

# Recombinant Human SH2B1 Protein

**For Research Use Only**

## 1. Basic Product Information

Catalog No.: REP50889

Size: 10ug, 100ug

Protein Name: SH2B adapter protein 1 (Pro-rich, PH and SH2 domain-containing signaling mediator) (PSM) (SH2 domain-containing protein 1B)

Synonym: SH2B1, KIAA1299, SH2B

UniProt ID: Q9NRF2

UniProt Link: [www.uniprot.org/uniprotkb/Q9NRF2/entry](http://www.uniprot.org/uniprotkb/Q9NRF2/entry)

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 756 AA

Molecular Weight: 79 KD

Protein Tag: C-terminal His6

## 2. Amino Acid Sequence

MNGAPSPEDGASPSSPPLPPPPPSWREFCESHARAAALDFARRFRLLYLASHPQYAGPGAEAAFS  
RRFAELFLQHFEAEVARASGSLSPILAPLSPGAEISPHDLSLESCRVGGLAVLGPSRSSDLAGPL  
PSSVSSSTTSSKPKLKKRFSRLSVGRSVRGSVRGILQWRGTVDPSSAGPLETSSGPPVLGGNSN  
SNSSGGAGTVGRGLVSDGTSPGERWTHRFERLRLSRGGGALKDGAGMVQRELLSFMGAEEAAP  
DPAGVGRGGGVAGPPSGGGGQPQWQKCRLLLRSEGGGGSRLEFFVPPKASRPRLSIPCSSITD  
VRTTTALEMPDRENTFVVKVEGPSEYIMETVDAQHVKAWSVDIQECLSPGPCPATSPRPMTLPLAP  
GTSFLTRENTDSLELSCLNHSESLPSQDLLLGPSESNDRLSQGAYGGLSDRPSASISPSSASIAASHF  
DSMELLPELPPRIPIEEGPPTGTVHPLSAPYPPLDTPETATGSFLFQGEPEGGEDQPLSGYPWFH  
GMLSRLLKAAQLVLTGGTGSHGVFLVRQSETRRGEYVLTFFNQGKAKHLRLSLNEEGQCRVQHLWF  
QSIFDMLHFRVHPIPLESGGSSDVVLVSYVPSSQRQQEPTTSHDPPQPPEPPSWTDPQPQGAEEA  
SRAPEVAAAAAAAKERQEKEKAGGGGVPEELVPVVELVPVVELEEAIAPGSEAQGAGSGGDAGVP  
PMVQLQQSPLGGDGEEGGHPRAINNQYSFV

## 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 SH2B adapter protein 1 (Pro-rich, PH and SH2 domain-containing signaling mediator) (PSM) (SH2 domain-containing protein 1B) 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:** Adapter protein for several members of the tyrosine kinase receptor family. Involved in multiple signaling pathways mediated by Janus kinase (JAK) and receptor tyrosine kinases, including the receptors of insulin (INS), insulin-like growth factor 1 (IGF1), nerve growth factor (NGF), brain-derived neurotrophic factor (BDNF), glial cell line-derived neurotrophic factor (GDNF), platelet-derived growth factor (PDGF) and fibroblast growth factors (FGFs). In growth hormone (GH) signaling, autophosphorylated ('Tyr-813') JAK2 recruits SH2B1, which in turn is phosphorylated by JAK2 on tyrosine residues. These phosphotyrosines form potential binding sites for other signaling proteins. GH also promotes serine/threonine phosphorylation of SH2B1 and these phosphorylated residues may serve to recruit other proteins to the GHR-JAK2-SH2B1 complexes, such as RAC1. In leptin (LEP) signaling, binds to and potentiates the activation of JAK2 by globally enhancing downstream pathways. In response to leptin, binds simultaneously to both, JAK2 and IRS1 or IRS2, thus mediating formation of a complex of JAK2, SH2B1 and IRS1 or IRS2. Mediates tyrosine phosphorylation of IRS1 and IRS2, resulting in activation of the PI 3-kinase pathway. Acts as a positive regulator of NGF-mediated activation of the Akt/Forkhead pathway; prolongs NGF-induced phosphorylation of AKT1 on 'Ser-473' and AKT1 enzymatic activity. Enhances the kinase activity of the cytokine receptor-associated tyrosine kinase JAK2 and of other receptor tyrosine kinases, such as FGFR3 and NTRK1. For JAK2, the mechanism seems to involve dimerization of both, SH2B1 and JAK2. Enhances RET phosphorylation and kinase activity. Isoforms seem to be differentially involved in IGF1 and PDGF-induced mitogenesis (By similarity).

**Subcellular Localization:** Cytoplasm . Membrane . Nucleus . Note=Shuttles between the nucleus and the cytoplasm.

## 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.