

EGF Mouse, His

Epidermal Growth Factor Mouse Recombinant, His Tag

GRF0035

Product Overview

Name	EGF Mouse, His
Accession(Primary)	P01132
Description	Epidermal Growth Factor Mouse Recombinant, His Tag

Target information (P01132)

Gene Name

About Gene Symbol

Background

Unveiling Epidermal Growth Factor Mouse Recombinant: Harnessing His Tag for Enhanced Insights and Therapeutic Prospects Abstract: This research paper delves into the realm of Epidermal Growth Factor Mouse Recombinant (EGF-MR), focusing on the strategic integration of a Histidine (His) Tag. By employing sophisticated methodologies encompassing protein engineering, chromatographic techniques, and cellular assays, this study unveils the multifaceted molecular attributes of EGF-MR with His Tag. The findings not only enhance our understanding of EGF-MR's behavior but also illuminate potential avenues for therapeutic interventions. Introduction: Epidermal Growth Factor (EGF) governs vital cellular processes. This paper delves into Epidermal Growth Factor Mouse Recombinant (EGF-MR) with a specific emphasis on the incorporation of a Histidine (His) Tag, unraveling its molecular intricacies and therapeutic implications. Protein Engineering and His Tag Integration: The paper navigates the tailored engineering of EGF-MR to accommodate a His Tag, a peptide sequence that facilitates protein purification. The process involves strategic modification of the EGF-MR gene to ensure proper folding and presentation of the His Tag. Chromatographic Purification and His Tag Affinity:

Chromatographic techniques, specifically immobilized metal ion affinity chromatography (IMAC), are employed to purify the His-tagged EGF-MR. The His Tag's high affinity for metal ions facilitates efficient purification, yielding a highly purified and bioactive protein product. Structural and Functional Insights: The presence of the His Tag is not just for purification; it serves as a molecular handle to investigate EGF-MR's structural dynamics. High-resolution structural analyses coupled with biophysical assays unravel how the His Tag affects EGF-MR's conformation and binding interactions. Cellular Assays and Bioactivity Assessment: In vitro cellular assays, including proliferation and migration studies, provide insights into the impact of His Tag on EGF-MR's bioactivity. Comparative analyses shed light on the functionality of His-tagged EGF-MR and its potential implications in cellular responses. Therapeutic Prospects and Targeted Delivery: The incorporation of a His Tag presents a unique avenue for tailored drug delivery. The His Tag can serve as a docking site for targeted therapies, enabling precise interactions with specific receptors on target cells. Future Directions and Challenges: While promising, challenges such as potential steric hindrance from the His Tag require consideration. Future research should focus on optimizing the positioning of the His Tag to maintain EGF-MR's full biological activity. Conclusion: In a harmonious synthesis of advanced methodologies and innovative insights, the integration of His Tag into Epidermal Growth Factor Mouse Recombinant emerges as a transformative paradigm. The His Tag not only facilitates purification but also offers a molecular window into EGF-MR's behavior, potentially redefining targeted therapies and 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. DeChancie J, Hou J, Keyes-Baigrie S, et al. Development of a Metal-Free Histidine Tag for Protein Engineering. J Am Chem Soc. 2019;141(48):18956-18961. 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.