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ACVR2A Human

Actv Receptor Type 2A Human Recombinant
GRF0010

Product Overview

Name	ACVR2A Human
Description	
Actv Receptor Type 2A Human Recombinant	
Accession (Primary)	P27037
Synonyms	
Activin A Receptor Type II-Like 1, ACVRLK1, ALK1, TGF-B Superfamily Receptor Type I EC 2.7.11.30, TSR-I, ALK-1, HHT2, SKR3 Serine/Threonine-Protein Kinase Receptor R3 Activin A Receptor, Type II-Like Kinase 1, Activin Receptor-Like Kinase 1, EC 2.7.11, ORW2, HHT.	
Source	
Sf9, Insect cells.	
Physical Appearance	
Sterile filtered colorless solution.	
Formulation	
ACVRL1 protein solution (0.25mg/ml) contains phosphate buffered saline (pH7.4) and 10% glycerol.	
Stability	
Store at 4°C if entire vial will be used within 2-4 weeks. Store, frozen at -20°C for longer periods of time. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Avoid multiple freeze-thaw cycles.	
Purity	
Greater than 95.0% as determined by SDS-PAGE.	
Amino acid sequence	
DPVKPSRGPL VTCTCESPHC KGPTCRGAWC TVVLVREEGR HPQEHRGCGN LHRELCRGRP TEFVNHYCCD SHLCNHNVSL VLEATQPPSE QPGTDGQ HHH HHH.	
Background	
The Physiological Implications and Therapeutic Potential of Activin A Receptor Type II-Like 1 Human Recombinant 1. Abstract This research paper investigates the Activin A Receptor Type II-Like 1 Human Recombinant (ACVRL1), a significant protein involved in the TGF-beta superfamily signaling pathway. We provide an extensive understanding of ACVRL1's structure, signaling mechanism, biological functions, and implications in disease pathology. Additionally, we explore the therapeutic potential of ACVRL1 in various pathological conditions. 2. Introduction ACVRL1, also	

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known as ALK1, plays an essential role in the TGF-beta signaling pathway, which has implications in cellular proliferation, differentiation, and apoptosis. Understanding ACVRL1 and its signaling mechanisms could provide insights into its potential therapeutic applications in various diseases. 3. Structure and Signaling of ACVRL1 ACVRL1 is a type I receptor protein involved in the TGF-beta signaling pathway. It is a transmembrane protein that consists of a ligand-binding extracellular domain and an intracellular domain responsible for signal transduction. Binding of ligands to ACVRL1 triggers phosphorylation events that activate downstream signaling pathways. 4. Biological Functions of ACVRL1 ACVRL1 plays pivotal roles in multiple biological processes, including vascular development, angiogenesis, and maintenance of vascular integrity. It is known to influence cellular processes such as proliferation, differentiation, and apoptosis, thereby implicating it in organogenesis and homeostasis. 5. ACVRL1 in Disease Pathology Mutations in the ACVRL1 gene have been associated with hereditary hemorrhagic telangiectasia (HHT), a genetic disorder characterized by abnormal blood vessel formation. This link underscores the critical role of ACVRL1 in vascular biology and disease. 6. Therapeutic Potential of ACVRL1 Given its crucial role in vascular biology and its link to HHT, ACVRL1 presents a promising target for therapeutic interventions. Modulation of ACVRL1 signaling could potentially provide treatment options for pathological conditions related to abnormal blood vessel formation and function. 7. Conclusion and Future Perspectives Our understanding of ACVRL1 and its functions has grown significantly in recent years, but there is much yet to be discovered. Continued research into ACVRL1's precise molecular mechanisms and its roles in disease will undoubtedly open new doors for therapeutic development.

Precautions

ACVR2A Human is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (P27037)

Background

A Comprehensive Examination of the Activin Receptor Type 2A Human Recombinant: Biological Functions and Therapeutic Possibilities 1. Abstract This paper delves into the complex world of Activin Receptor Type 2A Human Recombinant (ACVR2A), a crucial element of the Transforming Growth Factor-beta (TGF-beta) signaling pathway. The structure, biological implications, and signaling pathway of ACVR2A are all extensively reviewed. The potential for ACVR2A as a therapeutic target in various pathological conditions is also explored. 2. Introduction The ACVR2A, a receptor protein vital to the TGF-beta signaling pathway, plays a significant role in a multitude of biological processes, including embryogenesis, cell differentiation, and homeostasis. Understanding the intricate operations of ACVR2A could open the door to innovative therapeutic strategies. 3. Structure and Signaling of ACVR2A As a transmembrane

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serine/threonine kinase receptor, ACVR2A is characterized by a ligand-binding extracellular domain and an intracellular domain responsible for signal transduction. Upon binding of specific ligands like activin, ACVR2A interacts with type I receptors to trigger phosphorylation events, leading to the activation of downstream SMAD signaling pathways. 4. Biological Functions of ACVR2A ACVR2A plays a substantial role in a wide range of biological processes. These include embryonic development, cell differentiation, bone growth, immune responses, and homeostasis. Furthermore, ACVR2A is instrumental in follicle-stimulating hormone (FSH) regulation, highlighting its importance in reproduction. 5. ACVR2A in Disease Pathology Impairments in ACVR2A signaling have been linked to several diseases, including various cancers and reproductive disorders. Mutations in the ACVR2A gene have been implicated in tumor progression, underscoring the receptor's role in cell proliferation and differentiation. 6. Therapeutic Potential of ACVR2A The centrality of ACVR2A in critical biological processes and disease pathology suggests its therapeutic potential. By modulating ACVR2A signaling, it may be possible to intervene in diseases characterized by aberrant TGF-beta signaling. Additionally, ACVR2A antagonists are being studied for their potential in cancer treatment. 7. Conclusion and Future Perspectives Our comprehension of ACVR2A's functions has substantially increased in recent years, yet much remains to be discovered. Further research into ACVR2A's precise molecular mechanisms and involvement in disease will undoubtedly yield new therapeutic strategies.