Human Activin B Precursor Antibody

Monoclonal Mouse IgG_1 Clone # 132807

Catalog Number: MAB11450

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Activin A Precursor in direct ELISA.
Source	Monoclonal Mouse IgG_1 Clone # 132807
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	DNA construct encoding human Activin A pro region fused to mature human Activin beta B chain
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

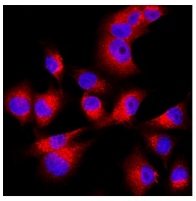
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

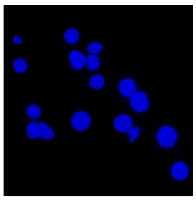
	Recommended Concentration	Sample
Immunocytochemistry	8 µg/mL	10% Formalin fixed A375 human melanoma cell line (Positive), PC-3 human prostate cancer cell line (Positive) and U266 human myeloma cell line (Negative)

DATA

Immunocytochemistry/ Immunofluorescence



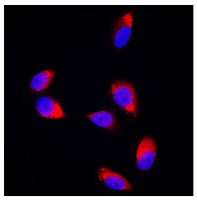
A375 (Positive) cells



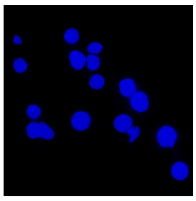
U266 (Negative) cells

Detection of Activin B in A375 cells (positive) and U266 cells (negative). Activin B was detected in 10% Formalin fixed A375 human melanoma cell line (Positive) and absent in U266 human myeloma cell line (Negative) using Mouse Anti-Human Activin B Precursor Monoclonal Antibody (Catalog # MAB11450) at 8 µg/ml for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (Blue). Specific staining was localized to cytoplasmic. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Immunocytochemistry/ Immunofluorescence



PC-3 (Positive) cells



U266 (Negative) cells

Detection of Activin B in PC-3 cells (positive) and U266 cells (negative). Activin B was detected in 10% Formalin fixed PC-3 human prostate cancer cell line (Positive) and absent in U266 human myeloma cell line (Negative) using Mouse Anti-Human Activin B Precursor Monoclonal Antibody (Catalog # MAB11450) at 8 µg/ml for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (Blue). Specific staining was localized to cytoplasmic. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Activin and Inhibin are members of the TGF-β superfamily of cytokines and are involved in a wide range of biological processes including tissue morphogenesis and repair, fibrosis, inflammation, neural development, hematopoiesis, reproductive system function, and carcinogenesis (1-7). Activin and Inhibin are produced as precursor proteins. Their amino terminal propeptides are proteolytically cleaved and facilitate formation of disulfide-linked dimers of the bioactive proteins (8, 9). Activins are nonglycosylated homodimers or heterodimers of various β subunits (βA, βB, βC, and βE in mammals), while Inhibins are heterodimers of a unique α subunit and one of the β subunits. Activin A is a widely expressed homodimer of two βA chains. The βA subunit can also heterodimerize with a βB or βC subunit to form Activin AB and Activin AC, respectively (10). The 14 kDa mature human βA chain shares 100% amino acid sequence identity with bovine, feline, mouse, porcine, and rat βA. Activin A exerts its biological activities by binding to the type 2 serine/threonine kinase Activin RIIA which then noncovalently associates with the type 1 serine/threonine kinase Activin RIB/ALK-4 (7, 11). Signaling through this receptor complex leads to Smad activation and regulation of activin-responsive gene transcription (7, 11). The bioactivity of Activin A is regulated by a variety of mechanisms (11). BAMBI, Betaglycan, and Cripto are cell-associated molecules that function as decoy receptors or limit the ability of Activin A to induce receptor complex assembly (12-14). The intracellular formation of Activin A can be prevented by the incorporation of the βA subunit into Activin AC or Inhibin A (3, 10). And the bioavailability of Activin A is restricted by its incorporation into inactive complexes with α2-Macroglobulin, Follistatin, and FLRG (15, 16).

References:

1. Kumanov, P. *et al.* (2005) Reprod. Biomed. Online **10**:786.
2. Maeshima, A. *et al.* (2008) Endocr. J. **55**:1.
3. Rodgarkia-Dara, C. *et al.* (2006) Mutat. Res. **613**:123.
4. Werner, S. and C. Alzheimer (2006) Cytokine Growth Factor Rev. **17**:157.
5. Xu, P. and A.K. Hall (2006) Dev. Biol. **299**:303.
6. Shav-Tal, Y. and D. Zipori (2002) Stem Cells **20**:493.
7. Chen, Y.G. *et al.* (2006) Exp. Biol. Med. **231**:534.
8. Gray, A.M. and A.J. Mason (1990) Science **247**:1328.
9. Mason, A.J. *et al.* (1996) Mol. Endocrinol. **10**:1055.
10. Thompson, T.B. *et al.* (2004) Mol. Cell. Endocrinol. **225**:9.
11. Harrison, C.A. *et al.* (2005) Trends Endocrinol. Metab. **16**:73.
12. Onichtchouk, D. *et al.* (1999) Nature **401**:480.
13. Gray, P.C. *et al.* (2002) Mol. Cell. Endocrinol. **188**:254.
14. Kelber, J.A. *et al.* (2008) J. Biol. Chem. **283**:4490.
15. Phillips, D.J. *et al.* (1997) J. Endocrinol. **155**:65.
16. Schneyer, A. *et al.* (2003) Endocrinology **144**:1671.

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