

PPP1R4 (S-15): sc-98086

BACKGROUND

In eukaryotes, the phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions, including division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the protein phosphatases. PPP1R4 (Protein phosphatase 1 regulatory subunit 4), also known as PPP1R3B and hepatic glycogen-targeting protein phosphatase 1 regulatory subunit GL, is a 285 amino acid protein that suppresses the rate at which PP1 α dephosphorylates GP (glycogen phosphorylase). PPP1R4 associates with glycogen particles and acts as a glycogen targeting subunit for PP1 α , ultimately limiting glycogen breakdown. PPP1R4 is highly expressed in heart, skeletal muscle and liver. Although the gene encoding PPP1R4 maps within a region that has been linked to type-II diabetes and maturity-onset diabetes of the young (MODY), it does not appear to be involved in diabetes pathogenesis in caucasian families.

REFERENCES

1. Doherty, M.J., et al. 1995. Amino acid sequence and expression of the hepatic glycogen-binding (GL)-subunit of protein phosphatase-1. *FEBS Lett.* 375: 294-298.
2. Doherty, M.J., et al. 1998. Loss of the hepatic glycogen-binding subunit (GL) of protein phosphatase 1 underlies deficient glycogen synthesis in Insulin-dependent diabetic rats and in adrenalectomized starved rats. *Biochem. J.* 333: 253-257.
3. Armstrong, C.G., et al. 1998. Identification of the separate domains in the hepatic glycogen-targeting subunit of protein phosphatase 1 that interact with phosphorylase a, glycogen and protein phosphatase 1. *Biochem. J.* 336: 699-704.
4. Munro, S., et al. 2002. Human skeletal muscle expresses a glycogen-targeting subunit of PP1 that is identical to the Insulin-sensitive glycogen-targeting subunit GL of liver. *Diabetes* 51: 591-598.
5. Dunn, J.S., et al. 2006. Examination of PPP1R3B as a candidate gene for the type 2 diabetes and MODY loci on chromosome 8p23. *Ann. Hum. Genet.* 70: 587-593.

CHROMOSOMAL LOCATION

Genetic locus: PPP1R3B (human) mapping to 8p23.1; Ppp1r3b (mouse) mapping to 8 A4.

SOURCE

PPP1R4 (S-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PPP1R4 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-98086 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PPP1R4 (S-15) is recommended for detection of PPP1R4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

PPP1R4 (S-15) is also recommended for detection of PPP1R4 in additional species, including equine.

Suitable for use as control antibody for PPP1R4 siRNA (h): sc-77814, PPP1R4 siRNA (m): sc-152425, PPP1R4 shRNA Plasmid (h): sc-77814-SH, PPP1R4 shRNA Plasmid (m): sc-152425-SH, PPP1R4 shRNA (h) Lentiviral Particles: sc-77814-V and PPP1R4 shRNA (m) Lentiviral Particles: sc-152425-V.

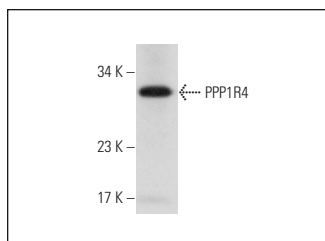
Molecular Weight of PPP1R4: 33 kDa.

Positive Controls: rat heart extract: sc-2393.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



PPP1R4 (S-15): sc-98086. Western blot analysis of PPP1R4 expression in rat heart tissue extract.

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.