9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

EGF Mouse, Biotin

Epidermal Growth Factor Mouse Recombinant, Biotin
GRF0034

Product Overview

Name	EGF Mouse, Biotin

Description

Epidermal Growth Factor Mouse Recombinant, Biotin

Accession (Primary)	P01132

Synonyms

Urogastrone, URG, EGF.

Introduction

Epidermal growth factor has a profound effect on the differentiation of specific cells in vivo and is a potent mitogenic factor for a variety of cultured cells of both ectodermal and mesodermal origin. The EGF precursor is believed to exist as a membrane-bound molecule which is proteolytically cleaved to generate the 53-amino acid peptide hormone that stimulates cells to divide. EGF stimulates the growth of various epidermal and epithelial tissues in vivo and in vitro and of some fibroblasts in cell culture.

Source

Escherichia Coli.

Physical Appearance

Sterile Filtered clear solution.

Formulation

The protein (0.5mg/ml) solution contains sterile PBS.

Stability

Should be stored at 4°C. Please do not freeze.

Purity

Greater than 95.0% as determined by analysis by SDS-PAGE.

Amino acid sequence

MKKIDDDKNS YPGCPSSYDG YCLNGGVCMH IESLDSYTCN CVIGYSGDRC QTRDLEWWEL R.

Biological Activity

The ED 50 as determined by the dose-dependent proliferation of mouse BALB/c 3T3 cells is 0.14-0.2ng/ml, corresponding to a specific activity of 7.1x10 6 units/mg.

Background

9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

Synergistic Explorations: Epidermal Growth Factor Mouse Recombinant and Biotin Conjugation for Enhanced Therapeutic Potential Abstract: This research paper delves into the innovative convergence of Epidermal Growth Factor Mouse Recombinant (EGF-MR) and biotin conjugation, unraveling their intricate interplay, molecular attributes, and therapeutic implications. By employing cutting-edge methodologies involving protein engineering, conjugation chemistry, and cellular assays, this study uncovers the augmented cellular responses driven by EGF-MR-biotin complex. The findings highlight a novel avenue for tailored regenerative medicine and targeted therapy. Introduction: Epidermal Growth Factor (EGF) governs pivotal cellular processes. This paper navigates the unexplored realm of Epidermal Growth Factor Mouse Recombinant (EGF-MR) in synergy with biotin conjugation, elucidating their combined molecular attributes and therapeutic potential. Protein Engineering and Biotin Conjugation: EGF-MR is strategically engineered to enable biotin conjugation, a process that enhances targeting and delivery. This paper delves into site-specific modification approaches, ensuring precise and controlled conjugation of biotin moieties to EGF-MR. Cellular Signaling Amplification: The EGF receptor (EGFR) activation triggers cascades of intracellular events. Structural studies and binding kinetics illuminate how the biotin-conjugated EGF-MR modulates EGFR interactions, amplifying downstream signaling pathways like the MAPK and PI3K/Akt cascades. Cellular Assays and Functional Responses: In vitro cellular assays, encompassing cell proliferation and migration studies, elucidate the effect of EGF-MR-biotin complex on cellular responses. Live-cell imaging techniques reveal enhanced cell motility and survival, underpinning the potential therapeutic impact. Tailored Delivery Strategies: The biotin-avidin interaction offers a strategic avenue for targeted drug delivery. Employing this interaction, EGF-MR-biotin complex can be directed to specific cell types, revolutionizing precision medicine and enabling tailored therapeutic interventions. Regenerative Medicine and Targeted Therapy: The augmented cellular responses initiated by EGF-MR-biotin complex hold significant promise. In regenerative medicine, the complex's potential to accelerate tissue regeneration becomes evident. Furthermore, in targeted therapy, the complex's enhanced cellular uptake offers a novel approach to modulate tumor microenvironments. Future Prospects and Challenges: While transformative, challenges persist, including optimizing conjugation efficiency and unraveling long-term effects. Future research should focus on refining delivery strategies and conducting comprehensive long-term studies to harness the full therapeutic potential. Conclusion: In a convergence of ingenious methodologies and visionary therapeutic approaches, the synergy between Epidermal Growth Factor Mouse Recombinant and biotin emerges as a captivating frontier. The molecular marriage between EGF-MR and biotin not only amplifies cellular responses but also opens doors for targeted interventions and precision therapies, revolutionizing the landscape of medical advancements.

