

SLC2A4RG (K-41): sc-130464

BACKGROUND

SLC2A4RG (SLC2A4 regulator), also known as Huntington disease gene regulatory region-binding protein 1 and Glut4 enhancer factor, is a 387 amino acid transcription factor that is involved in Glut4 and HD gene transactivation. In cooperation with MEF-2, SLC2A4RG binds to domain I of the Glut4 promoter to regulate transcription of Glut4. Interestingly, after a single bout of exercise, there is an increase in DNA binding activities of both SLC2A4RG and MEF-2, which leads to an increase in transcription of Glut4. This is significant because overexpression of Glut4 in skeletal muscle has shown to improve glucose homeostasis and enhance Insulin action. Also, by recognizing the 5'-GCCGGCG-3' DNA sequence motif of the Huntington's disease (HD) promoter, SLC2A4RG regulates transcription of the HD gene. Ubiquitously expressed with highest expression in skeletal muscle, liver, kidney, heart and pancreas, SLC2A4RG shuttles between the cytoplasm and nucleus and contains a C₂H₂-type zinc finger that is involved in DNA binding. There are two isoforms of SLC2A4RG that are produced as a result of alternative splicing.

REFERENCES

1. Thai, M.V., et al. 1998. Myocyte enhancer factor 2 (MEF2)-binding site is required for Glut4 gene expression in transgenic mice. Regulation of MEF2 DNA binding activity in Insulin-deficient diabetes. *J. Biol. Chem.* 273: 14285-14292.
2. Oshel, K.M., et al. 2000. Identification of a 30-base pair regulatory element and novel DNA binding protein that regulates the human Glut4 promoter in transgenic mice. *J. Biol. Chem.* 275: 23666-23673.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609493. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Knight, J.B., et al. 2003. Regulation of the human GLUT4 gene promoter: interaction between a transcriptional activator and myocyte enhancer factor 2A. *Proc. Natl. Acad. Sci. USA* 100: 14725-14730.
5. Tanaka, K., et al. 2004. Novel nuclear shuttle proteins, HDBP1 and HDBP2, bind to neuronal cell-specific *cis*-regulatory element in the promoter for the human Huntington's disease gene. *J. Biol. Chem.* 279: 7275-7286.

CHROMOSOMAL LOCATION

Genetic locus: SLC2A4RG (human) mapping to 20q13.33; Slc2a4 (mouse) mapping to 11 B3.

SOURCE

SLC2A4RG (K-41) is a mouse monoclonal antibody raised against recombinant SLC2A4RG of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

SLC2A4RG (K-41) is recommended for detection of SLC2A4RG of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for SLC2A4RG siRNA (h): sc-76506, SLC2A4RG shRNA Plasmid (h): sc-76506-SH and SLC2A4RG shRNA (h) Lentiviral Particles: sc-76506-V.

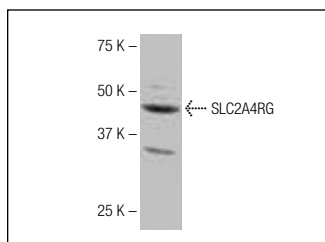
Molecular Weight of SLC2A4RG isoforms: 41/30 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

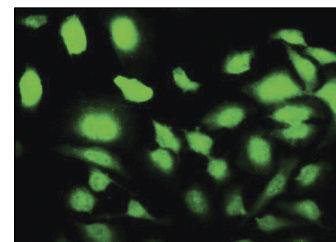
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-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, TBS Blotto A Blocking Reagent: sc-2333 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



SLC2A4RG (K-41): sc-130464. Western blot analysis of SLC2A4RG expression in HeLa whole cell lysate.



SLC2A4RG (K-41): sc-130464. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

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.