

ERC2 siRNA (m): sc-77282

BACKGROUND

ERC2, also known as CAST, ELKSL or SPBC110, is a 957 amino acid localized to the cytoplasm, cell junction, synapse and synaptosome. ERC2 is believed to play a role in the organization of the cytomatrix at the nerve terminals active zone (CAZ), which regulates neurotransmitter release. ERC2 is also thought to recruit liprin α proteins to the CAZ. ERC2 forms a complex with UNC13A and Rim1 and interacts with ERC1, basonuclin, Liprin α 1, Liprin α 2 and Liprin α 3. ERC2 is expressed as two isoforms produced by alternative splicing.

REFERENCES

- Ohtsuka, T., Takao-Rikitsu, E., Inoue, E., Inoue, M., Takeuchi, M., Matsubara, K., Deguchi-Tawarada, M., Satoh, K., Morimoto, K., Nakanishi, H. and Takai, Y. 2002. CAST: a novel protein of the cytomatrix at the active zone of synapses that forms a ternary complex with Rim1 and Munc13-1. *J. Cell Biol.* 158: 577-590.
- Wang, Y., Liu, X., Biederer, T. and Südhof, T.C. 2002. A family of Rim-binding proteins regulated by alternative splicing: implications for the genesis of synaptic active zones. *Proc. Natl. Acad. Sci. USA* 99: 14464-14469.
- Ko, J., Na, M., Kim, S., Lee, J.R. and Kim, E. 2003. Interaction of the ERC family of Rim-binding proteins with the liprin α family of multidomain proteins. *J. Biol. Chem.* 278: 42377-42385.
- Deguchi-Tawarada, M., Inoue, E., Takao-Rikitsu, E., Inoue, M., Ohtsuka, T. and Takai, Y. 2004. CAST2: identification and characterization of a protein structurally related to the presynaptic cytomatrix protein CAST. *Genes Cells* 9: 15-23.
- Takao-Rikitsu, E., Mochida, S., Inoue, E., Deguchi-Tawarada, M., Inoue, M., Ohtsuka, T. and Takai, Y. 2004. Physical and functional interaction of the active zone proteins, CAST, Rim1, and bassoon, in neurotransmitter release. *J. Cell Biol.* 164: 301-311.
- tom Dieck, S., Altmann, W.D., Kessels, M.M., Qualmann, B., Regus, H., Brauner, D., Fejtová, A., Bracko, O., Gundelfinger, E.D. and Brandstätter, J.H. 2005. Molecular dissection of the photoreceptor ribbon synapse: physical interaction of bassoon and RIBEYE is essential for the assembly of the ribbon complex. *J. Cell Biol.* 168: 825-836.
- Ko, J., Yoon, C., Piccoli, G., Chung, H.S., Kim, K., Lee, J.R., Lee, H.W., Kim, H., Sala, C. and Kim, E. 2006. Organization of the presynaptic active zone by ERC2/CAST1-dependent clustering of the tandem PDZ protein syntenin-1. *J. Neurosci.* 26: 963-970.
- Kim, H.G., Higgins, A.W., Herrick, S.R., Kishikawa, S., Nicholson, L., Kutsche, K., Ligon, A.H., Harris, D.J., Macdonald, M.E., Bruns, G.A., Morton, C.C., Quade, B.J. and Gusella, J.F. 2007. Candidate loci for Zimmermann-Laband syndrome at 3p14.3. *Am. J. Med. Genet. A* 143A: 107-111.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: *Erc2* (mouse) mapping to 14 A3.

PRODUCT

ERC2 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 ERC2 shRNA Plasmid (m): sc-77282-SH and ERC2 shRNA (m) Lentiviral Particles: sc-77282-V as alternate gene silencing products.

For independent verification of ERC2 (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-77282A, sc-77282B and sc-77282C.

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

ERC2 siRNA (m) is recommended for the inhibition of ERC2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ERC2 gene expression knockdown using RT-PCR Primer: ERC2 (m)-PR: sc-77282-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.