SANTA CRUZ BIOTECHNOLOGY, INC.

# SLC25A22 (M-22): sc-102108

## BACKGROUND

SLC25A22 (solute carrier family 25 member 22), also known as GC1 (mitochondrial glutamate carrier 1), is a 323 amino acid multi-pass membrane protein that belongs to the the SLC25 family of mitochondrial carriers that are responsible for transporting metabolites across the inner mitochondrial membrane. Existing as one of only two known mitochondrial glutamate/$H^+$ symporters, SLC25A22 is widely expressed and localizes to the mitochondrion inner membrane. SLC25A22 contains three Solcar repeats and plays an important role in the transport of glutamate across the inner mitochondrial membrane. Mutations in the gene encoding SLC25A22 are associated with myoclonic encephalopathy (EME). EME, also called neonatal epilepsy with suppression-burst pattern, is an autosomal recessive disorder characterized by early onset, massive myoclonus that is generally erratic and fragmentary, late tonic spasms and partial motor seizures. Patients with this disorder typically do not survive beyond 1-2 years after birth.

## REFERENCES


1. Palmieri, L., et al. 2001. Citrin and ARALAR1 are $Ca^{2+}$-stimulated aspartate/glutamate transporters in mitochondria. EMBO J. 20: 5060-5069.
2. de Falco, F.A., et al. 2001. Familial infantile myoclonic epilepsy: clinical features in a large kindred with autosomal recessive inheritance. Epilepsia 42: 1541-1548.
3. Fiermonte, G., et al. 2002. Identification of the mitochondrial glutamate transporter. Bacterial expression, reconstitution, functional characterization, and tissue distribution of two human isoforms. J. Biol. Chem. 277: 19289-19294.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609302. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Ohtahara, S. and Yamatogi, Y. 2003. Epileptic encephalopathies in early infancy with suppression-burst. J. Clin. Neurophysiol. 20: 398-407.
6. Palmieri, F. 2004. The mitochondrial transporter family (SLC25): physiological and pathological implications. Pflugers Arch. 447: 689-709.
7. Molinari, F., et al. 2005. Impaired mitochondrial glutamate transport in autosomal recessive neonatal myoclonic epilepsy. Am. J. Hum. Genet. 76: 334-339.


## CHROMOSOMAL LOCATION

Genetic locus: SLC25A22 (human) mapping to 11p15.5; Slc25a22 (mouse) mapping to 7 F5.

## SOURCE

SLC25A22 (M-22) is a purified rabbit polyclonal antibody raised against SLC25A22 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 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

## APPLICATIONS

SLC25A22 (M-22) is recommended for detection of SLC25A22 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SLC25A22 siRNA (h): sc-96917, SLC25A22 siRNA (m): sc-153506, SLC25A22 shRNA Plasmid (h): sc-96917-SH, SLC25A22 shRNA Plasmid (m): sc-153506-SH, SLC25A22 shRNA (h) Lentiviral Particles: sc-96917-V and SLC25A22 shRNA (m) Lentiviral Particles: sc-153506-V.

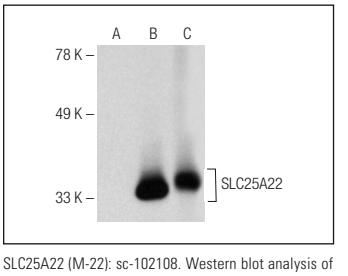
Molecular Weight of SLC25A22: 33 kDa.

Positive Controls: SLC25A22 (h): 293T Lysate: sc-127546, Jurkat whole cell lysate: sc-2204 or mouse brain extract: sc-2253.

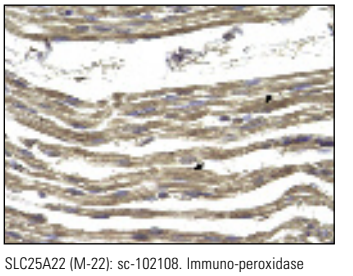
## RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA




SLC25A22 (M-22): sc-102108. Western blot analysis of SLC25A22 expression in non-transfected: sc-117752 (**A**) and mouse SLC25A22 transfected: sc-127546 (**B**) 293T whole cell lysates and mouse brain tissue extract (**C**).



SLC25A22 (M-22): sc-102108. Immuno-peroxidase staining of formalin fixed, paraffin-embedded human muscle tissue showing cytoplasmic staining.

## RESEARCH USE

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