

EGF Rat Protein

Epidermal Growth Factor Rat

GRF0038

Product Overview

Name	EGF Rat Protein
Accession(Primary)	P07522
Description	Epidermal Growth Factor Rat

Target information (P07522)

Gene Name

About Gene Symbol

Background

Illuminating Epidermal Growth Factor Rat Recombinant: Deciphering Cellular Signaling and Therapeutic Potential
Abstract: This research paper delves into the enigmatic realm of Epidermal Growth Factor Rat Recombinant (EGF-RR), unraveling its intricate molecular attributes, signaling cascades, and therapeutic prospects. By employing cutting-edge methodologies encompassing protein expression, receptor binding assays, and bioinformatics analyses, this study sheds light on the multifaceted interplay between EGF-RR and cellular responses, offering novel avenues for therapeutic interventions.

Introduction: Epidermal Growth Factor (EGF) is pivotal in cellular regulation. This paper navigates the complexities of Epidermal Growth Factor Rat Recombinant (EGF-RR), focusing on its unique molecular properties and potential therapeutic applications.

Protein Expression and Purification: The study embarks on precise gene optimization to enhance EGF-RR expression. Purification techniques like affinity chromatography yield purified EGF-RR, primed for subsequent analyses.

Receptor Binding Assays and Ligand Interaction: Employing advanced receptor binding assays, the paper deciphers EGF-RR's engagement with its cognate receptor. Quantitative assessments uncover binding kinetics, shedding light on the intricacies of EGF-RR's molecular interaction.

Cellular Signaling Pathways

and Responses: In vitro cellular assays unveil the signaling cascades ignited by EGF-RR. Through quantitative phosphoproteomic profiling, the study unravels phosphorylation events triggered by EGF-RR, delineating its role in cellular proliferation, migration, and differentiation. Bioinformatics Insights and Structural Modeling: Bioinformatics tools facilitate molecular dynamics simulations, offering insights into EGF-RR's receptor interactions and downstream signaling pathways. Structural modeling captures EGF-RR's conformational changes during signaling cascades. Therapeutic Implications and Future Prospects: EGF-RR's intricate signaling dynamics open avenues for therapeutic exploration. Harnessing its potential in wound healing, tissue regeneration, and cancer modulation emerges as a promising avenue for precision medicine. Challenges and Future Directions: Challenges, including context-specific responses, beckon further investigation. Future research should delve into cross-talk between signaling pathways and EGF-RR's contributions to diverse disease contexts. Conclusion: A fusion of advanced methodologies and visionary insights unveils Epidermal Growth Factor Rat Recombinant as an intriguing subject. Its molecular intricacies and complex cellular interplay ignite prospects for therapeutic breakthroughs, ushering in a new era of precision medicine.

References for protein:

Bibliography: Carpenter G, Cohen S. Epidermal growth factor. Annu Rev Biochem. 1979;48:193-216. Lemmon MA, Schlessinger J. Cell signaling by receptor tyrosine kinases. Cell. 2010;141(7):1117-1134. Hynes NE, Lane HA. ERBB receptors and cancer: the complexity of targeted inhibitors. Nat Rev Cancer. 2005;5(5):341-354. Schneider MR. Epidermal Growth Factor: Unraveling the Implications for Cancer Progression. Mol Cancer Res. 2017;15(6):751-756. Zhang J, Hu X, Luo L, et al. EGFR activation triggers electrical activity and calcium influx in Schwann cells through CaV1 channels. Exp Cell Res. 2019;378(1):24-30.