SANTA CRUZ BIOTECHNOLOGY, INC.

PTP IA-2 (A-5): sc-390101

BACKGROUND

Protein tyrosine phosphatases, or PTPs, are type I transmembrane proteins, membrane associated proteins or proteins localized in nuclei. Examples of transmembrane PTPs are LAR, PTPα, PTPβ, PTPγ, PTPδ, PTPε, PTPω, PTPκ and PTPμ. Transmembrane PTPs play diverse roles in a variety of cellular processes during development and in adult tissues. PTP IA-2 (PTP insulinoma-associated protein 2), also known as PTPRN, IA2, ICA512 (islet cell antigen 512) or RPTPN, is a receptor-type PTP-like protein containing a transmembrane region, an intracellular PTP-like domain, and an extracellular N-terminus. Localizing to secretory granules, PTP IA-2 is exclusively expressed in neuroendocrine cells (including pancreatic islet cells) and is believed to participate in the regulation of secretory granule exocytosis. PTP IA-2 is an autoantigen and contributes to Insulin-dependent diabetes mellitus (IDDM). The detection of autoantibodies against PTP IA-2 is commonly used as a diabetes diagnosis marker.

REFERENCES

1. Dogra, R.S., et al. 2006. Alternative splicing of G6PC2, the gene coding for the islet-specific glucose-6-phosphatase catalytic subunit-related protein (IGRP), results in differential expression in human thymus and spleen compared with pancreas. Diabetologia 49: 953-957.
2. Piquer, S., et al. 2006. Monoclonal antibody 76F distinguishes IA-2 from IA-2β and overlaps an autoantibody epitope. J. Autoimmun. 26: 215-222.
3. Primo, M.E., et al. 2006. Expression and physicochemical characterization of an extracellular segment of the receptor protein tyrosine phosphatase IA-2. Biochim. Biophys. Acta 1764: 174-181.

CHROMOSOMAL LOCATION

Genetic locus: PTPRN (human) mapping to 2q35; Ptprn (mouse) mapping to 1 C3.

SOURCE

PTP IA-2 (A-5) is a mouse monoclonal antibody raised against amino acids 723-763 mapping within an internal region of PTP IA-2 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.

PTP IA-2 (A-5) is available conjugated to agarose (sc-390101 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390101 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390101 PE), fluorescein (sc-390101 FITC), Alexa Fluor® 488 (sc-390101 AF488), Alexa Fluor® 546 (sc-390101 AF546), Alexa Fluor® 594 (sc-390101 AF594) or Alexa Fluor® 647 (sc-390101 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390101 AF680) or Alexa Fluor® 790 (sc-390101 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

PTP IA-2 (A-5) is recommended for detection of PTP IA-2 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).

PTP IA-2 (A-5) is also recommended for detection of PTP IA-2 in additional species, including canine and bovine.

Suitable for use as control antibody for PTP IA-2 siRNA (h): sc-62902, PTP IA-2 siRNA (m): sc-62903, PTP IA-2 shRNA Plasmid (h): sc-62902-SH, PTP IA-2 shRNA Plasmid (m): sc-62903-SH, PTP IA-2 shRNA (h) Lentiviral Particles: sc-62902-V and PTP IA-2 shRNA (m) Lentiviral Particles: sc-62903-V.

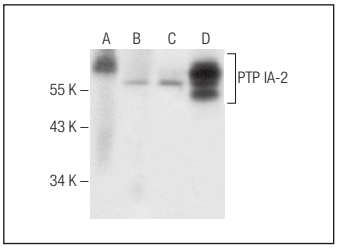
Molecular Weight of PTP IA-2 isoforms: 71/67/64/60/30 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, IMR-32 cell lysate: sc-2409 or human cerebral cortex extract: sc-516707.

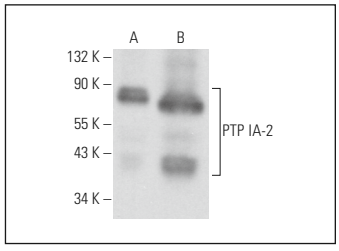
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



PTP IA-2 (A-5): sc-390101. Western blot analysis of PTP IA-2 expression in AtT-20/D16vF2 (**A**), SK-N-MC (**B**), MIA PaCa-2 (**C**) and IMR-32 (**D**) whole cell lysates.



PTP IA-2 (A-5): sc-390101. Western blot analysis of PTP IA-2 expression in human cerebral cortex (**A**) and rat brain (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Qu, Z. and D'Mello, S.R. 2018. Proteomic analysis identifies NPTX1 and HIP1R as potential targets of histone deacetylase-3-mediated neurodegeneration. Exp. Biol. Med. 243: 627-638.

RESEARCH USE

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