SMAD2 Protein, Human (His-SUMO)

Cat. No.:	HY-P71536
Synonyms:	Drosophila, homolog of, MADR2; hMAD-2; HsMAD2; JV18; JV18-1; JV181; MAD; MAD homolog 2; MAD Related Protein 2; Mad-related protein 2; MADH2; MADR2; MGC22139; MGC34440; Mothers against DPP homolog 2; OTTHUMP00000163489; Sma- and Mad-related protein 2 MAD; SMAD 2; SMAD family member 2; SMAD2; SMAD2_HUMAN
Species:	Human
Source:	E. coli
Accession:	Q15796 (S2-S467)
Gene ID:	4087
Molecular Weight:	Approximately 68.2 kDa

PROPERTIES

AA Sequence	S S I L P F T P P V V K R L L G W K K S A G G S G G A G G G E Q N G Q E E K W C E K A V K S L V K K L K K T G R L D E L E K A I T T Q N C N T K C V T I P S T C S E I W G L S T P N T I D Q W D T T G L Y S F S E Q T R S L D G R L Q V S H R K G L P H V I Y C R L W R W P D L H S H H E L K A I E N C E Y A F N L K K D E V C V N P Y H Y Q R V E T P V L P P V L V P R H T E I L T E L P P L D D Y T H S I P E N T N F P A G I E P Q S N Y I P E T P P P G Y I S E D G E T S D Q Q L N Q S M D T G S P A E L S P T T L S P V N H S L D L Q P V T Y S E P A F W C S I A Y Y E L N Q R V G E T F H A S Q P S L T V D G F T D P S N S E R F C L G L L S N V N R N A T V E M T R R H I G R G V R L Y Y I G G E V F A E C L S D S A I F V Q S P N C N Q R Y G W H P A T V C K I P P G C N L K I F N N Q E F A A L L A Q S V N Q G F E A V Y Q L T R M C T I R M S F V K G W G A E Y R R Q T V T S T P C W I E L H L N G P L Q W L D K V L T Q M G S P S V R C S S M S
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm sterile filtered 10 mM Tris-HCl, 1 mM EDTA, 6% Trehalose, pH 8.0.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The SMAD2 protein functions as a receptor-regulated SMAD (R-SMAD), serving as an intracellular signal transducer and transcriptional modulator activated by TGF-beta (transforming growth factor) and activin type 1 receptor kinases. It binds the TRE element in the promoter region of numerous genes regulated by TGF-beta, and upon forming the SMAD2/SMAD4 complex, it activates transcription. SMAD2 plays a role in promoting TGFB1-mediated transcription of odontoblastic differentiation genes in dental papilla cells. Additionally, it positively regulates PDPK1 kinase activity by stimulating its dissociation from the 14-3-3 protein YWHAQ, acting as a negative regulator. There is evidence suggesting its potential function as a tumor suppressor in colorectal carcinoma. SMAD2 exists as a monomer in the absence of TGF-beta and forms a heterodimer with co-SMAD, SMAD4, in the nucleus to constitute the transactivation complex SMAD2/SMAD4. It interacts with various proteins, including ZFYVE9, TAZ/WWRT1, FOXH1, SNW1, CREB-binding protein (CBP), EP300, SNON, ALK4/ACVR1B, SKOR1, SKOR2, PRDM16, LEMD3, RBPMS, WWP1, RANBP3, PDPK1, DAB2, USP15, PPP5C, LDLRAD4, PMEPA1, ZFHX3, ZNF451, SMURF2, PPM1A, TGF-beta, TGFBR1, TGIF, TRIM33, ZNF580, NEDD4L, HGS, AIP1, WWP1, PML, ZNF8, RNF111, and YAP1, participating in diverse cellular processes, including signal transduction, transcriptional regulation, and protein-protein interactions.

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