

## DESCRIPTION

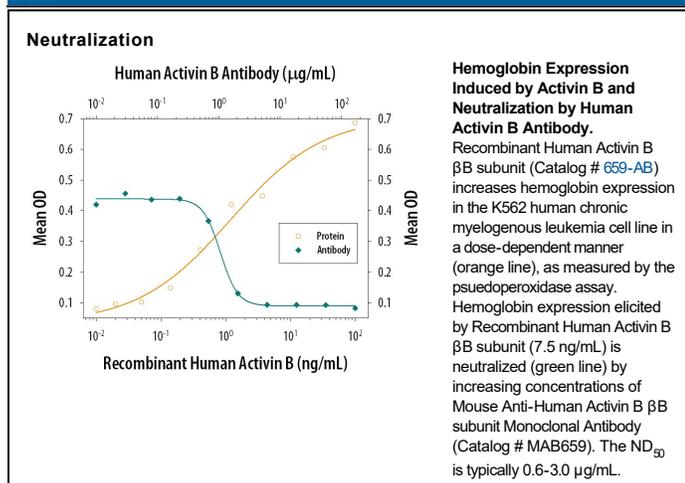
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Activin B $\beta$ B subunit in direct ELISAs and Western blots. In direct ELISAs, no cross-reactivity with recombinant human (rh) Inhibin B or rhActivin A is observed. In Western blots, approximately 20% cross-reactivity with rhInhibin B is observed and no cross-reactivity with rhActivin A or recombinant mouse Activin A is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 146807
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Chinese hamster ovary cell line CHO-derived recombinant human Activin B Gly293-Ala407 Accession # Q53T31
<b>Endotoxin Level</b>	<0.10 EU per 1 $\mu$ g of the antibody by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m 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 $\mu$ m 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
<b>Western Blot</b>	1 $\mu$ g/mL	Recombinant Human Activin B $\beta$ B subunit (Catalog # 659-AB)
<b>Neutralization</b>		Measured by its ability to neutralize Activin B-induced hemoglobin expression in the K562 human chronic myelogenous leukemia cell line. Schwall, R. H. <i>et al.</i> (1991) <i>Method Enzymol.</i> <b>198</b> :340. The Neutralization Dose (ND <sub>50</sub> ) is typically 0.6-3.0 $\mu$ g/mL in the presence of 7.5 ng/mL Recombinant Human Activin B $\beta$ B subunit.

## DATA



## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

Activins and inhibins, members of the TGF- $\beta$  superfamily, are disulfide-linked dimeric proteins that were originally purified from gonadal fluids as proteins that stimulated or inhibited, respectively, pituitary follicle stimulating hormone (FSH) release. These proteins have since been shown to have a wide range of biological activities including: mesoderm induction, neural cell differentiation, bone remodeling, hematopoiesis and reproductive physiology. Activins/inhibins are produced as precursor proteins with an amino-terminal propeptide that is cleaved to release the carboxy-terminal bioactive ligands. Activins are homodimers or heterodimers of the various  $\beta$  subunit isoforms, while inhibins are heterodimers of a unique  $\alpha$  subunit and one of the various  $\beta$  subunits. Five  $\beta$  subunits (mammalian  $\beta_A$ ,  $\beta_B$ ,  $\beta_C$ ,  $\beta_E$  and *Xenopus*  $\beta_D$ ) have been cloned. The activin/inhibin nomenclature reflects the subunit composition of the proteins: activin A ( $\beta_A$ - $\beta_A$ ), activin B ( $\beta_B$ - $\beta_B$ ), activin AB ( $\beta_A$ - $\beta_B$ ), inhibin A ( $\alpha$ - $\beta_A$ ) and inhibin B ( $\alpha$ - $\beta_B$ ). At present, little is known about the contribution of the other  $\beta$  subunits to activin or inhibin formation and biology. At the amino acid sequence level, the mature human  $\beta_B$  subunit is greater than 98% identical to mouse  $\beta_B$ , while the human and mouse  $\alpha$  subunits share approximately 80% identity. Similarly to other TGF- $\beta$  family members, activins exert their biological activities through binding to the heterodimeric complex composed of two membrane spanning serine-threonine kinases designated as type I and type II. Two forms of activin receptor type I (Act RI-A and Act RI-B) and two forms of activin receptor type II (Act RII-A and Act RII-B) have been identified. Activin binds directly to Act RII, the complex then associates with Act RI and initiates signaling. Besides activins, Act RII has been shown to bind certain other TGF- $\beta$  superfamily members. Inhibin A has been shown to bind with low-affinity to Act RII. The existence of a distinct inhibin-specific receptor and/or signal transduction pathway has been hypothesized.

**References:**

1. Woodruff, T.K. (1998) *Biochemical Pharmacology* **55**:953.
2. Ying, S.Y. *et al.* (1997) *Proc. Soc. Exp. Biol. Med.* **214**:114.