

# Protogenin (C-16): sc-137689

## BACKGROUND

Protogenin, also known as PRTG, protein Shen-Dan, protogenin homolog or IGDC5 (immunoglobulin superfamily, DCC subclass, member 5), is a 1,150 amino acid single-pass membrane protein that belongs to the immunoglobulin superfamily and the DCC family. Closely related to both DCC and NEO1, two genes that guide migratory cells and axons during development, Protogenin is likely involved in cell migration and axon growth. Protogenin is expressed on the surface of ingressing and migrating cells during paraxial mesoderm development, suggesting that it mediates cell adhesion. Initiation of Protogenin expression prior to somitogenesis, as well as its maintenance role in neural tube and paraxial mesoderm, indicate a conserved role in anteroposterior axis elongation. Protogenin is linked to the suppression of premature neuronal differentiation during early neural development, and may also be linked to both ADHD and tooth germ development. The gene that encodes Protogenin maps to human chromosome 15q21.3.

## REFERENCES

1. Toyoda, R., et al. 2005. Identification of protogenin, a novel immunoglobulin superfamily gene expressed during early chick embryogenesis. *Gene Expr. Patterns* 5: 778-785.
2. Vesque, C., et al. 2006. Cloning of vertebrate Protogenin (Prtg) and comparative expression analysis during axis elongation. *Dev. Dyn.* 235: 2836-2844.
3. Wigg, K.G., et al. 2008. Association of ADHD and the Protogenin gene in the chromosome 15q21.3 reading disabilities linkage region. *Genes Brain Behav.* 7: 877-886.
4. Takahashi, K.F., et al. 2010. Protogenin, a new member of the immunoglobulin superfamily, is implicated in the development of the mouse lower first molar. *BMC Dev. Biol.* 10: 115.
5. Ito, K., et al. 2010. Protogenin mediates cell adhesion for ingression and re-epithelialization of paraxial mesodermal cells. *Dev. Biol.* 351: 13-24.
6. Wong, Y.H., et al. 2010. Protogenin defines a transition stage during embryonic neurogenesis and prevents precocious neuronal differentiation. *J. Neurosci.* 30: 4428-4439.
7. Buonincontri, R., et al. 2011. A cohort of balanced reciprocal translocations associated with dyslexia: identification of two putative candidate genes at DYX1. *Behav. Genet.* 41: 125-133.

## CHROMOSOMAL LOCATION

Genetic locus: PRTG (human) mapping to 15q21.3; Prtg (mouse) mapping to 9 D.

## SOURCE

Protogenin (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Protogenin of human origin.

## STORAGE

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

## 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-137689 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Protogenin (C-16) is recommended for detection of Protogenin 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).

Protogenin (C-16) is also recommended for detection of Protogenin in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Protogenin siRNA (h): sc-90236, Protogenin siRNA (m): sc-152487, Protogenin shRNA Plasmid (h): sc-90236-SH, Protogenin shRNA Plasmid (m): sc-152487-SH, Protogenin shRNA (h) Lentiviral Particles: sc-90236-V and Protogenin shRNA (m) Lentiviral Particles: sc-152487-V.

Molecular Weight of Protogenin: 127 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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.