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# ACVR2A Human

*Actv Receptor Type 2A Human Recombinant*

GRF0010

## Product Overview

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|---|---|
| **Name** | ACVR2A Human |
| **Catalog #** | GRF0010 |
| **Accession(Primary)** | P27037 |
| **Description** | Actv Receptor Type 2A Human Recombinant |
| **Precautions** | |

## Target information(P27037)

**Synonyms**

**Gene ID**

**Other Names**

**Function**

**Cellular location**

**Note**

### *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.