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Produktinformation

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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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PRODUCT INFORMATION

GLP-1R (human, recombinant; aa 24-145) (Fc-tagged)

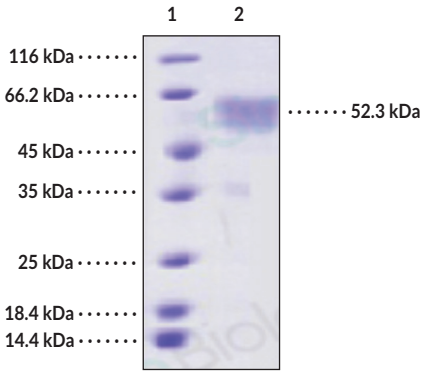
Item No. 40466

Overview and Properties

Synonyms: GLP-1 Receptor, GLP-1-R, GLP1R, Glucagon-like Peptide 1 Receptor
Source: Recombinant C-terminal human IgG1 Fc-tagged GLP-1R expressed in HEK293 cells
Amino Acids: 24-145
Uniprot No.: P43220
Molecular Weight: 41 kDa
Storage: -80°C (as supplied)
Stability: ≥1 year
Purity: ≥95% estimated by SDS-PAGE
Supplied in: Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing: <1.0 EU/µg, determined by the LAL endotoxin assay

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: GLP-1R

SDS-PAGE Analysis of GLP-1R. This protein has a calculated molecular weight of 41 kDa. It has an apparent molecular weight of approximately 52.3 kDa by SDS-PAGE under reducing conditions due to glycosylation.

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PRODUCT INFORMATION

Description

Glucagon-like peptide 1 receptor (GLP-1R) is a transmembrane G protein-coupled receptor (GPCR) and a member of the secretin family of receptors.[1] It is composed of extracellular and transmembrane domains responsible for ligand binding and an intracellular domain responsible for signaling.[1,2] It is primarily expressed in β-cells of the pancreas but also in adipocytes and pancreatic acinar cells, as well as the brain, kidney, stomach, and heart.[3] When glucose levels are high, the incretin hormone GLP-1 binds to GLP-1R, which couples to $G\alpha_s$ and induces signaling through the cAMP/PKA pathway to stimulate insulin biosynthesis, potentiate insulin secretion, reduce glucagon secretion, and slow gastrointestinal mobility to increase satiety.[1,3] GLP-1R can couple to either $G\alpha_s$, $G\alpha_{i/o}$, or $G\alpha_q$ and recruit β-arrestin to varying degrees in response to different agonists, a phenomenon known as biased agonism, with lower β-arrestin recruitment following activation by agonists with improved antidiabetic effects. Loss-of-function mutations in *GLP1R* are associated with reduced insulin secretion, which can be rescued *in vitro* with certain GLP-1R agonists and positive allosteric modulators (PAMs).[4] *GLP1R* variants that impair cell surface expression of GLP-1R are associated with impaired glucose control, as well as increased adiposity, body mass index, and glycated hemoglobin A1c (Hb1Ac). Cayman's GLP-1R (human, recombinant; aa 24-145) (Fc-tagged) protein is a disulfide-linked homodimer. The reduced monomer, composed of GLP-1R (24-145) fused to human IgG1 Fc at its C-terminus, consists of 360 amino acids, has a calculated molecular weight of 41 kDa, and a predicted N-terminus of Arg24 after signal peptide cleavage. As a result of glycosylation, the monomer migrates at approximately 52.3 kDa by SDS-PAGE under reducing conditions.

References

1. El Eid, L., Reynolds, C., Tomas, A., *et al.* Biased agonism and polymorphic variation at the GLP-1 receptor: Implications for the development of personalised therapeutics. *Pharmacol. Res.* **184**, 106411 (2022).
1. Song, G., Yang, D., Wang, Y., *et al.* Human GLP-1 receptor transmembrane domain structure in complex with allosteric modulators. *Nature* 546(7657), 312-315 (2017).
3. Müller, T.D., Finan, B., Bloom, S.R., *et al.* Glucagon-like peptide 1 (GLP-1). *Mol. Metab.* **30**, 72-130 (2019).
4. Gao, W., Liu, L., Huh, E., *et al.* Human GLP1R variants affecting GLP1R cell surface expression are associated with impaired glucose control and increased adiposity. *Nat. Metab.* **5(10)**, 1673-1684 (2023).

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