

ACVR2A/Activin RIIA Protein, Human (HEK293, C-His)

Cat. No.:	HY-P7455A
Synonyms:	rHuActivin receptor type 2A, His; ACVR-2A; Activin receptor type 2A
Species:	Human
Source:	HEK293
Accession:	P27037 (A20-P134)
Gene ID:	92
Molecular Weight:	Approximately 24-37 kDa

PROPERTIES

AA Sequence	<p>A I L G R S E T Q E C L F F N A N W E K D R T N Q T G V E P C Y G D K D K R R H</p> <p>C F A T W K N I S G S I E I V K Q G C W L D D I N C Y D R T D C V E K K D S P E</p> <p>V Y F C C C E G N M C N E K F S Y F P E M E V T Q P T S N P V T P K P H H H H H</p> <p>H</p>
Biological Activity	Measured by its ability to neutralize Activin A inhibitory effect of murine MPC-11 cells. The ED ₅₀ this effect is 0.0487 µg/mL in the presence of 7.5 ng/mL Activin A, corresponding to a specific activity is 2.05×10 ⁴ units/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.22 µm filtered solution of 20 mM PB, 150 mM NaCl, 1 mM DTT, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
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	<p>ACVR2A is a type II member of the TGF-β family of receptor Serine/Threonine kinases. ACVR2A is a receptor for Activin A, Activin B and Inhibin A^{[1][2]}.</p> <p>The sequence of amino acids in ACVR2A proteins from different species is very stable, which leads to the conclusion that in the process of evolution, ACVR2A has been only slightly altered, and that both in humans and in animals, its function is similar.</p>
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Signaling by activins and BMPs is highly promiscuous, since apart from signaling through ALK4/7, the activin type II receptors (ACVR2A and 2B) can interact also with several type I BMP receptors (ALK1/2/3/6), which can also form complexes with the type II BMP receptor, BMPRII. Type II receptors phosphorylate and activate type I receptors which autophosphorylate, then bind and activate SMAD transcriptional regulators. ACVR2A can form complexes with different type I receptors that signal either to Smad2/3 (ALK4) or to Smad1/5/8 (ALK2, ALK3, ALK6). The different type I receptors compete for binding to ACVR2A and that this competition provides a mechanism that balances signaling between Activin A-mediated, ALK4-dependent Smad2/3 signaling, and BMP-mediated ALK2 or ALK3-dependent signaling to Smad1/5/8. In myeloma cells, BMP-6- and BMP-9-induced activation of SMAD1/5/8 through ACVR2A/ACVR2B/ALK2 is inhibited by activin A treatment^{[1][3]}.

Caution: Product has not been fully validated for medical applications. For research use only.

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