SANTA CRUZ BIOTECHNOLOGY, INC.

ENSA (L7Q): sc-81883

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ATP-dependent potassium K_{ATP} channels regulate the polarity of the cell membrane, which affects cell metabolism and Insulin secretion. When ATP levels rise in response to an increased rate of glucose metabolism, the K_{ATP} channels close, which stimulates the cells to secrete Insulin. K_{ATP} channels are composed of two structurally unrelated subunits; a Kir6.0 subfamily component and a sulfonylurea receptor (SUR) component. ENSA (α-endosulfine), also known as ARPP-19e, is a 121 amino acid endogenous ligand for SUR. ENSA inhibits the binding of sulfonylurea to the SUR component of the K_{ATP} channel, thereby reducing channel activity and stimulating the secretion of Insulin. ENSA is localized to the cytoplasm and widely expressed in tissues, with high expression in brain and muscle and low expression in pancreas. ENSA is phosphorylated by PKA and exists as two isoforms, designated α and β, produced by alternative splicing.

REFERENCES

1. Heron, L., et al. 1998. Human α-endosulfine, a possible regulator of sulfonylurea-sensitive K_{ATP} channel: molecular cloning, expression and biological properties. Proc. Natl. Acad. Sci. USA 95: 8387-8391.
2. Héron, L., et al. 1999. Isolation, characterization, and chromosomal localization of the human ENSA gene that encodes α-endosulfine, a regulator of β-cell K_{ATP} channels. Diabetes 48: 1873-1876.
3. Bataille, D. 2000. Endosulfines: novel regulators of Insulin secretion. Drug News Perspect 13: 453-462.
4. Kim, S.H. and Lubec, G. 2001. Decreased α-endosulfine, an endogenous regulator of ATP-sensitive potassium channels, in brains from adult Down syndrome patients. J. Neural Transm. Suppl. 61: 1-9.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603061. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Wang, H., et al. 2004. α-endosulfine, a positional and functional candidate gene for type 2 diabetes: molecular screening, association studies, and role in reduced Insulin secretion. Mol. Genet. Metab. 81: 9-15.
7. Gabrielsson, B.G., et al. 2004. Molecular characterization of a local sulfonylurea system in human adipose tissue. Mol. Cell. Biochem. 258: 65-71.

CHROMOSOMAL LOCATION

Genetic locus: ENSA (human) mapping to 1q21.3; Ensa (mouse) mapping to 3 F2.1.

SOURCE

ENSA (L7Q) is a mouse monoclonal antibody raised against full length ENSA of human origin.

PRODUCT

Each vial contains 200 µl ascites containing IgG_{2a} kappa light chain with < 0.1% sodium azide.

APPLICATIONS

ENSA (L7Q) is recommended for detection of ENSA of mouse, rat and human origin by Western Blotting (starting dilution: to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:30-1:5000).

Suitable for use as control antibody for ENSA siRNA (h): sc-78564, ENSA siRNA (m): sc-144657, ENSA shRNA Plasmid (h): sc-78564-SH, ENSA shRNA Plasmid (m): sc-144657-SH, ENSA shRNA (h) Lentiviral Particles: sc-78564-V and ENSA shRNA (m) Lentiviral Particles: sc-144657-V.

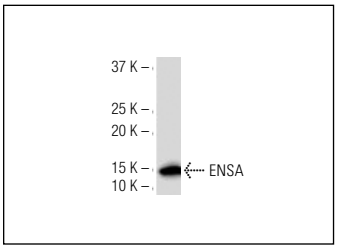
Molecular Weight of ENSA: 13 kDa.

Positive Controls: COLO 320 HSR whole cell lysate.

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, 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).

DATA



ENSA (L7Q): sc-81883. Western blot analysis of ENSA expression in COLO 320 HSR whole cell lysate.

SELECT PRODUCT CITATIONS

1. Chen, Y.L., et al. 2013. ENSA expression correlates with attenuated tumor propagation in liver cancer. Biochem. Biophys. Res. Commun. 442: 56-61.
2. Diril, M.K., et al. 2016. Loss of the greatwall kinase weakens the spindle assembly checkpoint. PLoS Genet. 12: e1006310.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

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