ACVR2B Protein, Cynomolgus (HEK293)

Cat. No.:	HY-P77290
Synonyms:	Activin receptor type-2B; Activin receptor type IIB; ACTR-IIB; ACVR2B
Species:	Cynomolgus
Source:	HEK293
Accession:	EHH16502 (S28-M143)
Gene ID:	/
Molecular Weight:	Approximately 34 kDa

PROPERTIES

Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

Activin receptor type-2B (ACVR2B), also known as ActR-IIB and MGC116908, is an activin type II receptor. Type I receptors are essential for signaling; and type II receptors are required for binding ligands and for expression of type I receptors[1].
The sequence of amino acids in ACVR2B proteins from different species is very stable, which leads to the conclusion that in the process of evolution, ACVR2B has been only slightly altered, and that both in humans and in animals, its function is similar.
Activins and growth differentiation factors (GDF) bind to ACVR2B, which in turn activate type I receptors such as activin receptor-like kinases (ALK) ALK4 and ALK5, activating downstream molecule SMAD2/3. SMADSs regulate a number of myogenic genes, such as myoD, myogenin, and Myf5, that are involved in cellular hypertrophy, proliferation, or differentiation. Noncanonical ACVR2B pathways have also been shown to regulate MAP kinases. ACVR2B blocks signaling of myostatin, its close homolog GDF11, as well as activin A, activin B, and BMP10[1]. Activin A primarily binds to the type 1 receptors ALK4 or ALK7 in complex with ACVR2A or ACVR2B, causing activation of SMAD2 or SMAD3[2].
In myeloma cells, BMP-6- and BMP-9-induced activation of SMAD1/5/8 through ACVR2A/ACVR2B/ALK2 is inhibited by activin A treatment[2]. ACVR2B has been shown to preserve muscle mass and prolong survival in tumor hosts, and to increase bone

mass in models of osteogenesis imperfecta and muscular dystrophy[3].

REFERENCES

[1]. Johanna Magga, et al. Systemic Blockade of ACVR2B Ligands Protects Myocardium from Acute Ischemia-Reperfusion Injury. Mol Ther. 2019 Mar 6;27(3):600-610.

[2]. Oddrun Elise Olsen, et al. Activin A inhibits BMP-signaling by binding ACVR2A and ACVR2B. Cell Commun Signal. 2015 Jun 6;13:27.

[3]. Rafael Barreto, et al. ACVR2B/Fc counteracts chemotherapy-induced loss of muscle and bone mass. Sci Rep. 2017 Oct 31;7(1):14470.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA