Recombinant Mouse Activin B  
Catalog Number: 8260-AB

DESCRIPTION
Source  Human embryonic kidney cell, HEK293-derived  
Gly297-Ala411  
Accession # Q04999

N-terminal Sequence Analysis  Gly297
Structure / Form  Disulfide-linked homodimer
Predicted Molecular Mass  13 kDa (monomer)

SPECIFICATIONS
SDS-PAGE  12 kDa, reducing conditions
The ED$_{50}$ for this effect is 0.2-1.2 ng/mL.
Endotoxin Level  <0.10 EU per 1 μg of the protein by the LAL method.
Purity  >95%, by SDS-PAGE with silver staining.
Formulation  Lyophilized from a 0.2 μm filtered solution in HCl with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE
Reconstitution  Reconstitute at 100 μg/mL in sterile 4 mM HCl.
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.
  - 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA
Bioactivity  Recombinant Mouse Activin B (Catalog # 8260-AB) induces hemoglobin expression in K562 human chronic myelogenous leukemia cells. The ED$_{50}$ for this effect is 0.2-1.2 ng/mL.

SDS-PAGE  1 μg/lane of Recombinant Mouse Activin B was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining, showing bands at 12 and 21 kDa, respectively.
Activin and Inhibin, members of the TGF-β superfamily of cytokines, are involved in a range of biological processes including neural development, stem cell differentiation, reproductive physiology, inflammation, tissue morphogenesis and bone remodeling (1-5). Activins function as either a homodimer or heterodimer of non-glycosylated β subunit proteins (βA, βB, βC, and βE in mammals). Inhibins are heterodimers consisting of a unique α subunit and any one β subunit. The α- and β-subunits are produced as precursor proteins with an amino-terminal propeptide that is cleaved to release a carboxy-terminal monomeric subunit that becomes bioactive upon disulfide linkage with another Activin monomer (6, 7). The bioactive Activin B dimeric protein consists of two βB subunits. The 13 kDa mature mouse Activin βB subunit shares 99% and 98% amino acid sequence identity with rat and human Activin βB, respectively. Activin B exerts its biological function upon binding to the type 2 serine/threonine kinase Activin receptor (ActRIIA). This receptor-ligand complex noncovalently associates and transphosphorylates the type 1 Activin receptor (ActRI) to initiate intracellular SMAD activation and the subsequent regulation of Activin-responsive gene transcription (8). BAMBI, Betaglycan, and Cripto, regulate the bioactivity of Activin B by restricting its ability to induce receptor complex assembly. Alternatively, bioavailability of Activin B is modulated through sequestration into inactive complexes with α2-Macroglobulin, Follistatin, and FLRG (9-12).

References: