SANTA CRUZ BIOTECHNOLOGY, INC.

AE3 siRNA (h): sc-72460

BACKGROUND

AE3 (anion exchanger 3), also known as SLC4A3 (solute carrier family 4, anion exchanger, member 3), SLC2C, neuronal band 3-like protein, cardiac/brain band 3-like protein or CAE3/BAE3, is a 1,232 amino acid multi-pass membrane protein. Encoded by a gene that maps to human chromosome 2q36, AE3 is primarily expressed in brain neurons, retina and heart, and exists as three alternatively spliced isoforms. AE3 exhibits significant similarity with both anion exchange and cytoskeletal-binding domains of band 3, an erythrocyte anion exchanger. AE3, like band 3, is capable of binding ankyrin. Expression of AE3 in COS cells results in chronic cytoplasmic acidification, and chloride- and bicarbonate-dependent changes in intracellular pH, consistent with anion exchanging. The C-terminal portion is necessary and sufficient for insertion into the plasma membrane and for anion exchange function. The N-terminal domain may be involved in regulating exchanger activity and organizing cytoskeleton structure in neurons.

REFERENCES

1. Kopito, R.R., et al. 1989. Regulation of intracellular pH by a neuronal homolog of the erythrocyte anion exchanger. Cell 59: 927-937.
2. Morgans, C.W., et al. 1993. Association of the brain anion exchanger, AE3, with the repeat domain of ankyrin. J. Cell Sci. 105: 1137-1142.
3. Yannoukakos, D., et al. 1994. Molecular cloning, expression, and chromosomal localization of two isoforms of the AE3 anion exchanger from human heart. Circ. Res. 75: 603-614.
4. Su, Y.R., et al. 1994. Molecular cloning and physical and genetic mapping of the human anion exchanger isoform 3 (SLC2C) gene to chromosome 2q36. Genomics 22: 605-609.
5. White, R.A., et al. 1994. Chromosomal location of the murine anion exchanger genes encoding AE2 and AE3. Mamm. Genome 5: 827-829.
6. Einum, D.D., et al. 1998. Genomic structure of human anion exchanger 3 and its potential role in hereditary neurological disease. Neurogenetics 1: 289-292.

CHROMOSOMAL LOCATION

Genetic locus: SLC4A3 (human) mapping to 2q35.

PRODUCT

AE3 siRNA (h) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see AE3 shRNA Plasmid (h): sc-72460-SH and AE3 shRNA (h) Lentiviral Particles: sc-72460-V as alternate gene silencing products.

For independent verification of AE3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72460A, sc-72460B and sc-72460C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

AE3 siRNA (h) is recommended for the inhibition of AE3 expression in human 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 µM in 66 µl. 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor AE3 gene expression knockdown using RT-PCR Primer: AE3 (h)-PR: sc-72460-PR (20 µl). 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.