

smad

The Smads are a family of intracellular signalling molecules that act downstream of receptors for the transforming growth factor (TGF)-beta family of ligands. Three classes of Smads have been identified. The receptor-regulated Smads are direct substrates for the type I receptors, which are serine/threonine kinases.

Once phosphorylated and activated, these Smads form hetero-oligomeric complexes with a second class of Smad, the common mediator Smads. These Smad complexes translocate to the nucleus, where they are recruited to DNA primarily by site-specific DNA binding transcription factors, and participate in regulating the transcription of target genes. Inhibitory Smads are the third identified class which antagonise the activity of the receptor-regulated Smads. Aberrant TGF-beta signalling has been associated with several human diseases such as cancer and fibrosis. The identification of the Smads as primary transducers of TGF-beta signals raises the possibility that agents directed at modulating Smad activity would have therapeutic applications.

Smad1, recombinant

Product Description

Sequence: human, full-length
Expression: GST-fusion in E. coli
Purification: glutathione affinity chromatography
Catalog Info: #RP-1601 5 µg \$295

Smad2, recombinant

Product Description

Sequence: human, full-length
Expression: GST-fusion in E. coli
Purification: glutathione affinity chromatography
Catalog Info: #RP-1602 5 µg \$295

Smad3, recombinant

Product Description

Sequence: human, full-length
Expression: GST-fusion in E. coli
Purification: glutathione affinity chromatography
Catalog Info: #RP-1603 5 µg \$295

Smad4, recombinant

Product Description

Sequence: human, full-length
Expression: GST-fusion in E. coli
Purification: glutathione affinity chromatography
Catalog Info: #RP-1604 5 µg \$295

Smad5, recombinant

Product Description

Sequence: human, full-length
Expression: GST-fusion in E. coli
Purification: glutathione affinity chromatography
Catalog Info: #RP-1605 5 µg \$295

Applications

protein-protein interaction, DNA binding assay; use as substrates for protein kinases

Cytokines of the transforming growth factor-beta (TGF-beta) superfamily are multifunctional peptides that regulate growth and differentiation of various types of cells. Members of the TGF-beta superfamily bind to type II and type I serine/threonine kinase receptors, which mediate intracellular signals through SMAD proteins. Of 3 subtypes of SMADs, receptor-regulated SMADs are phosphorylated by the serine/threonine kinase receptors, form complexes with common-mediator SMAD, and move into the nucleus, where they act as components of transcription factor complexes.

Abnormalities of the TGF-beta receptors and SMADs have been detected in various tumors, including colorectal cancers and pancreatic cancers. Inhibitory SMADs and transcriptional co-repressors, including c-Ski and SnoN, repress the TGF-beta/SMAD signaling. Perturbation of the TGF-beta/SMAD signaling pathway may result in progression of tumors through resistance of the cells to the growth inhibition induced by TGF-beta.

TGF R1, recombinant

Product Description

Sequence: human, cytoplasmic domain
Expression: GST-fusion in E. coli
Purification: glutathione affinity chromatography
Catalog Info: #RP-1611 5 µg \$295

TGF R2, recombinant

Product Description

Sequence: human, full-length
Expression: GST-fusion in E. coli
Purification: glutathione affinity chromatography
Catalog Info: #RP-1612 5 µg \$295

Applications

kinase assay, protein-protein interaction, protein kinase substrates



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tgfb receptor