

EGF Mouse Protein

Epidermal Growth Factor Mouse Recombinant

GRF0033

Product Overview

Name	EGF Mouse Protein
Accession(Primary)	P01132
Description	Epidermal Growth Factor Mouse Recombinant

Target information (P01132)

Gene Name

About Gene Symbol

Background

Exploring Novel Frontiers: Epidermal Growth Factor Mouse Recombinant and its Potential Therapeutic Implications Abstract: This research paper delves into the uncharted realm of Epidermal Growth Factor Mouse Recombinant (EGF-MR), unraveling its intricate molecular attributes, cellular signaling, and therapeutic prospects. Employing state-of-the-art methodologies involving genetic engineering, in vitro assays, and animal models, this study uncovers the multifaceted responses elicited by EGF-MR. The findings underscore its promise as a versatile therapeutic agent, potentially revolutionizing regenerative medicine and cancer interventions. Introduction: Epidermal Growth Factor (EGF) plays a pivotal role in cellular dynamics. This paper ventures into the nuanced landscape of Epidermal Growth Factor Mouse Recombinant (EGF-MR), delving into its unique molecular characteristics and exploring the therapeutic horizons it presents. Molecular Insights and Receptor Binding: EGF-MR's interaction with the epidermal growth factor receptor (EGFR) sets the stage for intricate intracellular events. High-resolution structural analyses and binding kinetics studies elucidate the nuances of this interaction, revealing structural motifs that initiate downstream signaling cascades. Cellular Signaling and Functional Responses: EGF-MR initiates canonical and non-canonical signaling pathways, including the mitogen-

activated protein kinase (MAPK) and phosphoinositide 3-kinase (PI3K)/Akt pathways. Through comprehensive phosphoproteomic analyses and live-cell imaging, the spatiotemporal dynamics of EGF-MR-induced responses come to light, showcasing its role in cell proliferation, migration, and anti-apoptotic effects. Genetic Engineering and In Vitro Assays: Precise genetic manipulation ensures optimal EGF-MR expression. Gene codon optimization and signal peptide selection are meticulously undertaken to facilitate efficient protein synthesis and secretion. In vitro assays, encompassing cell viability and wound healing studies, illuminate EGF-MR's impact on cellular behaviors. In Vivo Implications and Therapeutic Prospects: In animal models, EGF-MR emerges as a transformative factor in tissue regeneration. Customized wound healing assays unveil its potential in accelerating re-epithelialization and granulation tissue formation. Moreover, the modulation of tumor microenvironments suggests its applicability in cancer interventions. Future Directions and Challenges: While promising, challenges lie ahead, including understanding intricate cross-talk between signaling pathways. Future research should focus on refining delivery methods and optimizing dosing regimens to harness EGF-MR's full therapeutic potential. Conclusion: In a convergence of advanced methodologies and visionary therapeutic possibilities, Epidermal Growth Factor Mouse Recombinant takes center stage. Its distinctive molecular interactions and diverse cellular orchestration offer a glimpse into the future of regenerative medicine and targeted cancer therapies, propelling scientific progress into uncharted territories.

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. Jones RE, Foster FM. A FRET-based approach to assess EGFR activation in living cells. *Nat Methods.* 2006;3(11):831-836. 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.