

CUTA siRNA (m): sc-105251

BACKGROUND

CUTA, also known as ACHAP (acetylcholinesterase-associated protein), is the 179 amino acid mammalian homolog of the cutA *E. coli* protein and is ubiquitously expressed, particularly in brain tissue. Existing as multiple alternatively spliced isoforms, CUTA functions as a homotrimer that is thought to act as a component of an acetylcholinesterase (AChE)-attached complex, suggesting an involvement in AChE regulation. The gene encoding CUTA maps to human chromosome 6, which contains 170 million base pairs and comprises nearly 6% of the human genome. Deletion of a portion of the q arm of chromosome 6 is associated with early onset intestinal cancer, suggesting the presence of a cancer susceptibility locus. Additionally, Porphyria cutanea tarda, Parkinson's disease, Stickler syndrome and a susceptibility to bipolar disorder are all associated with genes that map to chromosome 6.

REFERENCES

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2. Navaratnam, D.S., et al. 2000. Hydrophobic protein that copurifies with human brain acetylcholinesterase: amino acid sequence, genomic organization, and chromosomal localization. *J. Neurochem.* 74: 2146-2153.
3. Arnesano, F., et al. 2003. The evolutionarily conserved trimeric structure of CutA1 proteins suggests a role in signal transduction. *J. Biol. Chem.* 278: 45999-46006.
4. Yang, J., et al. 2008. Overexpression of human CUTA isoform2 enhances the cytotoxicity of copper to HeLa cells. *Acta Biochim. Pol.* 55: 411-415.
5. Bagautdinov, B., et al. 2008. Structure of putative CutA1 from *Homo sapiens* determined at 2.05 Å resolution. *Acta Crystallogr. Sect. F Struct. Biol. Cryst. Commun.* 64: 351-357.
6. Liang, D., et al. 2009. Protein CutA undergoes an unusual transfer into the secretory pathway and affects the folding, oligomerization, and secretion of acetylcholinesterase. *J. Biol. Chem.* 284: 5195-5207.
7. Yang, J., et al. 2009. Characterization of the human CUTA isoform2 present in the stably transfected HeLa cells. *Mol. Biol. Rep.* 36: 63-69.

CHROMOSOMAL LOCATION

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

PRODUCT

CUTA 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 CUTA shRNA Plasmid (m): sc-105251-SH and CUTA shRNA (m) Lentiviral Particles: sc-105251-V as alternate gene silencing products.

For independent verification of CUTA (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-105251A, sc-105251B and sc-105251C.

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

CUTA siRNA (m) is recommended for the inhibition of CUTA 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

CUTA (H-8): sc-398827 is recommended as a control antibody for monitoring of CUTA 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 CUTA gene expression knockdown using RT-PCR Primer: CUTA (m)-PR: sc-105251-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.