

# PTP IA-2 (P-15): sc-54751

## 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, PTP $\alpha$ , PTP $\beta$ , PTP $\gamma$ , PTP $\delta$ , PTP $\epsilon$ , PTP $\zeta$ , PTP $\kappa$  and PTP $\mu$ . 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

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2. Piquer, S., et al. 2006. Monoclonal antibody 76F distinguishes IA-2 from IA-2 $\beta$  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.
4. Gupta, M., et al. 2006. MHC class I chain-related gene-A is associated with IA2 and IAA but not GAD in Swedish type 1 diabetes mellitus. *Ann. N.Y. Acad. Sci.* 1079: 229-239.
5. Mziaut, H., et al. 2006. Synergy of glucose and growth hormone signalling in islet cells through ICA512 and STAT5. *Nat. Cell Biol.* 8: 435-445.
6. Forrest, A.R., et al. 2006. Genome-wide review of transcriptional complexity in mouse protein kinases and phosphatases. *Genome Biol.* 7: R5.
7. Blancou, P., et al. 2007. Immunization of HLA class I transgenic mice identifies autoantigenic epitopes eliciting dominant responses in type 1 diabetes patients. *J. Immunol.* 178: 7458-7466.
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## CHROMOSOMAL LOCATION

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

## RESEARCH USE

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

## SOURCE

PTP IA-2 (P-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of PTP IA-2 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-54751 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PTP IA-2 (P-15) is recommended for detection of PTP IA-2 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).

PTP IA-2 (P-15) is also recommended for detection of PTP IA-2 in additional species, including equine, canine, bovine and porcine.

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: 65 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<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> 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<sup>™</sup> 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.