

Recombinant Rat FFAR2 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52538

Size: 10ug, 100ug

Protein Name: Free fatty acid receptor 2 (G protein-coupled receptor 43)

Synonym: Ffar2, Gpr43

UniProt ID: Q76EI6

UniProt Link: www.uniprot.org/uniprotkb/Q76EI6/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 330 AA

Molecular Weight: 37 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MTPDWHSSLILTAYILIFLTGLPANLLALRAVFSRVRQPQPAPVHILLNLTADLLLLLLLPFRIVEAAS
NFRWYLPKIVCALTGFGFYSSIYCSTWLLAGISIERYLGVAFPVQYKLSRRPLYGVIAALVAWIMSFGH
CTIVIVQYLNSTEQVG TENQITCYENFTQAQLDVLPVRLELCLVLFVPMTVTIFCYWRFVWIMLTQ
PHVGAQRRRRRAVGLAVVTLLNFLVCFGPYNMSHLVGFHLRQSPSWRVEAVVFSSLNASLDPLLFFYF
SSSVVRRAFGKGLLLLRNPGSSMLGRGAEETVEGKTDRGGSQTEGAQSSDFVTE

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Free fatty acid receptor 2 (G protein-coupled receptor 43) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: G protein-coupled receptor that is activated by a major product of dietary fiber digestion, the short chain fatty acids (SCFAs), and that plays a role in the regulation of whole-body energy homeostasis and in intestinal immunity. In omnivorous mammals, the short chain fatty acids acetate, propionate and butyrate are produced primarily by the gut microbiome that metabolizes dietary fibers. SCFAs serve as a source of energy but also act as signaling molecules. That G protein-coupled receptor is probably coupled to the pertussis toxin-sensitive, G(i/o)-alpha family of G proteins but also to the Gq family (PubMed:23589301). Its activation results in the formation of inositol 1,4,5-trisphosphate, the mobilization of intracellular calcium, the phosphorylation of the MAPK3/ERK1 and MAPK1/ERK2 kinases and the inhibition of intracellular cAMP accumulation. May play a role in glucose homeostasis by regulating the secretion of GLP-1, in response to short-chain fatty acids accumulating in the intestine. May also regulate the production of LEP/Leptin, a hormone acting on the central nervous system to inhibit food intake. Finally, may also regulate whole-body energy homeostasis through adipogenesis regulating both differentiation and lipid storage of adipocytes. In parallel to its role in energy homeostasis, may also mediate the activation of the inflammatory and immune responses by SCFA in the intestine, regulating the rapid production of chemokines and cytokines. May also play a role in the resolution of the inflammatory response and control chemotaxis in neutrophils. In addition to SCFAs, may also be activated by the extracellular lectin FCN1 in a process leading to activation of monocytes and inducing the secretion of interleukin-8/IL-8 in response to the presence of microbes.

Subcellular Localization: Cell membrane ; Multi-pass membrane protein .

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.