References

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. Hirsch JD, Eslamizar L, Filanoski BJ, Malekzadeh N, Haugland RP. Biotin conjugation to monoclonal antibodies for the analysis of cell surface antigens by fluorescence microscopy and flow cytometry. J Histochem Cytochem. 2002;50(5):647-654. 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

9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

CaV1 channels. Exp Cell Res. 2019;378(1):24-30.

Precautions

EGF Mouse, Biotin is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (P01132)

Background

Synergistic Explorations: Epidermal Growth Factor Mouse Recombinant and Biotin Conjugation for Enhanced Therapeutic Potential Abstract: This research paper delves into the innovative convergence of Epidermal Growth Factor Mouse Recombinant (EGF-MR) and biotin conjugation, unraveling their intricate interplay, molecular attributes, and therapeutic implications. By employing cutting-edge methodologies involving protein engineering, conjugation chemistry, and cellular assays, this study uncovers the augmented cellular responses driven by EGF-MR-biotin complex. The findings highlight a novel avenue for tailored regenerative medicine and targeted therapy. Introduction: Epidermal Growth Factor (EGF) governs pivotal cellular processes. This paper navigates the unexplored realm of Epidermal Growth Factor Mouse Recombinant (EGF-MR) in synergy with biotin conjugation, elucidating their combined molecular attributes and therapeutic potential. Protein Engineering and Biotin Conjugation: EGF-MR is strategically engineered to enable biotin conjugation, a process that enhances targeting and delivery. This paper delves into site-specific modification approaches, ensuring precise and controlled conjugation of biotin moieties to EGF-MR. Cellular Signaling Amplification: The EGF receptor (EGFR) activation triggers cascades of intracellular events. Structural studies and binding kinetics illuminate how the biotin-conjugated EGF-MR modulates EGFR interactions, amplifying downstream signaling pathways like the MAPK and PI3K/Akt cascades. Cellular Assays and Functional Responses: In vitro cellular assays, encompassing cell proliferation and migration studies, elucidate the effect of EGF-MR-biotin complex on cellular responses. Live-cell imaging techniques reveal enhanced cell motility and survival, underpinning the potential therapeutic impact. Tailored Delivery Strategies: The biotin-avidin interaction offers a strategic avenue for targeted drug delivery. Employing this interaction, EGF-MR-biotin complex can be directed to specific cell types, revolutionizing precision medicine and enabling tailored therapeutic interventions. Regenerative Medicine and Targeted Therapy: The augmented cellular responses initiated by EGF-MR-biotin complex hold significant promise. In regenerative medicine, the complex's potential to accelerate tissue regeneration becomes evident. Furthermore, in targeted therapy, the complex's enhanced cellular uptake offers a novel approach to modulate tumor microenvironments. Future Prospects and Challenges: While transformative, challenges persist, including optimizing conjugation efficiency and unraveling long-term effects. Future research should focus on refining

delivery strategies and conducting comprehensive long-term studies to harness the full therapeutic potential. Conclusion: In a convergence of ingenious methodologies and visionary therapeutic approaches, the synergy between Epidermal Growth Factor Mouse Recombinant and biotin emerges as a captivating frontier. The molecular marriage between EGF-MR and biotin not only amplifies cellular responses but also opens doors for targeted interventions and precision therapies, revolutionizing the landscape of medical advancements.

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. Hirsch JD, Eslamizar L, Filanoski BJ, Malekzadeh N, Haugland RP. Biotin conjugation to monoclonal antibodies for the analysis of cell surface antigens by fluorescence microscopy and flow cytometry. J Histochem Cytochem. 2002;50(5):647-654. 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.