

Recombinant Human SMAD1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50901

Size: 10ug, 100ug

Protein Name: SMAD family member 1 (SMAD 1) (hSMAD1) (JV4-1) (Mad-related protein 1) (Mothers against decapentaplegic homolog 1) (MAD homolog 1) (Mothers against DPP homolog 1) (Transforming growth factor-beta-signaling protein 1) (BSP-1)

Synonym: SMAD1, BSP1, MADH1, MADR1

UniProt ID: Q15797

UniProt Link: www.uniprot.org/uniprotkb/Q15797/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 465 AA

Molecular Weight: 52 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MNVTSLFSFTSPAVKRLLGWKQGDEEEKWAEKAVDALVKKLKKKKGAMEEELKALSCPGQPSNCV
TIPRSLDGRLQVSHRKGLPHVIYCRVWRWPDQLQSHHELKPLECCEFPFGSKQKEVCINPYHYKRVE
SPVLPPVLVPRHSEYNPQHSLLAQFRNLGQNEPHMPLNATFPDSFQQPNSHPFPHSPNSSYPNSP
GSSSSTYPHSPTSSDPGSPFQMPADTPPPAYLPPEDPMTQDGSQPMDTNMMAPPLPSEINRGDVQ
AVAYECPKHWCIVYYELNNRVGEAFHASSTSVLVDGFTDPSNNKNRFLGLLSNVNRNSTIENTRR
HIGKGVHLYYVGGEVYAECLSDSSIFVQSRNCNYHHGFHPTTVCKIPSGCSLKIFNNQEFAQLLAQS
VNHGFETVYELTKMCTIRMSFVKGWGAEYHRQDVTSTPCWIEIHLHGPLQWLDKVLTMGSPHNPI
SSVS

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 SMAD family member 1 (SMAD 1) (hSMAD1) (JV4-1) (Mad-related protein 1) (Mothers against decapentaplegic homolog 1) (MAD homolog 1) (Mothers against DPP homolog 1) (Transforming growth factor-beta-signaling protein 1) (BSP-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: Transcriptional modulator that plays a role in various cellular processes, including embryonic development, cell differentiation, and tissue homeostasis (PubMed:9335504). Upon BMP ligand binding to their receptors at the cell surface, is phosphorylated by activated type I BMP receptors (BMPRI) and associates with SMAD4 to form a heteromeric complex which translocates into the nucleus acting as transcription factor (PubMed:33667543). In turn, the hetero-trimeric complex recognizes cis-regulatory elements containing Smad Binding Elements (SBEs) to modulate the outcome of the signaling network (PubMed:33667543). SMAD1/OAZ1/PSMB4 complex mediates the degradation of the CREBBP/EP300 repressor SNIP1. Positively regulates BMP4-induced expression of odontogenic development regulator MSX1 following IPO7-mediated nuclear import (By similarity).

Subcellular Localization: Cytoplasm . Nucleus . Note=Cytoplasmic in the absence of ligand. Migrates to the nucleus when complexed with SMAD4 (PubMed:15647271). Co-localizes with LEMD3 at the nucleus inner membrane (PubMed:15647271). Exported from the nucleus to the cytoplasm when dephosphorylated (By similarity).

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.