

#### DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Activin RIB/ALK-4 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human Activin RIA, RIIA, or RIIB is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>2B</sub> Clone # 544310
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human Activin RIB/ALK-4 Ser24-Glu126 Accession # P36896
<b>Conjugate</b>	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
<b>Formulation</b>	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.  *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

#### 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
<b>Flow Cytometry</b>	0.25-1 µg/10 <sup>6</sup> cells	PC-3 human prostate cancer cell line

#### PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, 2 to 8 °C as supplied.</li> </ul>

#### 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.

# Human Activin RIB/ALK-4 Alexa Fluor® 488-conjugated Antibody

Monoclonal Mouse IgG<sub>2B</sub> Clone # 544310

Catalog Number: FAB2221G  
100 µg

## PRODUCT SPECIFIC NOTICES

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