

## GDC (S-12): sc-137495

### BACKGROUND

GDC (Graves disease carrier protein), also known as SLC25A16 (solute carrier family 25 member 16), ML7, GDA or HGT.1, is a 332 amino acid multi-pass membrane protein belonging to the mitochondrial carrier family. Localizing to mitochondrial inner membrane, GDC is essential for the accumulation of coenzyme A in the mitochondrial matrix and facilitates the transport and exchange of molecules between the cytosol and the mitochondrial matrix space. GDC contains three Solcar repeats and is encoded by a gene mapping to human chromosome 10q21.3, a region associated with Graves disease. Making up 4.5% of the human genome, chromosome 10 encodes roughly 800 genes including PTEN, a tumor suppressor gene that has been linked to the development of Cowden syndrome. The chromosome 10 encoded gene ERCC6 is important for DNA repair and is linked to Cockayne syndrome which is characterized by extreme photosensitivity and premature aging.

### REFERENCES

- Zarrilli, R., et al. 1989. Sequence and chromosomal assignment of a novel cDNA identified by immunoscreening of a thyroid expression library: similarity to a family of mitochondrial solute carrier proteins. *Mol. Endocrinol.* 3: 1498-1505.
- Fiermonte, G., et al. 1992. Sequence and pattern of expression of a bovine homologue of a human mitochondrial transport protein associated with Grave's disease. *DNA Seq.* 3: 71-78.
- Troelstra, C., et al. 1992. Localization of the nucleotide excision repair gene ERCC6 to human chromosome 10q11-q21. *Genomics* 12: 745-749.
- Kuan, J. and Saier, M.H. 1993. The mitochondrial carrier family of transport proteins: structural, functional, and evolutionary relationships. *Crit. Rev. Biochem. Mol. Biol.* 28: 209-233.
- Rossi, E., et al. 1993. Regional assignment of the gene coding for a human Graves' disease autoantigen to 10q21.3-q22.1. *Hum. Genet.* 90: 653-654.
- Prohl, C., et al. 2001. The yeast mitochondrial carrier Leu5p and its human homologue Graves' disease protein are required for accumulation of coenzyme A in the matrix. *Mol. Cell. Biol.* 21: 1089-1097.
- Teresi, R.E., et al. 2007. Cowden syndrome-affected patients with PTEN promoter mutations demonstrate abnormal protein translation. *Am. J. Hum. Genet.* 81: 756-767.
- Yin, Y. and Shen, W.H. 2008. PTEN: a new guardian of the genome. *Oncogene* 27: 5443-5453.
- Laugel, V., et al. 2010. Mutation update for the CSB/ERCC6 and CSA/ERCC8 genes involved in Cockayne syndrome. *Hum. Mutat.* 31: 113-126.

### CHROMOSOMAL LOCATION

Genetic locus: SLC25A16 (human) mapping to 10q21.3.

### SOURCE

GDC (S-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GDC 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-137495 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

GDC (S-12) is recommended for detection of GDC of human and rat 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).

GDC (S-12) is also recommended for detection of GDC in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GDC siRNA (h): sc-90626, GDC shRNA Plasmid (h): sc-90626-SH and GDC shRNA (h) Lentiviral Particles: sc-90626-V.

Molecular Weight of GDC: 36 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.

### 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.