

DESCRIPTION

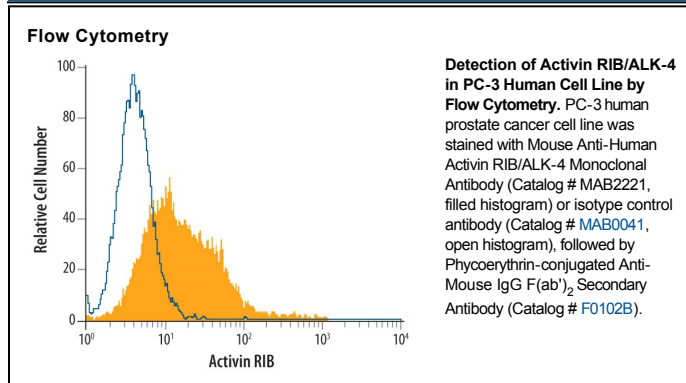
Species Reactivity	Human
Specificity	Detects human Activin RIB/ALK-4 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human Activin RIA, RIIA, or RIIB is observed.
Source	Monoclonal Mouse IgG _{2B} Clone # 544310
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Activin RIB/ALK-4 Ser24-Glu126 Accession # P36896
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 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
Flow Cytometry	2.5 µg/10 ⁶ cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA



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. *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. <ul style="list-style-type: none"> ● 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.

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.