SANTA CRUZ BIOTECHNOLOGY, INC.

IRAP (E-14): sc-107642

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

IRAP (insulin-responsive aminopeptidase), also known as LNPEP (leucyl-cystinyl aminopeptidase), OTase (oxytocinase) or P-LAP (placental leucine aminopeptidase), is a 1,025 amino acid protein that is highly expressed in placenta, heart, kidney and small intestine and at lower levels in neuronal cells in brain, in skeletal muscle, spleen, liver, testes and colon. IRAP belongs to the peptidase M1 family and is thought to play a role in the degradation of hormones such as oxytocin, vasopressin and Angiotensin III. IRAP maintains homeostasis during pregnancy and may be involved in the inactivation of neuronal peptides in the brain. It is suggested that IRAP regulates the trafficking of the insulin-responsive glucose transporter Glut4, thereby influencing glucose uptake in cells. IRAP interacts with Tankyrase-1 and Tankyrases-2, which are novel signaling targets of extracellular signal-regulated kinase (ERK) in the Golgi. Three isoforms exists due to alternative splicing.

REFERENCES

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2. Sbodio, J.I., et al. 2002. Tankyrase-2 oligomerizes with Tankyrase-1 and binds to both TRF1 (telomere-repeat-binding factor 1) and IRAP (insulin-responsive aminopeptidase). Biochem. J. 361: 451-459.
3. Yeh, T.Y., et al. 2007. Insulin-stimulated exocytosis of Glut4 is enhanced by IRAP and its partner tankyrase. Biochem. J. 402: 279-290.
4. Fernando, R.N., et al. 2007. Subcellular localization of insulin-regulated membrane aminopeptidase, IRAP to vesicles in neurons. J. Neurochem. 102: 967-976.
5. Chai, S.Y., et al. 2008. Development of cognitive enhancers based on inhibition of insulin-regulated aminopeptidase. BMC Neurosci. 9: S14.
6. Fernando, R.N., et al. 2008. The insulin-regulated aminopeptidase IRAP is co-localised with Glut4 in the mouse hippocampus — potential role in modulation of glucose uptake in neurones? Eur. J. Neurosci. 28: 588-598.
7. Watson, R.T., et al. 2008. Recycling of IRAP from the plasma membrane back to the insulin-responsive compartment requires the Q-SNARE Syntaxin 6 but not the GGA clathrin adaptors. J. Cell. Sci. 121: 1243-1251.
8. Cohen, M., et al. 2008. Effects of ligands or substrate of insulin-regulated aminopeptidase (IRAP) on trophoblast invasion. J. Pept. Sci. 14: 883-887.
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CHROMOSOMAL LOCATION

Genetic locus: LNPEP (human) mapping to 5q15; Lnpep (mouse) mapping to 17 A3.2.

SOURCE

IRAP (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of IRAP of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-107642 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

IRAP (E-14) is recommended for detection of IRAP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 IRAP siRNA (h): sc-91674, IRAP siRNA (m): sc-146283, IRAP siRNA (r): sc-270038, IRAP shRNA Plasmid (h): sc-91674-SH, IRAP shRNA Plasmid (m): sc-146283-SH, IRAP shRNA Plasmid (h): sc-270038-SH, IRAP shRNA (h) Lentiviral Particles: sc-91674-V, IRAP shRNA (m) Lentiviral Particles: sc-146283-V and IRAP shRNA (h) Lentiviral Particles: sc-270038-V.

Molecular Weight of IRAP: 140 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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