

DESCRIPTION

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| Source | Human embryonic kidney cell, HEK293-derived human GPR158 protein Ala24-Gln411, with a C-terminal 6-His tag Accession # Q5T848 |
| N-terminal Sequence Analysis | Ala24 & Ser25 |
| Predicted Molecular Mass | 45 kDa |

SPECIFICATIONS

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| SDS-PAGE | 50-70 kDa, under reducing conditions |
| Activity | Measured by its binding ability in a functional ELISA. When Recombinant Human GPR158 is immobilized at 1 µg/mL (100 µL/well), it binds to Recombinant Human Neuropilin-1 (Catalog # 3870-N1) with an ED ₅₀ of 0.8-4.8 µg/mL |
| Endotoxin Level | <0.10 EU per 1 µg of the protein by the LAL method. |
| Purity | >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining. |
| Formulation | Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details. |

PREPARATION AND STORAGE

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| Reconstitution | Reconstitute at 1 mg/mL in PBS. |
| Shipping | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. |
| Stability & Storage | Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution. |

DATA

Binding Activity

When Recombinant Human GPR158 (Catalog # 10286-GP) is coated at 1 µg/mL, 100 µL/well, Recombinant Human Neuropilin-1 (Catalog # 3870-N1) binds with an ED₅₀ of 0.8-4 µg/mL.

SDS-PAGE

2 µg/lane of Recombinant Human GPR158 His-tag Protein (Catalog # 10286-GP) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 50-70 kDa.

BACKGROUND

G-protein coupled receptor 158 (GPR158) is a receptor belonging to the Class C GPCR family. It lacks the extracellular Venus flytrap module characteristic of the known members of that family and instead contains two other elements that are not typical of the class: a calcium-binding EGF-like domain and a leucine repeat region (1, 2). The mature extracellular domain of human GPR158 contains 393 amino acids (aa) and shares 89% identity with both mouse and rat GPR158. GPR158 is expressed at the highest level in the brain, but also in a variety of other tissues including retina, spleen, liver and lung (3). GPR158 was originally identified in functional screens linked with biological stress and has been implicated in the osteocalcin effect on cognitive processes in the brain (4, 5), and glaucoma and cancer in the periphery (4, 6).

References:

1. Jingami, H. *et al.* (2003) *Curr. Opin. Neurobiol.* **13**:271.
2. Bjarnadóttir, T.K *et al.* (2005) *Gene.* **362**:70.
3. Orlandi, C. *et al.* (2012) *J. Cell Biol.* **197**:711.
4. Itakura, T. *et al.* (2019) *J. Ocul. Pharmacol. Ther.* **35**:203.
5. Khramian, L. *et al.* (2017) *J. Exp. Med.* **214**:2859.
6. Fenner, A. (2015) *Nat. Rev. Urol.* **12**:182.