

Recombinant Rat IRS1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52347

Size: 10ug, 100ug

Protein Name: Insulin receptor substrate 1 (IRS-1) (pp185)

Synonym: Irs1, Irs-1

UniProt ID: P35570

UniProt Link: www.uniprot.org/uniprotkb/P35570/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1235 AA

Molecular Weight: 131 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MASPPD TDGFSDVRKVG YLRKPKSMHKRFFVLRAASEAGGPARLEY YENEKKWRHKSSAPKRSIPL
ESCFNINKRADSKN KHLVALYTRDEHF AIAADSEAEQDSWYQALLQLHNRAKAHHDGAGGGCGGS
CSGSSGVGEAGEDLSYDTGPGPAFKEVWQVILKPKGLGQTKNLIGIYRLCLTSKTISFVKLNSEAAV
VLQLMNIRRCGHSENFF FIEVGRSAVTGPGEFWMQVDDSVVAQNMHETILEAMRAMSDEF RPRTKS
QSSSSCSNPISVPLRRHHLNPPPSQVGLTRRSRTESITATSPASMVG GKPGSFRVRASSDGEGTM
SRPASVDGSPVSPSTNRTHAHRHRGSSRLHPPLNHSRIPMPSSRCSPSATSPVSLSSSSTSGHGS
TSDCLFPRRSSASVSGSPSDGGFISSDEYGSSPCDFRSSF RSVTPDSLGHTPPARGEEELS NYICM
GGKGASTLTAPNGHYILSRGGNGHRYIPGATMG TSPALTGDEAAGAADLDNRFRKRTHSAGTSPTIS
HQKTPSQSSVVSIEEYTEMMPAAYPPGGGSGGRLPGYRHSAFVPTHSYPEEGLEMHHLERRGGHH
RPDSSNLHTDDGYMPMSPGVAPVPSNRKNGDYM PMSPKSVSAPQQIINPIRRHPQRVDPNGYMM
MSPSGCSPDIGGGSCSSSSISAAPSGSSYGK PWTNGVGGHHTHALPHA KPPVESGGGKLLPCTG
DYMNMSPVGDSNTSSPSECYYGPEDPQH KPVLSYYSLPRSFKHTQRPGEPEEGARHQHLRLSSSS
GRLRYTATAEDSSSSTSSDSLGGGYCGARPESSVTHPHHHALQPHLPRKVD TAAQTNSRLARPTRL
SLGDPKASTLPRVREQQQQQQQQQSS LHPPPEPKSPGEYVNIEFGSGQPGYLAGPATSRSSPSVR
CLPQLHPAPREETGSE EYMNMDLGPGR RATWQESGGVELGRVGPAPPGAASICRPTRSV PNSRG
DYMTMQIGCPRQSYVD TSPVAPVSYADMRTG IAAEKVSLPRTTGAAPPPSSTASASASVTPQGAAE
QAAHSSLLGGPQGP GGMSAFTRVNLSPNH NQSAKVIRADTQGCRRRHSSSETFSAPTRAANTVSFG
AGAAGGGSGGGSE DVKRHSSASFENVWLRPGDLGGASKESAPGCGAAGGLEKSLNYIDL DLVKDV
KQHPQDCPSQQQSLPPPPPHQLG SNEGSSPRRSED LSTYASINFQKQPEDRQ

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Insulin receptor substrate 1 (IRS-1) (pp185) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Signaling adapter protein that participates in the signal transduction from two prominent receptor tyrosine kinases, insulin receptor/INSR and insulin-like growth factor I receptor/IGF1R (PubMed:12399410). Plays therefore an important role in development, growth, glucose homeostasis as well as lipid metabolism. Upon phosphorylation by the insulin receptor, functions as a signaling scaffold that propagates insulin action through binding to SH2 domain-containing proteins including the p85 regulatory subunit of PI3K, NCK1, NCK2, GRB2 or SHP2 (PubMed:1380456). Recruitment of GRB2 leads to the activation of the guanine nucleotide exchange factor SOS1 which in turn triggers the Ras/Raf/MEK/MAPK signaling cascade (PubMed:8491186). Activation of the PI3K/AKT pathway is responsible for most of insulin metabolic effects in the cell, and the Ras/Raf/MEK/MAPK is involved in the regulation of gene expression and in cooperation with the PI3K pathway regulates cell growth and differentiation (By similarity). Acts a positive regulator of the Wnt/beta-catenin signaling pathway through suppression of DVL2 autophagy-mediated degradation leading to cell proliferation (By similarity).

Subcellular Localization: Cytoplasm . Nucleus . Note=Nuclear or cytoplasmic localization of IRS1 correlates with the transition from proliferation to chondrogenic differentiation.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.