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California Bioscience

Product Datasheet

Product Name	Protein Phosphatase-1 Regulatory Subunit-14A Human Recombinant
Cata No	CB501379
Source	*Escherichia Coli.*
Synonyms	Protein phosphatase 1 regulatory subunit 14A, 17 kDa PKC-potentiated inhibitory protein of PP1, CPI17, CPI-17, PPP1INL, PPP1R14A.

Description

PPP1R14A is a phosphorylation-dependent inhibitor of smooth muscle myosin phosphatase. Inhibition of PPP1R14A results to increased myosin phosphorylation and enhances smooth muscle contraction in the absence of increased intracellular Ca(2+) concentration. Myosin phosphatase can reverse MYL (myosin light chain) phosphorylation to induce a state of relaxation. However, during agonist-induced contraction at constant Ca^{2+} concurrent inhibition of myosin phosphatase leads to increases in MYL phosphorylation and tension. These calcium-independent increases in myosin phosphorylation and tension are termed calcium sensitization.

Human pregnancy is characterized by the increases of PKN1 expression and CPI-17 phosphorylation in the myometrium. PPP1R14A is mapped to chromosome 19q13.13-q13.2.

PPP1R14A binds directly to protein kinase C and casein kinase I.

PPP1R14A siRNA decreased the level of merlin phosphorylation and consequently Ras and ERK activity in human tumor cell lines.

PKC/CPI-17 mediated pathway in histamine, triggeres cytoskeletal rearrangements causing lung microvascular barrier compromise.

Recombinant PPP1R14A produced in E.Coli is a single, non-glycosylated polypeptide chain containing 167 amino acids and having a molecular mass of 18 kDa. PPP1R14A is fused to His Tag and is purified by conventional chromatography techniques.

Physical Appearance

Sterile filtered colorless solution.

Purity

Greater than 95.0% as determined by:
(a) Analysis by RP-HPLC.
(b) Analysis by SDS-PAGE.

Formulation

The PPP1R14A protein solution (1mg/ml) contains 20mM Tris-HCl, pH-8, 0.2mM EDTA, 1mM DTT and 10% glycerol.

Stability

Store at 4°C if entire vial will be used within 2-4 weeks.
Store, frozen at -20°C for longer periods of time.
For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).
Avoid multiple freeze-thaw cycles.

Sequence

MGSSHHHHHH SSGLVPRGSH MAAQRLGKRV LSKLQSPSRA RGPGGSPGGL QKRHARVTVK YDRRELQRRL DVEKWIDGRL EELYRGMEAD MPDEINIDEL LELESEEERS RKIQGLLKSC GKPVEDFIQE LLAKLQGLHR QPGLRQPSPS HDGSLSPLQD RARTAHP.

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