

IRAP (F-5): sc-365300

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, testis 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 exist due to alternative splicing.

REFERENCES

- Chi, N.W. and Lodish, H.F. 2000. Tankyrase is a Golgi-associated mitogen-activated protein kinase substrate that interacts with IRAP in Glut4 vesicles. *J. Biol. Chem.* 275: 38437-38444.
- 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.
- Yeh, T.Y., et al. 2007. Insulin-stimulated exocytosis of Glut4 is enhanced by IRAP and its partner tankyrase. *Biochem. J.* 402: 279-290.
- Fernando, R.N., et al. 2007. Subcellular localization of Insulin-regulated membrane aminopeptidase, IRAP to vesicles in neurons. *J. Neurochem.* 102: 967-976.
- Chai, S.Y., et al. 2008. Development of cognitive enhancers based on inhibition of Insulin-regulated aminopeptidase. *BMC Neurosci.* 9: S14.

CHROMOSOMAL LOCATION

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

SOURCE

IRAP (F-5) is a mouse monoclonal antibody raised against amino acids 15-144 mapping near the N-terminus of IRAP of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IRAP (F-5) is available conjugated to agarose (sc-365300 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365300 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365300 PE), fluorescein (sc-365300 FITC), Alexa Fluor[®] 488 (sc-365300 AF488), Alexa Fluor[®] 546 (sc-365300 AF546), Alexa Fluor[®] 594 (sc-365300 AF594) or Alexa Fluor[®] 647 (sc-365300 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-365300 AF680) or Alexa Fluor[®] 790 (sc-365300 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

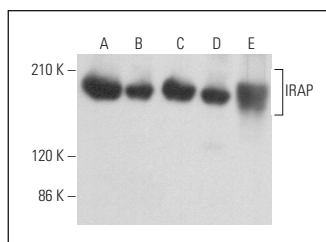
IRAP (F-5) is recommended for detection of IRAP of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 (r): sc-270038-SH, IRAP shRNA (h) Lentiviral Particles: sc-91674-V, IRAP shRNA (m) Lentiviral Particles: sc-146283-V and IRAP shRNA (r) Lentiviral Particles: sc-270038-V.

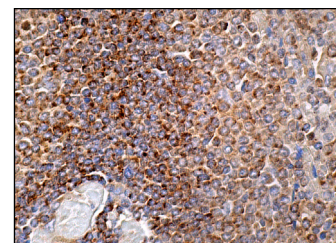
Molecular Weight of IRAP: 140 kDa.

Positive Controls: C2C12 whole cell lysate: sc-364188, Sol8 cell lysate: sc-2249 or A-10 cell lysate: sc-3806.

DATA



IRAP (F-5): sc-365300. Western blot analysis of IRAP expression in C2C12 (A), Sol8 (B), BC₃H1 (C), A-10 (D) and HeLa (E) whole cell lysates.



IRAP (F-5): sc-365300. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic staining of cells in red and white pulps.

SELECT PRODUCT CITATIONS

- Abrahão, M.V., et al. 2019. Identification of Insulin-regulated aminopeptidase (IRAP) in the rat pineal gland and the modulation of melatonin synthesis by Angiotensin IV. *Brain Res.* 1704: 40-46.
- Mattorre, B., et al. 2022. A short ERAP2 that binds IRAP is expressed in macrophages independently of gene variation. *Int. J. Mol. Sci.* 23: 4961.

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 for detailed protocols and support products.

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