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Product Information

Anti-SMAD4
produced in rabbit, affinity isolated antibody

Catalog Number **SAB4200405**

Product Description

Anti-SMAD4 is produced in rabbit using as immunogen a peptide corresponding to an internal region of human SMAD4 (GeneID: 4089), conjugated to KLH. The corresponding sequence is identical in mouse, rat, bovine, dog, pig and bovine. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti- SMAD4 recognizes human SMAD4. The antibody may be used in various immunochemical techniques including immunoblotting (~60 kDa). Detection of the SMAD4 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.[1-2]

The tumor suppressor SMAD4, also named DPC4, is the common signaling effector in the TGFβ superfamily. Phosphorylated R-SMADs interact with SMAD4, and the complex translocates into the nucleus to regulate gene transcription. Mutations or deletions in the SMAD4 gene have been shown to result in pancreatic cancer, juvenile polyposis syndrome, and hereditary hemorrhagic telangiectasia syndrome.[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 HEK-293T cells over-expressing human SMAD4.

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

References

1. Attisano, L., and Hoeflich, S.T.L., *Genome Biol.*, **2**, 3010.1–3010.8 (2001).
2. Moustakas, A., et al., *J. Cell Sci.*, **114**, 4359-4369 (2001).
3. Liu, F., et al., *Genes Dev.*, **11**, 3157-3167 (1997).
4. Wan, M., et al., *EMBO Rep.*, **3**, 171-176 (2002).
5. Hao, J., et al., *Biochem. Biophys. Res. Commun.*, **406**, 552-557 (2011).
6. van Hattem, W.A., et al., *Am. J. Surg. Pathol.*, **35**, 530-536 (2011).

ST,TD,PHC 01/12-1