Human Guanylyl Cyclase C/GUCY2C Antibody

Recombinant Monoclonal Rabbit IgG Clone # 2543C
Catalog Number: MAB2157

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Guanylyl Cyclase C/GUCY2C in direct ELISAs.
Source	Recombinant Monoclonal Rabbit IgG Clone # 2543C
Purification	Protein A or G purified from cell culture supernatant
Immunogen	Human embryonic kidney cell HEK293-derived human Guanylyl Cyclase C/GUCY2C Ser21-Gln430 Accession # P25092
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

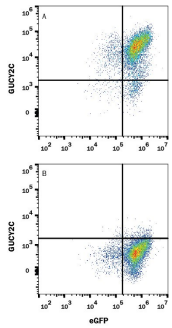
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Flow Cytometry	0.25 µg/10^6 cells	See Below
Immunocytochemistry	3-25 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

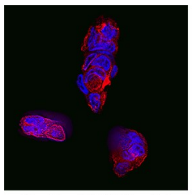
DATA

Flow Cytometry

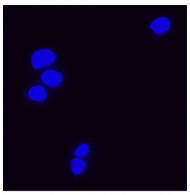


Detection of GUCY2C in HEK293 Human Cell Line Transfected with Human GUCY2C and eGFP by Flow Cytometry. HEK293 human embryonic kidney cell line transfected with (A) human GUCY2C or (B) irrelevant transfectants and eGFP was stained with Rabbit Anti-Human GUCY2C Monoclonal Antibody (Catalog # MAB2157) followed by APC-conjugated Anti-Rabbit IgG Secondary Antibody (Catalog # Catalog # F0111). Quadrant markers were set based on control antibody staining (Catalog # Catalog # MAB1050). View our protocol for Staining Membrane-associated Proteins.

Immunocytochemistry



Positive (LS1034 cells)



Negative (HCT116 cells)

Guanylyl Cyclase C/GUCY2C in LS1034 Human Cell Line. Guanylyl Cyclase C/GUCY2C was detected in immersion fixed LS1034 human colorectal carcinoma cell line (positive) and HCT-116 human colorectal carcinoma cell line (negative) using Rabbit Anti-Human Guanylyl Cyclase C/GUCY2C Monoclonal Antibody (Catalog # MAB2157) at 3 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Rabbit IgG Secondary Antibody (red; Catalog # Catalog # NL004) and counterstained with DAPI (blue). Specific staining was localized to cell membrane. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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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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7. Gong, R. *et al.* (2011) Science. **333**:1642.
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