

Recombinant Mouse SMAD2 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51671

Size: 10ug, 100ug

Protein Name: SMAD family member 2 (SMAD 2) (Mad-related protein 2) (mMad2) (Mothers against decapentaplegic homolog 2) (MAD homolog 2) (Mothers against DPP homolog 2)

Synonym: Smad2, Madh2, Madr2

UniProt ID: Q62432

UniProt Link: www.uniprot.org/uniprotkb/Q62432/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 467 AA

Molecular Weight: 52 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MSSILPFTPPVVKRLLGWKKSAGGSGGAGGGGEQNGQEEKWCEKAVKSLVKKLKKTGRLDELEKAIT
TQNCNTKCVTIPSTCSEIWGLSTANTVDQWDTTGLYSFSEQTRSLDGRQLQVSHRKGLPHVIYCRLW
RWPDLHSHHELKAIENCEYAFNLKKDEVCVNPYHYQRVETPVLPPVLVPRHTEILTELPPLDDYTHSI
PENTNFPAGIEPQSNYIPETPPPGYISEDGETSDQQLNQSMGTGSPAELSPTTLSPVNHSLDLQPVT
YSEPAFWCSIAYYELNQRVGETFHASQPSTLDGFTDPSNSERFCLGLLSNVNRNATVEMTRRHIG
RGVRLYYIGGEVFAECLSDSAIFVQSPNCNQRYGWHPATVCKIPPGCNLKIFNNQEFAALLAQSVNQ
GFEAVYQLTRMCTIRMSFVKGWGAEYRRQTVTSTPCWIELHLNGPLQWLDKVLTMGSPSVRCSS
MS

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 2 (SMAD 2) (Mad-related protein 2) (mMad2) (Mothers against decapentaplegic homolog 2) (MAD homolog 2) (Mothers against DPP homolog 2) 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: Receptor-regulated SMAD (R-SMAD) that is an intracellular signal transducer and transcriptional modulator activated by TGF-beta (transforming growth factor) and activin type 1 receptor kinases. Binds the TRE element in the promoter region of many genes that are regulated by TGF-beta and, on formation of the SMAD2/SMAD4 complex, activates transcription. Promotes TGFB1-mediated transcription of odontoblastic differentiation genes in dental papilla cells (PubMed:33548622). Positively regulates PDPK1 kinase activity by stimulating its dissociation from the 14-3-3 protein YWHAQ which acts as a negative regulator (By similarity).

Subcellular Localization: Cytoplasm . Nucleus . Note=Cytoplasmic and nuclear in the absence of TGF-beta. On TGF-beta stimulation, migrates to the nucleus when complexed with SMAD4 or with IPO7 (PubMed:21145499, PubMed:33548622). On dephosphorylation by phosphatase PPM1A, released from the SMAD2/SMAD4 complex, and exported out of the nucleus by interaction with RANBP1 (By similarity). Localized mainly to the nucleus in the early stages of embryo development with expression becoming evident in the cytoplasm at the blastocyst and epiblast stages (PubMed:21145499).

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.