SANTA CRUZ BIOTECHNOLOGY, INC.

ECA39 (1F8): sc-517185

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Class-IV pyridoxal-phosphate-dependent aminotransferase family members ECA39 and BCAT2 are both enzymes that catalyze the first reaction in the catabolism of the essential branched chain amino acids valine, leucine and isoleucine. ECA39, also known as BCAT1 (branched-chain-amino-acid aminotransferase 1, cytosolic) is localized to the cytoplasm where it forms a homodimer. ECA39 is expressed in the brain and kidney during embryogenesis and is overexpressed in c-Myc induced tumors. BCAT2 (branched-chain-amino-acid aminotransferase 2, mitochondrial), also known as placental protein 18 (PP18), is expressed as two isoforms produced by alternative splicing. The first isoform of BCAT2, designated BCAT2A, is expressed in the mitochondrion, while the second isoform, designated BCAT2B, is expressed in the cytoplasm. Ubiquitously expressed, BCAT2 is also thought to act as a transporter of branched chain α-keto acids.

REFERENCES

1. Schuldiner, O., et al. 1996. ECA39, a conserved gene regulated by c-Myc in mice, is involved in G_1/S cell cycle regulation in yeast. Proc. Natl. Acad. Sci. USA 93: 7143-7148.
2. Ben-Yosef, T., et al. 1998. Characterization of murine BCAT genes: Bcat1, a c-Myc target, and its homolog, Bcat2. Mamm. Genome 9: 595-597.
3. Eden, A., et al. 1999. Involvement of branched-chain amino acid aminotransferase (BCAT1/ECA39) in apoptosis. FEBS Lett. 457: 255-261.
4. Grimm, C.H., et al. 2003. Lrmp and BCAT1 are candidates for the type I diabetes susceptibility locus Idd6. Autoimmunity 36: 241-246.
5. Yoshikawa, R., et al. 2006. ECA39 is a novel distant metastasis-related biomarker in colorectal cancer. World J. Gastroenterol. 12: 5884-5889.
6. Zhou, W., et al. 2007. Functional evidence for a nasopharyngeal carcinoma-related gene BCAT1 located at 12p12. Oncol. Res. 16: 405-413.
7. Conway, M.E., et al. 2008. Regulatory control of human cytosolic branched-chain aminotransferase by oxidation and S-glutathionylation and its interactions with redox sensitive neuronal proteins. Biochemistry 47: 5465-5479.

CHROMOSOMAL LOCATION

Genetic locus: BCAT1 (human) mapping to 12p12.1.

SOURCE

ECA39 (1F8) is a mouse monoclonal antibody raised against amino acids 1-320 representing full length ECA39 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.

STORAGE

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

APPLICATIONS

ECA39 (1F8) is recommended for detection of ECA39 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ECA39 siRNA (h): sc-77222, ECA39 shRNA Plasmid (h): sc-77222-SH and ECA39 shRNA (h) Lentiviral Particles: sc-77222-V.

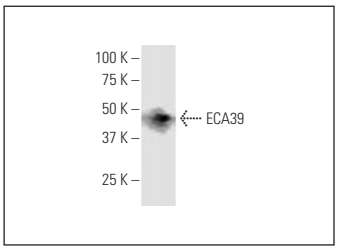
Molecular Weight of ECA39: 43 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or human kidney extract: sc-363764.

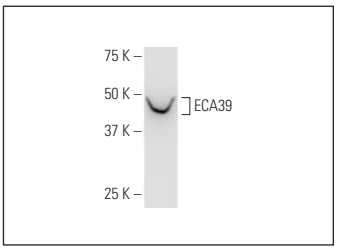
RECOMMENDED SUPPORT REAGENTS

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).

DATA



ECA39 (1F8): sc-517185. Western blot analysis of ECA39 expression in human kidney tissue extract.



ECA39 (1F8): sc-517185. Western blot analysis of ECA39 expression in MCF7 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Tosello, V., et al. 2024. BCAT1 associates with DNA repair proteins KU70 and KU80 and contributes to regulate DNA repair in T-cell acute lymphoblastic leukemia (T-ALL). Int. J. Mol. Sci. 25: 13571.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.