

ELKS (E-1): sc-365715

BACKGROUND

The glutamine, leucine, lysine, and serine-rich protein ELKS, also designated Rab6-interacting protein 2 and CAZ-associated structural protein (CAST) or the acronym ERC, is a member of a family of RIM-binding proteins. RIMs are presynaptic active zone proteins that regulate neurotransmitter release. This class of protein functions by recruiting $\text{I}\kappa\text{B}\alpha$ to the $\text{I}\kappa\text{B}$ kinase (IKK) complex, and thus serves a regulatory function for IKK activation. Five isoforms of ELKS (α , β , γ , δ , and ϵ) exist and have multiple coding region differences and distinct C-termini. Only brain-specific ELKS bind to RIMs, but both ubiquitous and brain-specific ELKS bind to Rab6, a GTP-binding protein involved in membrane traffic at the Golgi complex. Fusion of ELKS to RET due to translocation t(10;12)(q11;p13) results in a papillary thyroid carcinoma.

REFERENCES

- Nakata, T., et al. 1999. Fusion of a novel gene, ELKS, to RET due to translocation t(10;12)(q11;p13) in a papillary thyroid carcinoma. *Genes Chromosomes Cancer* 25: 97-103.
- Wang, Y., et al. 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., et al. 2003. Interaction of the ERC fami family of multidomain proteins. *J. Biol. Chem.* 278: 42377-42385.
- Deguchi-Tawarada, M., et al. 2004. CAST2: identification and characterization of a protein structurally related to the presynaptic cytomatrix protein CAST. *Genes Cells* 9: 15-23.
- Ohara-Imaizumi, M., et al. 2005. ELKS, a protein structurally related to the active zone-associated protein CAST, is expressed in pancreatic β cells and functions in Insulin exocytosis: interaction of ELKS with exocytotic machinery analyzed by total internal reflection fluorescence microscopy. *Mol. Biol. Cell* 16: 3289-3300.
- Deken, S.L., et al. 2005. Redundant localization mechanisms of RIM and ELKS in *Caenorhabditis elegans*. *J. Neurosci.* 25: 5975-5983.
- Lu, J., et al. 2005. Solution structure of the RIM1 α PDZ domain in complex with an ELKS1b C-terminal peptide. *J. Mol. Biol.* 352: 455-466.

CHROMOSOMAL LOCATION

Genetic locus: ERC1 (human) mapping to 12p13.33; Erc1 (mouse) mapping to 6 F1.

SOURCE

ELKS (E-1) is a mouse monoclonal antibody raised against amino acids 112-159 mapping near the N-terminus of ELKS of human origin.

PRODUCT

Each vial contains 200 μg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

ELKS (E-1) is recommended for detection of ELKS of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ELKS siRNA (h): sc-60572, ELKS siRNA (m): sc-60573, ELKS shRNA Plasmid (h): sc-60572-SH, ELKS shRNA Plasmid (m): sc-60573-SH, ELKS shRNA (h) Lentiviral Particles: sc-60572-V and ELKS shRNA (m) Lentiviral Particles: sc-60573-V.

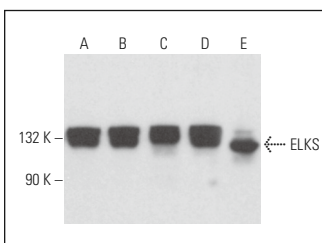
Molecular Weight of ELKS: 94 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, COLO 320DM cell lysate: sc-2226 or Jurkat whole cell lysate: sc-2204.

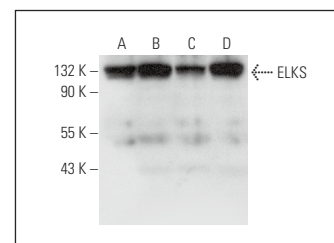
RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



ELKS (E-1): sc-365715. Western blot analysis of ELKS expression in NTERA-2 cl.D1 (A), SW480 (B), NIH/3T3 (C) and Neuro-2A (D) whole cell lysates and rat brain tissue extract (E).



ELKS (E-1): sc-365715. Western blot analysis of ELKS expression in COLO 320DM (A), HeLa (B), Jurkat (C) and A2058 (D) whole cell lysates.

SELECT PRODUCT CITATIONS

- Liu, C., et al. 2014. The active zone protein family ELKS supports Ca^{2+} influx at nerve terminals of inhibitory hippocampal neurons. *J. Neurosci.* 34: 12289-12303.

STORAGE

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