Data Sheet (Cat.No.TMPY-03419)

TargetMol

SMAD3 Protein, Human, Mouse, Rat, Recombinant (His & GST)

General Information

Synonyms: SMAD family member 3

Protein Construction: A DNA sequence encoding the human / mouse / rat SMAD3 (NP_058049.3) (Met1-Ser425) was expressed with a N-terminal polyhistidine tag followed by a GST tag. Human, Mouse and Rat sequences are identical. Predicted N terminal: Met

Species: Human,Mouse,Rat

Expression Host: Baculovirus Insect Cells

Accession: P84022-1

Molecular Weight: 75.9 kDa (predicted)

QC Testing

Biological Activity: Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.

Purity: > 85 % as determined by SDS-PAGE

Endotoxin: < 1.0 EU/μg of the protein as determined by the LAL method.

Formulation: Lyophilized from a solution filtered through a 0.22 μm filter, containing 20 mM Tris, 500 mM NaCl, 2 mM GSH, 10% glycerol, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

SMAD3 belongs to the SMAD family. Members of this family mediate signal transduction by the TGF-beta/activin/BMP-2/4 cytokine superfamily from receptor Ser/Thr protein kinases at the cell surface to the nucleus. SMAD3 is involved in cell signalling. It modulates signals of activin and TGFβ's. Binding of SMAD3 with SMAD4 enables its transmigration into the nucleus where it forms complexes with other proteins and acts as a

transcription factor. SMAD3 is a receptor-regulated SMAD (R-SMAD). In mice, mutation of SMAD3 has been linked to colorectal adenocarcinoma, increased systemic inflammation, and accelerated wound healing. Increased SMAD3 activity has been implicated in the pathogenesis of scleroderma. Smad3 is also a multifaceted regulator in adipose physiology and the pathogenesis of obesity and type 2 diabetes.

Reference

Tan. et al., 2011, Diabetes. 60 (2): 464-76.
Yang X. et al., 1999, Nat Cell Biol. 1 (5): 260-6.
Zhu Y. et al., 1998, Cell. 94 (6): 703-14.
Feng X. et al., 1996, Nature. 383 (6596): 168-72.

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