

ATPGD1 (K-17): sc-241869

BACKGROUND

ATPGD1 (ATP-grasp domain-containing protein 1), also known as CARNS1 (carnosine synthase 1) is an 827 amino acid protein that contains a ATP-grasp domain. A member of the ATP-grasp family of ATPases, ATPGD1 catalyzes the formation of carnosine (β -alanyl-L-histidine) and homocarnosine (γ -aminobutyryl-L-histidine), which are found mainly in skeletal muscle and the central nervous system, respectively. ATPGD1 is highly expressed in whole adult and fetal brain as well as in heart and skeletal muscle. The ATPGD1 gene contains 9 coding exons with the first exon only encoding the initiator ATG and exists as three alternatively splice isoforms. The ATPGD1 gene is conserved in chimpanzee, canine and mouse, and maps to human chromosome 11q13.1. With approximately 135 million base pairs and 1,400 genes, chromosome 11 makes up around 4% of human genomic DNA. Jervell and Lange-Nielsen syndrome, Jacobsen syndrome, Niemann-Pick disease, hereditary angioedema and Smith-Lemli-Opitz syndrome are also associated with defects in chromosome 11.

REFERENCES

- Egeland, J.A., et al. 1987. Bipolar affective disorders linked to DNA markers on chromosome 11. *Nature* 325: 783-787.
- Lichter, P., et al. 1990. High-resolution mapping of human chromosome 11 by *in situ* hybridization with cosmid clones. *Science* 247: 64-69.
- Nagase, T., et al. 2000. Prediction of the coding sequences of unidentified human genes. XVI. The complete sequences of 150 new cDNA clones from brain which code for large proteins *in vitro*. *DNA Res.* 7: 65-73.
- Strausberg, R.L., et al. 2002. Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences. *Proc. Natl. Acad. Sci. USA* 99: 16899-16903.
- Taylor, T.D., et al. 2006. Human chromosome 11 DNA sequence and analysis including novel gene identification. *Nature* 440: 497-500.
- Drozak, J., et al. 2010. Molecular identification of carnosine synthase as ATP-grasp domain-containing protein 1 (ATPGD1). *J. Biol. Chem.* 285: 9346-9356.
- Online Mendelian Inheritance in Man, OMIM[™]. 2010. Johns Hopkins University, Baltimore, MD. MIM Number: 613368. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: CARNS1 (human) mapping to 11q13.2; Carns1 (mouse) mapping to 19 A.

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.

SOURCE

ATPGD1 (K-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ATPGD1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-241869 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ATPGD1 (K-17) is recommended for detection of ATPGD1 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).

ATPGD1 (K-17) is also recommended for detection of ATPGD1 in additional species, including equine and bovine.

Suitable for use as control antibody for ATPGD1 siRNA (m): sc-140954, ATPGD1 shRNA Plasmid (m): sc-140954-SH and ATPGD1 shRNA (m) Lentiviral Particles: sc-140954-V.

Molecular Weight of ATPGD1 isoforms 1/2/3: 88/42/103 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.