Human GPR56 Antibody

Antigen Affinity-purified Polyclonal Sheep IgG
Catalog Number: AF4634

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human GPR56 in direct ELISAs and Western blots. In direct ELISAs, less than 1% cross-reactivity with recombinant human (rh) GPR30, rhGPR114, rhGPR115, rhGPR124, and rhGPR125 is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human GPR56 Arg26-Val342 Accession # AAP35975
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
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 as a 0.2 µm filtered solution in PBS.

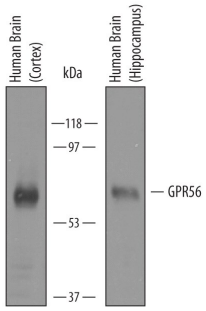
APPLICATIONS

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
Western Blot	1 µg/mL	See Below
Flow Cytometry	2.5 µg/10^6 cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

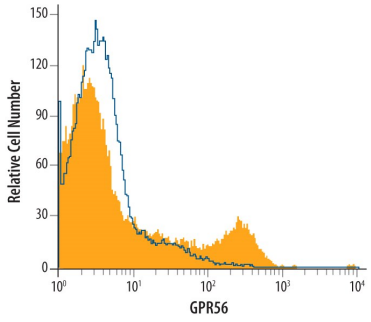
DATA

Western Blot



Detection of Human GPR56 by Western Blot. Western blot shows lysates of human brain (cortex) tissue and human brain (hippocampus) tissue. PVDF membrane was probed with 1 µg/mL of Sheep Anti-Human GPR56 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4634) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). A specific band was detected for GPR56 at approximately 65 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 8.

Flow Cytometry



Detection of GPR56 in Human Blood Lymphocytes by Flow Cytometry.
Human peripheral blood lymphocytes were stained with Sheep Anti-Human GPR56 Affinity-purified Polyclonal Antibody (Catalog # AF4634, filled histogram) or control antibody (Catalog # 5-001-A, open histogram), followed by Phycoerythrin-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # F0126).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 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

GPR56 is a member of the LN-TM7 family of adhesion-type 7-transmembrane (TM) G-protein coupled receptors (GPCR) with long extracellular N-termini (1-3). The 693 amino acid (aa) human GPR56 contains a 25 aa signal sequence, a 377 aa N-terminal extracellular domain (ECD) and seven TM regions separated by short intracellular and extracellular regions. Like other LN-TM7 members, the ECD contains a highly glycosylated mucin-like stalk followed by a GPCR proteolytic cleavage site (GPS) (1, 4). Cleavage of the 60 kDa N-terminus from the 80 kDa full length form is needed for efficient cell surface expression (5, 6). While the cleaved portion may remain non-covalently associated, it has also been found in conditioned medium of cultured cells (5). Human GPR56 shares 71%, 72%, 80%, 80% and 79% aa identity with mouse, rat, canine, equine, and bovine GPR56 within the cleaved ECD. A functional splice variant lacking the GPS site and a non-functional splice variant lacking portions of the TM domains have also been described (4). A human brain developmental disorder, bilateral frontoparietal polymicrogyria, is associated with GPR56 mutations that also show impaired GPS cleavage, intracellular trafficking, and expression at the cell surface (5). GPR56 is widely distributed, with highest mRNA or expressed sequence tag expression in brain, thyroid, skin and female reproductive system (3, 4). GPR56 expression is upregulated during cell transformation and is high in melanomas, glioblastomas and astrocytomas, but downregulated in melanomas with high metastatic potential (2, 6-8). Although the function of GPR56 is not completely known, it is clearly an adhesion protein (6-8). Tissue transglutaminase (TG2) is one reported ligand, binding of which inhibits melanoma growth and metastasis (6). Association of GPR56 with the tetraspanin CD81 stabilizes its complex with Gaq/11 for cell signaling (9).

References:

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