

PIEZO2 (G-20): sc-84763

BACKGROUND

PIEZO2 (piezo-type mechanosensitive ion channel component 2), also known as C18orf30, C18orf58 or FAM38B, is a 2,752 amino acid multi-pass membrane protein containing 37 transmembrane domains. 4 isoforms of PIEZO2 exist produced by alternative splicing. PIEZO2 is a component of mechanically-activated cation channels, which quickly adapt mechanically activated currents in somatosensory neurons. This mechanotransduction is important for light-touch mechanosensation. Defects in the PIEZO2 gene results in Gordon syndrome, a rare autosomal-dominant disorder characterized by congenital contractors of the hands and feet and cleft palate, Marden-Walker syndrome, characterized by blepharophimosis and other facial phenotypes, and distal arthrogryposis type 5. The PIEZO2 gene is widely conserved, including in mouse, rat, canine, bovine, chicken, zebrafish, *drosophila* and *C. elegans*.

REFERENCES

- Xiao, R. and Xu, X.Z. 2010. Mechanosensitive channels: in touch with Piezo. *Curr. Biol.* 20: R936-R938.
- Coste, B., et al. 2010. Piezo1 and Piezo2 are essential components of distinct mechanically activated cation channels. *Science* 330: 55-60.
- Coste, B. 2011. Feeling the pressure? Identification of two proteins activated by mechanical forces. *Med. Sci.* 27: 17-19.
- Dubin, A.E., et al. 2012. Inflammatory signals enhance piezo2-mediated mechanosensitive currents. *Cell Rep.* 2: 511-517.
- Coste, B., et al. 2013. Gain-of-function mutations in the mechanically activated ion channel PIEZO2 cause a subtype of Distal Arthrogryposis. *Proc. Natl. Acad. Sci. USA* 110: 4667-4672.
- McMillin, M.J., et al. 2014. Mutations in PIEZO2 cause Gordon syndrome, Marden-Walker syndrome, and distal arthrogryposis type 5. *Am. J. Hum. Genet.* 94: 734-744.
- Schrenk-Siemens, K., et al. 2015. PIEZO2 is required for mechanotransduction in human stem cell-derived touch receptors. *Nat. Neurosci.* 18: 10-16.

CHROMOSOMAL LOCATION

Genetic locus: PIEZO2 (human) mapping to 18p11.22; Piezo2 (mouse) mapping to 18 E1.

SOURCE

PIEZO2 (G-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of PIEZO2 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-84763 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

PIEZO2 (G-20) is recommended for detection of PIEZO2 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).

PIEZO2 (G-20) is also recommended for detection of PIEZO2 in additional species, including equine, canine, porcine and avian.

Suitable for use as control antibody for PIEZO2 siRNA (h): sc-77307, PIEZO2 siRNA (m): sc-140502, PIEZO2 siRNA (r): sc-270372, PIEZO2 shRNA Plasmid (h): sc-77307-SH, PIEZO2 shRNA Plasmid (m): sc-140502-SH, PIEZO2 shRNA Plasmid (r): sc-270372-SH, PIEZO2 shRNA (h) Lentiviral Particles: sc-77307-V, PIEZO2 shRNA (m) Lentiviral Particles: sc-140502-V and PIEZO2 shRNA (r) Lentiviral Particles: sc-270372-V.

Molecular Weight of PIEZO2 isoforms 1-4: 318/311/81/321 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (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.