



Recombinant Human IRS1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50573

Size: 10ug, 100ug

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

Synonym: IRS1

UniProt ID: P35568

UniProt Link: www.uniprot.org/uniprotkb/P35568/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1242 AA

Molecular Weight: 132 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MASPPESDGFSDVRKVGYLKPKSMHKRFFVLRAASEAGGPALREYYENEKKWRHKSSAPKRSIPL
ESCFNINKRADSKNKHLYTRDEHFIAAADSEAEQDSWYQALLQLHNRAKGHHGAAALGAGGG
GGSCSGSSGLGEAGEDLSYGDVPPGPAFKEVWQVILKPKGLGQTKNLIGIYRLCLTSKTSIFVKLNSE
AAAVVLQLMNIRRCGHSENFIEVGRSAVTGPGEFWMQVDDSVVAQNMHETILEAMRAMSDEFPRP
RSKSQSSSNCSNPISVPLRRHHLNNPPPSQVGLTRRSRTESITATSPASMVGKPGSFRVRASSDG
EGTMSRPASVDGSPVSPSTNRTHAHRHRGSARLHPPLNHSRSIPMPASRCSPSATSPVSLSSSSTS
GHGSTSDCLFPRRSSASVSGSPSDGGFISSDEYGSPPCDFRSSFRSVTPDSLGHSTPPARGEEELSN
YICMGKGKGPSTLTAPNGHYILSRGGNGHRCTPGTGLGTSPALAGDEAASAADLDNRFRKRTHSAGT
SPTITHQKTPSQSSVASIEEYTEMMPAYPPGGGSGGRLPGHRHSFAFVPTRSYPEEGLEMHPLERRG
GHHRPDSSTLHTDDGYMPMSPGVAPVPSGRKSGDYMPMSPKSVSAPQQIINPIRRHPQRVDPNG
YMMMSPPSGGCSPDIGGGPSSSSSSSSNAVPSGTSYGLKLTNGVGGHSHVLPHPKPPVESSGGKL
LPCTGDYMNMSPPVGDSTSSPDCYYGPEDPQHKKVLSYYSLPRSFKHTQRPGEPEEGARHQHLR
LSTSSGRLLYAATADSSSSTSSDSLGGGYCGARLEPSLPHPHHQVLQPHLPRKVDTAQAQNSRLA
RPTRLSLGDPKASTLPRAREQQQQQQQLLHPPEPKSPGEYVNIEFGSDQSGYLSPVAFHSSPSVR
CPSQLQPAPREEETGTEEYMKMDLGPGRRAAWQESTGVEMGRLGPAPPGAASICRPTRAVPSSR
GDYMTMQMSCPRQSYVDTSAPAPVSYADMRTGIAAEVSLPRATMAAASSSSAASASPTGPQGAA
ELAAHSSLLGGPQGPGGMSAFTRVNLSPNRNQSASAKVIRADPQGCRRRHSSETFSSTPSATRVGNT
VPFGAGAAVGGGGGSSSSSEDEVKRHSSASFENVWLRPGELGGAPKEPAKLCAAGGLENLNYID
LDLVKDFKQCPQECTPEPQPPPPPPPHQLGSGESSSTRSSSEDLASAYASISFQKQPEDRQ

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) 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:7541045, PubMed:33991522, PubMed:38625937). Plays therefore an important role in development, growth, glucose homeostasis as well as lipid metabolism (PubMed:19639489). 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:11171109, PubMed:8265614). 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 (By similarity). 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. Acts a positive regulator of the Wnt/beta-catenin signaling pathway through suppression of DVL2 autophagy-mediated degradation leading to cell proliferation (PubMed:24616100).

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.