

DESCRIPTION

Source Human embryonic kidney cell, HEK293-derived human Guanylyl Cyclase C/GUCY2C protein
Ser21-Gln430, with a C-terminal 6-His tag
Accession # P25092

N-terminal Sequence Analysis Ser21

Predicted Molecular Mass 47 kDa

SPECIFICATIONS

SDS-PAGE 73-81 kDa, reducing conditions

Activity Measured by its ability to inhibit neurite outgrowth of E16-E18 rat embryonic cortical neurons.
2.5 µg/mL of protein is able to significantly inhibit neurite outgrowth.

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

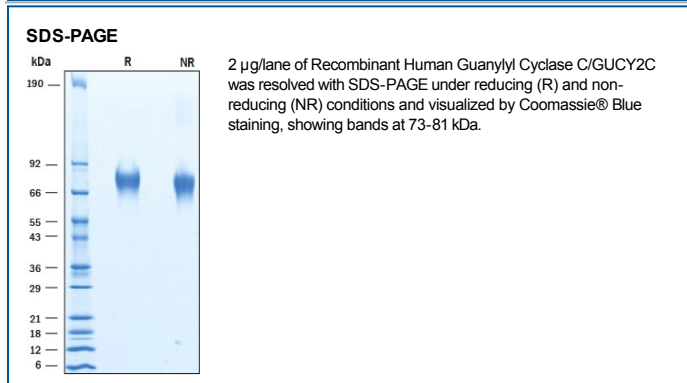
Reconstitution Reconstitute at 500 µg/mL in PBS.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage

- 12 months from date of receipt, ≤ -20 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, ≤ -20 °C under sterile conditions after reconstitution.

DATA



BACKGROUND

GUCY2C (Guanylyl Cyclase C), also known as heat-stable enterotoxin receptor, is a type I transmembrane protein of the guanylate cyclase (gc) family that signal by producing cGMP (1, 2). GUCY2C contains a 23 amino acid (aa) signal sequence, a 407 aa extracellular region (ECD), a 24 aa transmembrane (TM) segment and a 619 aa cytoplasmic domain (3). The ECD of human GUCY2C shares 71% and 72% aa identity with mouse and rat GUCY2C, respectively (4). GUCY2C was first identified as the intestinal epithelial receptor regulating fluid and electrolyte transport in the secretory diarrhea induced by bacterial enterotoxins (5). Endogenous ligands of GUCY2C include guanylin and uroguanylin (6). GUCY2C in epithelial cells plays an important role in cell dynamics and homeostatic balance of proliferation, metabolism, and differentiation that organizes the guanylyl cyclase C hormone axis (2, 6). GUCY2C is also expressed in the brain and is implicated in attention deficiency and hyperactive behavior (2, 7). CAR-T cell therapy utilizing GUCY2C to treat metastatic colorectal cancer is currently being explored (8).

References:

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3. de Sauvage, F. J. *et al.* (1991) *J. Biol. Chem.* **266**:17912.
4. Singh S. *et al.* (1991) *Biochem. Biophys. Res. Comm.* **179**:1455.
5. Lucas K. *et al.* (2000) *Pharmacol Rev.* **52**:375.
6. Erik, S. *et al.* (2016) *Mol. Pharmacol.* **90**:199.
7. Gong, R. *et al.* (2011) *Science.* **333**:1642.
8. Magee, MS. *et al.* (2018) *Cancer Immuno Res.* **6**:509.