *Aliquot and store at -20°C.*

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com

Background References:

(1) Ferrer, C.M. et al. (2014) *Mol Cell* 54, 820-31.
(2) Deng, D. et al. (2014) *Nature* 510, 121-5.
(3) Agus, D.B. et al. (1997) *J Clin Invest* 100, 2842-8.
(4) Macintyre, A.N. et al. (2014) *Cell Metab* 20, 61-72.
(5) Wang, D. et al. (2005) *Ann Neurol* 57, 111-8.
(6) Schneider, S.A. et al. (2009) *Mov Disord* 24, 1684-8.
(7) Weber, Y.G. et al. (2011) *Neurology* 77, 959-64.
(8) Suls, A. et al. (2009) *Ann Neurol* 66, 415-9.

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Cell Signaling TECHNOLOGY®

Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.