SANTA CRUZ BIOTECHNOLOGY, INC.

citrin (8Z): sc-100937

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Citrin, also known as SLC25A13 (solute carrier family 25 member 13), ARALAR2 or CTLN2, is a 675 amino acid multi-pass membrane protein that localizes to the inner membrane of the mitochondrion. Expressed in liver, pancreas, kidney, brain, heart and placenta, citrin functions as a calcium-dependent glutamate and aspartate carrier that is thought to play a role in the urea cycle. Citrin, a member of the mitochondrial carrier family, contains three solcar repeats and four EF-hand domains through which it binds calcium. Defects in the gene encoding citrin are the cause of citrullinemia type 2 (CTLN2) and neonatal intrahepatic cholestasis due to citrin deficiency (NICCD). CTLN2 is an autosomal recessive disease that results from errors in the urea cycle and is characterized by neuropsychiatric symptoms such as loss of memory, seizures and coma. NICCD, a non-lethal disorder, occurs during infancy and is characterized by low birth weight, reduced bile flow, growth retardation and hepatic fibrosis.

REFERENCES

1. Sinasac, D.S., et al. 1999. Genomic structure of the adult-onset type II citrullinemia gene, SLC25A13, and cloning and expression of its mouse homologue. Genomics 62: 289-292.
2. Kobayashi, K., et al. 1999. The gene mutated in adult-onset type II citrullinaemia encodes a putative mitochondrial carrier protein. Nat. Genet. 22: 159-163.
3. Del Arco, A., et al. 2000. Characterization of a second member of the subfamily of calcium-binding mitochondrial carriers expressed in human non-excitable tissues. Biochem. J. 345: 725-732.
4. Palmieri, L., et al. 2001. Citrin and ARALAR1 are Ca^{2+}-stimulated aspartate/glutamate transporters in mitochondria. EMBO J. 20: 5060-5069.
5. Yamaguchi, N., et al. 2002. Screening of SLC25A13 mutations in early and late onset patients with citrin deficiency and in the Japanese population: Identification of two novel mutations and establishment of multiple DNA diagnosis methods for nine mutations. Hum. Mutat. 19: 122-130.
6. Saheki, T. and Kobayashi, K. 2002. Mitochondrial aspartate glutamate carrier (citrin) deficiency as the cause of adult-onset type II citrullinemia (CTLN2) and idiopathic neonatal hepatitis (NICCD). J. Hum. Genet. 47: 333-341.

CHROMOSOMAL LOCATION

Genetic locus: SLC25A13 (human) mapping to 7q21.3.

SOURCE

citrin (8Z) is a mouse monoclonal antibody raised against recombinant citrin of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

citrin (8Z) is recommended for detection of citrin of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for citrin siRNA (h): sc-89601, citrin shRNA Plasmid (h): sc-89601-SH and citrin shRNA (h) Lentiviral Particles: sc-89601-V.

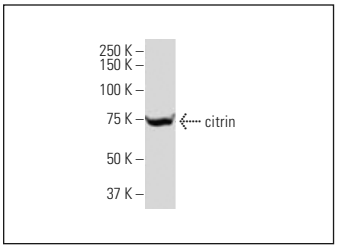
Molecular Weight of citrin: 74 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

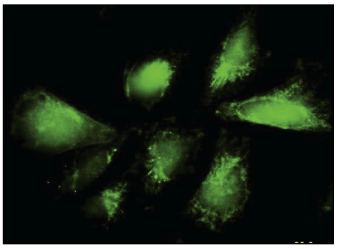
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



citrin (8Z): sc-100937. Western blot analysis of citrin expression in Hep G2 whole cell lysate.



citrin (8Z): sc-100937. Immunofluorescence staining of paraformaldehyde-fixed HepG2 cells showing cytoplasmic localization.

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 for detailed protocols and support products.