Species Reactivity: Human/Mouse/Rat

Specificity: Detects recombinant human Activin A in ELISAs. Also recognizes Activin A precursor. The amino acid sequences of mature βA subunits from human, mouse and rat are identical. Therefore, this antibody will also detect the mature βA subunit from mouse and rat.

Source: Monoclonal Mouse IgG1, Clone # 69403

Purification: Protein A or G purified from hybridoma culture supernatant

Immunogen: Chinese hamster ovary cell line CHO-derived recombinant human Activin A

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.

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.

Human/Mouse/Rat Activin A Sandwich Immunoassay

Reagent
ELISA Capture 2-8 μg/mL Human/Mouse/Rat Activin A βA subunit Antibody (Catalog # MAB3381)
ELISA Detection 0.5-2.0 μg/mL Human/Mouse/Rat Activin A βA subunit Biotinylated Antibody (Catalog # BAM3381)
Standard: Recombinant Human/Mouse/Rat Activin A (Catalog # 338-AC)
Neutralization: Measured by its ability to neutralize Activin A-induced hemoglobin expression in the K562 human chronic myelogenous leukemia cell line. The Neutralization Dose (ND50) is typically 0.02-0.06 μg/mL in the presence of 7.5 ng/mL Recombinant Human/Mouse/Rat Activin A.

DATA

Neutralization

Hemoglobin Expression Induced by Activin A and Neutralization by Human/Mouse/Rat Activin A Antibody. Recombinant Human/Mouse/Rat Activin A (7.5 ng/mL) increases hemoglobin expression in the K562 human chronic myelogenous leukemia cell line in a dose-dependent manner (orange line), as measured by the pseudoperoxidase assay. Hemoglobin Expression elicited by Recombinant Human/Mouse/Rat Activin A (7.5 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human/Mouse/Rat Activin A βA subunit Monoclonal Antibody (Catalog # MAB3381). The ND50 is typically 0.02-0.06 μg/mL.

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.

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.
Activin and Inhibin are members of the TGF-β superfamily of cytokines and are involved in a wide range of biological processes including tissue morphogenesis and repair, fibrosis, inflammation, neural development, hematopoiesis, reproductive system function, and carcinogenesis (1-7). Activin and Inhibin are produced as precursor proteins. Their amino terminal propeptides are proteolytically cleaved and facilitate formation of disulfide-linked dimers of the bioactive proteins (8, 9). Activins are nonglycosylated homodimers or heterodimers of various β subunits (βA, βB, βC, and βE in mammals), while Inhibins are heterodimers of a unique α subunit and one of the β subunits. Activin A is a widely expressed homodimer of two βA chains. The βA subunit can also heterodimerize with a βB or βC subunit to form Activin AB and Activin AC, respectively (10). The 14 kDa mature human βA chain shares 100% amino acid sequence identity with bovine, feline, mouse, porcine, and rat βA. Activin A exerts its biological activities by binding to the type 2 serine/threonine kinase Activin RIIA which then noncovalently associates with the type 1 serine/threonine kinase Activin RIB/ALK-4 (7, 11). Signaling through this receptor complex leads to Smad activation and regulation of activin-responsive gene transcription (7, 11). The bioactivity of Activin A is regulated by a variety of mechanisms (11). BAMBI, Betaglycan, and Cripto are cell-associated molecules that function as decoy receptors or limit the ability of Activin A to induce receptor complex assembly (12-14). The intracellular formation of Activin A can be prevented by the incorporation of the βA subunit into Activin AC or Inhibin A (3, 10). And the bioavailability of Activin A is restricted by its incorporation into inactive complexes with α2-Macroglobulin, Follistatin, and FLRG (15, 16).

References:

Human/Mouse/Rat Activin A βA subunit
Antibody
Monoclonal Mouse IgG1, Clone # 69403
Catalog Number: MAB3381