

## DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Human                                                                                                                                                                                                                                                                       |
| <b>Specificity</b>        | 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.                                                                          |
| <b>Source</b>             | Polyclonal Sheep IgG                                                                                                                                                                                                                                                        |
| <b>Purification</b>       | Antigen Affinity-purified                                                                                                                                                                                                                                                   |
| <b>Immunogen</b>          | Chinese hamster ovary cell line CHO-derived recombinant human GPR56<br>Arg26-Val342<br>Accession # AAP35975                                                                                                                                                                 |
| <b>Conjugate</b>          | Alexa Fluor 532<br>Excitation Wavelength: 534 nm<br>Emission Wavelength: 553 nm                                                                                                                                                                                             |
| <b>Formulation</b>        | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |

## 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.

|                       |                                                                        |
|-----------------------|------------------------------------------------------------------------|
| <b>CyTOF-ready</b>    | Optimal dilution of this antibody should be experimentally determined. |
| <b>Western Blot</b>   | Optimal dilution of this antibody should be experimentally determined. |
| <b>Flow Cytometry</b> | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## 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 Gαq/11 for cell signaling (9).

## PRODUCT SPECIFIC NOTICES

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