Human Activin RIB/ALK-4 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF222

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Activin RIB/ALK-4 in direct ELISAs and Western blots. In direct ELISAs, approximately 20% cross-reactivity with recombinant human (rh) Activin RIA is observed and less than 2% cross-reactivity with rhActivin RIIA and rhActivin RIIB is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Activin RIB Leu32-Glu126 Accession # AAA60556
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

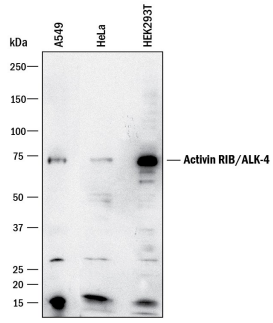
APPLICATIONS

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
Western Blot	1 µg/mL	See Below
Knockout Validated	Activin RIB/ALK-4 is specifically detected in HeLa human cervical epithelial carcinoma parental cell line but is not detectable in Activin RIB/ALK-4 knockout HeLa cell line.	
Blockade of Receptor-ligand Interaction	In a functional ELISA, 0.5-2 µg/mL of this antibody will block 50% of the binding of 50 ng/mL of Recombinant Human Cripto 1 (Catalog # 145-CR) to immobilized Recombinant Human Activin RIB/ALK-4 Fc Chimera (Catalog # 808-AR) coated at 2 µg/mL (100 µL/well). At 20 µg/mL, this antibody will block >90% of the binding.	

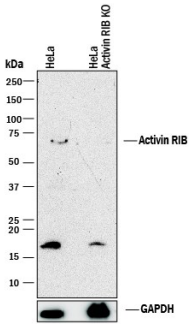
DATA

Western Blot



Detection of Human Activin RIB/ALK-4 by Western Blot. Western blot shows lysates of A549 human lung carcinoma cell line, HeLa human cervical epithelial carcinoma cell line, and HEK293T human embryonic kidney cell line. PVDF membrane was probed with 1 µg/mL of Goat Anti-Human Activin RIB/ALK-4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF222) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). A specific band was detected for Activin RIB/ALK-4 at approximately 70 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Knockout Validated



Western Blot Shows Human Activin RIB/ALK-4 Specificity by Using Knockout Cell Line. Western blot shows lysates of HeLa human cervical epithelial carcinoma parental cell line and Activin RIB/ALK-4 knockout HeLa cell line (KO). PVDF membrane was probed with 1 µg/mL of Goat Anti-Human Activin RIB/ALK-4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF222) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). A specific band was detected for Activin RIB/ALK-4 at approximately 70 kDa (as indicated) in the parental HeLa cell line, but is not detectable in knockout HeLa cell line. GAPDH (Catalog # AF5718) is shown as a loading control. This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
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 RIB, also known as ALK4, is a glycosylated 58 kDa type I receptor in the superfamily of TGF-β serine/threonine kinase receptors. Activin RIB associates with Activin RIIB to form a receptor complex for activin and inhibin molecules (1). These ligands bind to Activin RIIB which then associates with and phosphorylates the cytoplasmic domain of Activin RIB to initiate signal transduction (2, 3). Mature human Activin RIB consists of a 103 amino acid (aa) extracellular domain (ECD), a 23 aa transmembrane segment, and a 356 aa cytoplasmic region that includes the kinase domain (4). Within the ECD, human Activin RIB shares 93% and 95% aa sequence identity with mouse and rat Activin RIB, respectively. It shares 25% - 35% aa sequence identity with other human type I receptors Activin RIA, Activin RIC, BMPR-IA, BMPR-IB, and TGF-β R1. Alternately spliced isoforms of Activin RIB have deletions in the cytoplasmic domain and function as dominant negative inhibitors of activin signaling (5, 6). Activin receptor signaling is modulated by the direct interaction of Activin RIB with cripto or inhibin binding protein (7-9). Activin RIB is excluded from the signaling complex if Activin RIIB first binds inhibin and betaglycan (10). Activin RIB functions in a wide variety of growth and differentiation processes, including embryonic cell fate and axis determination, cell proliferation and apoptosis, and tumorigenesis (1, 11, 12).

References:

1. Chen, Y- G. *et al.* (2006) Exp. Biol. Med. **231**:534.
2. Attisano, L. *et al.* (1996) Mol. Cell. Biol. **16**:1066.
3. Tsuchida, K. *et al.* (1995) Endocrinology **136**:5493.
4. ten Dijke, P. *et al.* (1993) Oncogene **8**:2879.
5. Xu, J. *et al.* (1994) Proc. Natl. Acad. Sci. USA **91**:7957.
6. Zhou, Y. *et al.* (2000) Mol. Endocrinol. **14**:2066.
7. Chapman, S.C. and T.K. Woodruff (2001) Mol. Endocrinol. **15**:668.
8. Bianco, C. *et al.* (2002) Mol. Cell. Biol. **22**:2586.
9. Gray, P.C. *et al.* (2003) Proc. Natl. Acad. Sci. USA **100**:5193.
10. Lewis, K.A. *et al.* (2000) Nature **404**:411.
11. Gu, Z. *et al.* (1998) Genes Dev. **12**:844.
12. Chen, Y. *et al.* (2004) Dev. Biol. **268**:280.

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