3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-SMAD1 (internal region)
produced in rabbit, affinity isolated antibody

Catalog Number **SAB4200377**

Product Description

Anti-SMAD1 (internal region) is produced in rabbit using as immunogen a peptide corresponding to an internal region of human SMAD1 (GeneID: 4086**),** conjugated to KLH. The corresponding sequence is identical in mouse and differs by one amino acid in rat. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-SMAD1 (internal region) recognizes human, mouse and rat SMAD1. The antibody may be used in various immunochemical techniques including immunoblotting (~60 kDa), immunoprecipitation and immunofluorescence. Detection of the SMAD1 band by immunoblotting is specifically inhibited by the immunizing peptide.

SMADs are a group of related proteins critical for transmitting signals from the transforming growth factor-β (TGFβ) to the nucleus, and thus regulate multiple cellular processes, such as cell proliferation, apoptosis, and differentiation. In mammals, 8 SMAD family members have been identified that can be grouped into three subfamilies, the receptor-regulated SMADs (R-SMADs), which include SMAD1, 2, 3, 5 and 8, the common-mediator SMAD (co-SMAD), SMAD4, and the inhibitory SMADs (I-SMADs), SMAD6 and 7, each of which plays a distinct role in the TGFβ pathway. Most SMADs have two conserved domains, the N-terminal MH1 and C-terminal MH2, that are separated by a proline-rich linker region of varying length. The MH1 domain regulates nuclear import and transcription by binding to DNA and interacting with nuclear proteins. The MH2 domain regulates SMAD oligomerization and recognition by type I receptors and interacts with cytoplasmic adaptors and transcription factors.[1-4]

SMAD1 mediates signals of the bone morphogenetic proteins (BMPs), which are involved in a range of biological activities including cell growth, apoptosis, morphogenesis, development and immune responses. In response to BMP ligands, this protein can be phosphorylated and activated by the BMP receptor kinase. The phosphorylated form of SMAD1 forms a complex with SMAD4, which is important for its function in transcription regulation. SMAD1 is a target for SMAD-specific E3 ubiquitin ligases, such as SMURF1 and SMURF2, and undergoes ubiquitination and proteasome-mediated degradation. Alternatively spliced transcript variants encoding the same protein have been observed.[1-6]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 1-2 µg/mL is recommended using whole extracts of mouse F9 cells.

Immunoprecipitation: a working amount of 1-2 µg is recommended using lysates of HEK-293T cells over-expressing human SMAD1.

Immunofluorescence: a working concentration of 2.5-5.0 µg/mL is recommended using rat NRK cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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