

FRAG1 (P-14): sc-167918

BACKGROUND

The glycosylphosphatidylinositol (GPI)-anchored proteins are subjected to lipid remodeling during their biosynthesis. FRAG1 (FGF receptor-activating protein 1), also known as PGAP2 (post-GPI attachment to proteins 2) or CWH43-N (cell wall biogenesis 43 N-terminal homolog), is a 315 amino acid multi-pass membrane protein and a member of the PGAP2 family. Ubiquitously expressed, with highest levels in testis and pancreas, FRAG1 localizes to both the Endoplasmic reticulum and the Golgi apparatus. FRAG1 interacts with PGAP2IP and is involved in the lipid remodeling steps of GPI-anchor maturation. FRAG1 is required for stable expression of GPI-anchored proteins at the cell surface. Existing as three alternatively spliced isoforms, FRAG1 is conserved in chimpanzee, dog and *Drosophila melanogaster*, and encoded by a gene located on human chromosome 11p15.4. Chromosome 11 is comprised of 135 million base pairs encoding approximately 1,400 genes and makes up around 4% of the human genome.

REFERENCES

- Lorenzi, M.V., Horii, Y., Yamanaka, R., Sakaguchi, K. and Miki, T. 1996. FRAG1, a gene that potently activates fibroblast growth factor receptor by C-terminal fusion through chromosomal rearrangement. *Proc. Natl. Acad. Sci. USA* 93: 8956-8961.
- Lorenzi, M.V., Castagnino, P., Aaronson, D.C., Lieb, D.C., Lee, C.C., Keck, C.L., Popescu, N.C. and Miki, T. 1999. Human FRAG1 encodes a novel membrane-spanning protein that localizes to chromosome 11p15.5, a region of frequent loss of heterozygosity in cancer. *Genomics* 62: 59-66.
- Sharom, F.J. and Lehto, M.T. 2002. Glycosylphosphatidylinositol-anchored proteins: structure, function, and cleavage by phosphatidylinositol-specific phospholipase C. *Biochem. Cell Biol.* 80: 535-549.
- Sangiorgio, V., Pitto, M., Palestini, P. and Masserini, M. 2004. GPI-anchored proteins and lipid rafts. *Ital. J. Biochem.* 53: 98-111.
- Tashima, Y., Taguchi, R., Murata, C., Ashida, H., Kinoshita, T. and Maeda, Y. 2006. PGAP2 is essential for correct processing and stable expression of GPI-anchored proteins. *Mol. Biol. Cell* 17: 1410-1420.
- Umemura, M., Fujita, M., Yoko-O, T., Fukamizu, A. and Jigami, Y. 2007. *Saccharomyces cerevisiae* CWH43 is involved in the remodeling of the lipid moiety of GPI anchors to ceramides. *Mol. Biol. Cell.* 18: 4304-4316.
- Maeda, Y., Tashima, Y., Houjou, T., Fujita, M., Yoko-o, T., Jigami, Y., Taguchi, R. and Kinoshita, T. 2007. Fatty acid remodeling of GPI-anchored proteins is required for their raft association. *Mol. Biol. Cell* 18: 1497-1506.
- Hugtyal, V., Vionnet, C., Roubaty, C. and Conzelmann, A. 2007. CWH43 is required for the introduction of ceramides into GPI anchors in *Saccharomyces cerevisiae*. *Mol. Microbiol.* 65: 1493-1502.
- Kinoshita, T., Fujita, M. and Maeda, Y. 2008. Biosynthesis, remodelling and functions of mammalian GPI-anchored proteins: recent progress. *J. Biochem.* 144: 287-294.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

CHROMOSOMAL LOCATION

Genetic locus: PGAP2 (human) mapping to 11p15.4; Pgap2 (mouse) mapping to 7 E3.

SOURCE

FRAG1 (P-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of FRAG1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-167918 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

FRAG1 (P-14) is recommended for detection of FRAG1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

FRAG1 (P-14) is also recommended for detection of FRAG1 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for FRAG1 siRNA (h): sc-96259, FRAG1 siRNA (m): sc-145236, FRAG1 shRNA Plasmid (h): sc-96259-SH, FRAG1 shRNA Plasmid (m): sc-145236-SH, FRAG1 shRNA (h) Lentiviral Particles: sc-96259-V and FRAG1 shRNA (m) Lentiviral Particles: sc-145236-V.

Molecular Weight of FRAG1: 27 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.