

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human BMPR-IA/ALK-3 in direct ELISAs and Western blots. In Western blots, this antibody shows 100% cross-reactivity with recombinant mouse BMPR-IA and no cross-reactivity with recombinant human (rh) BMPR-IB or rhBMPR-II. In direct ELISAs, this antibody does not cross-react with any of these proteins.
Source	Monoclonal Mouse IgG _{2B} Clone # 87933
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human BMPR-IA/ALK-3 Met1-Arg152 Accession # CAA80257
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	Recombinant Human BMPR-IA/ALK-3 Fc Chimera (Catalog # 315-BR)

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

Cellular responses to bone morphogenetic proteins (BMPs) have been shown to be mediated by the formation of hetero-oligomeric complexes of the type I and type II serine/threonine kinase receptors. BMP receptor 1A (BMPR-1A), also known as activin receptor-like kinase (ALK)-3, is one of seven known type I serine/threonine kinases that are required for the signal transduction of TGF-β family cytokines. In contrast to the TGF-β receptor system in which the type I receptor does not bind TGF-β in the absence of the type II receptor, type I receptors involved in BMP signaling (including BMPR-IA, BMPR-IB/ALK-6, and ActR-I/ALK-2) can independently bind the various BMP family proteins in the absence of type II receptors. Recombinant soluble BMPR-IA binds BMP-4 with high-affinity in solution and is a potent BMP-4 antagonist *in vitro*. BMPR-IA is ubiquitously expressed during embryogenesis. In adult tissues, BMPR-IA mRNA is also widely distributed with the highest expression levels found in skeletal muscle. The extracellular domain of BMPR-IA shares little amino acid sequence identity with the other mammalian ALK type I receptor kinases, but the cysteine residues are conserved. Human and mouse BMPR-IA are highly conserved and share 98% sequence identity.

References:

1. Kawabata, M. *et al.* (1998) Cytokine and Growth Factor Reviews **9**:49.
2. Ebendal, T. *et al.* (1998) J. Neuroscience Research **51**:139.