SANTA CRUZ BIOTECHNOLOGY, INC.

LAR (R-20): sc-1119

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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, PTPζ, PTPκ and PTPμ. Transmembrane PTPs play diverse roles during development and in adult tissues. Immunodepletion studies have suggested LAR to be a regulator of Insulin receptor phosphorylation. PTPα activity is increased twofold in response to phorbol ester stimulation, resulting in serine phosphorylation either directly or indirectly by members of the PKC family. Overexpression of v-H-Ras and Neu, but not Myc or Int2, in mammary tumors has been shown to induce PTPε expression. PTPμ localizes to points of cell contact and may be involved in regulating the assembly and disassembly of cadherin/catenin complexes *in vivo*. PTPμ and PTPκ share a conserved amino-terminal 160 amino acid MAM domain which facilitates homophilic binding. An alternative splicing event leads to a nervous tissue-specific chondroitin sulfate proteoglycan called phosphacan, which represents the amino-terminal portion of PTPζ.

REFERENCES

1. Ahmad, F., et al. 1995. Increased abundance of the receptor-type protein-tyrosine phosphatase LAR accounts for the elevated Insulin receptor dephosphorylating activity in adipose tissue of obese human subjects. J. Clin. Invest. 95: 2806-2812.
2. den Hertog, J., et al. 1995. Stimulation of receptor protein-tyrosine phosphatase α activity and phosphorylation by phorbol ester. Cell Growth Differ. 6: 303-307.

CHROMOSOMAL LOCATION

Genetic locus: PTPRF (human) mapping to 1p34.2, PTPRD (human) mapping to 9p24.1; Ptprf (mouse) mapping to 4 D2.1, Ptprd (mouse) mapping to 4 C3.

SOURCE

LAR (R-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of LAR of rat 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-1119 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

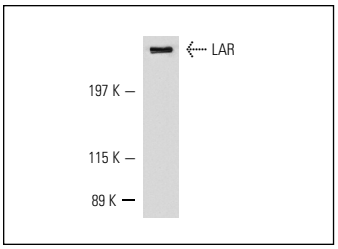
LAR (R-20) is recommended for detection of precursor and mature LAR and, to a lesser extent, PTPσ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

LAR (R-20) is also recommended for detection of precursor and mature LAR and, to a lesser extent, PTPδ in additional species, including equine, canine, bovine, porcine and avian.

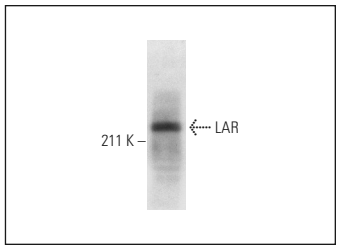
Molecular Weight of LAR: 240/150/85 kDa.

Positive Controls: NRK whole cell lysate: sc-364197 or NIH/3T3 whole cell lysate: sc-2210.

DATA



LAR (R-20): sc-1119. Western blot analysis of LAR expression in NRK whole cell lysate.



LAR (R-20): sc-1119. Western blot analysis of LAR expression in NIH/3T3 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Fukada, T., et al. 2003. Identification of YB-1 as a regulator of PTP1B expression: implications for regulation of Insulin and cytokine signaling. EMBO J. 22: 479-493.
2. Lam, N.T., et al. 2004. Leptin increases hepatic Insulin sensitivity and protein tyrosine phosphatase 1B expression. Mol. Endocrinol. 18: 1333-1345.
3. Belcher, S.M., et al. 2005. Rapid estrogenic regulation of extracellular signal-regulated kinase 1/2 signaling in cerebellar granule cells involves a G protein- and protein kinase A-dependent mechanism and intracellular activation of protein phosphatase 2A. Endocrinology 146: 5397-5406.
4. Niu, X.L., et al. 2007. Leukocyte antigen-related deficiency enhances Insulin-like growth factor-1 signaling in vascular smooth muscle cells and promotes neointima formation in response to vascular injury. J. Biol. Chem. 282: 19808-19819.