Recombinant Mouse Activin RIIB Fc Chimera

Catalog Number: 3725-RB

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived

Mouse Activin RIIB (Ser19-Thr134) Accession # P27040	IEGRMDP	Mouse IgG_{2A} (Glu98-Lys330)
N-terminus		C-terminus

N-terminal Sequence Analysis	Ser19
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	40.5 kDa (monomer)

SPECIFICATIONS

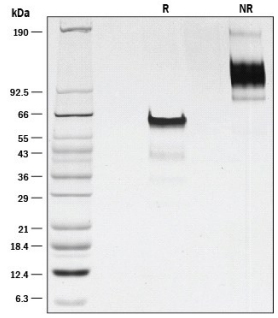
SDS-PAGE	61-63 kDa, reducing conditions
Activity	Measured by its ability to inhibit Activin A-induced hemoglobin expression in K562 human chronic myelogenous leukemia cells. Schwall, R.H. *et al*. (1991) Method Enzymol. **198**:340. The ED_{50} for this effect is typically 5-30 ng/mL in the presence of 3 ng/mL of recombinant human Activin A.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/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. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

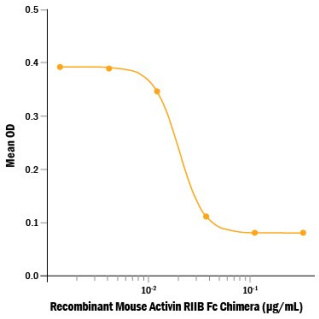
DATA

SDS-PAGE



1 µg/lane of Recombinant Mouse Activin RIIB Fc Chimera was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining, showing bands at 63 kDa and 110 kDa, respectively.

Bioactivity



Recombinant Mouse Activin RIIB Fc Chimera (Catalog # 3725-RB) inhibits Activin A-induced hemoglobin expression in the K562 human chronic myelogenous leukemia cell line. The ED_{50} for this effect is typically 5-30 ng/mL in the presence of 3 ng/mL of Recombinant Human/Mouse/Rat Activin A (Catalog # 338-AC).

bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956

Recombinant Mouse Activin RIIB Fc Chimera

Catalog Number: 3725-RB

BACKGROUND

Activin molecules and other members of the TGF-β superfamily exert their biological effects through heteromeric complexes of type I and a type II serine/threonine kinase receptors (1, 2). Ligands bind to the type II receptor (such as ActRIIB) which then associates with a type I receptor to initiate signal transduction (3, 4). The mature mouse ActRIIB consists of a 119 amino acid (aa) extracellular domain, a 21 aa transmembrane segment, and a 378 aa cytoplasmic region that includes the kinase domain and a C-terminal PDZ-binding motif (5). ActRIIB exists in four alternately spliced forms that are distinguished by the deletion of juxtamembrane stretches in the extra and/or intracellular regions (5). Particular activin isoforms bind with different high affinities to the various type II receptor isoforms (5). Within the ECD, mouse ActRIIB shares 99% aa sequence identity with human and rat ActRIIB. It shares 53% aa sequence identity with ActRIIA. Besides the activin isoforms, ActR-II will also bind inhibin, BMP-2, and BMP-7 with lower affinities. ActRIIB mediated signaling can be modulated by several accessory proteins. Interactions with the GPI linked RGM-A/DRAGON lower the threshold for BMP-2 and BMP-4 induced signaling (6). ActRIIB forms a ternary complex with activin A and cripto which prevents association with the type I receptor ActRIB, thereby interfering with activin induced signaling (7). ActRIIB can also form a ternary complex with activin A and endoglin (8). The C-terminal tail of ActRIIB specifically binds the PDZ domain of the cytoplasmic protein ARIP2 which enhances receptor internalization and hinders activin induced responses (9). Although three variants of ARIP2 have been identified, only the full length isoform modulates ActRII internalization (10).

References:

1. Welt, C. *et al.* (2002) Exp. Biol. Med. **227**:724.
2. Chen, Y.-C., *et al.* (2006) Exp. Biol. Med. **231**:534.
3. Attisano, L. *et al.* (1996) Mol. Cell Biol. **16**:1066.
4. Allendorph, G.P. *et al.* (2006) Proc. Natl. Acad. Sci. **103**:7643.
5. Attisano, L. *et al.* (1992) Cell **68**:97.
6. Samad, T.A. *et al.* (2005) J. Biol. Chem. **280**:14122.
7. Gray, P.C. *et al.* (2003) Proc. Natl. Acad. Sci. **100**:5193.
8. Barbara, N.P. *et al.* (1999) J. Biol. Chem. **274**:584.
9. Matsuzaki, T. *et al.* (2002) J. Biol. Chem. **277**:19008.
10. Liu, Z.H. *et al.* (2006) J. Endocrinol. **189**:409.

bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956