

## ECA39 (G-15): sc-68655

### 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  $\alpha$ -keto acids.

### REFERENCES

- Schuldiner, O., et al. 1996. ECA39, a conserved gene regulated by c-Myc in mice, is involved in G<sub>1</sub>/S cell cycle regulation in yeast. *Proc. Natl. Acad. Sci. USA* 93: 7143-7148.
- 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.
- Eden, A., et al. 1999. Involvement of branched-chain amino acid aminotransferase (BCAT1/ECA39) in apoptosis. *FEBS Lett.* 457: 255-261.
- Grimm, C.H., et al. 2003. Lrmp and BCAT1 are candidates for the type I diabetes susceptibility locus Idd6. *Autoimmunity* 36: 241-246.
- Yoshikawa, R., et al. 2006. ECA39 is a novel distant metastasis-related biomarker in colorectal cancer. *World J. Gastroenterol.* 12: 5884-5889.
- Zhou, W., et al. 2007. Functional evidence for a nasopharyngeal carcinoma-related gene BCAT1 located at 12p12. *Oncol. Res.* 16: 405-413.
- 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; Bcat1 (mouse) mapping to 6 G3.

### SOURCE

ECA39 (G-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ECA39 of human origin.

### PRODUCT

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

Blocking peptide available for competition studies, sc-68655 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

ECA39 (G-15) is recommended for detection of ECA39 of mouse 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).

ECA39 (G-15) is also recommended for detection of ECA39 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for ECA39 siRNA (h): sc-77222, ECA39 siRNA (m): sc-77223, ECA39 shRNA Plasmid (h): sc-77222-SH, ECA39 shRNA Plasmid (m): sc-77223-SH, ECA39 shRNA (h) Lentiviral Particles: sc-77222-V and ECA39 shRNA (m) Lentiviral Particles: sc-77223-V.

Molecular Weight of ECA39: 43 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.


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Try **ECA39 (1F8): sc-517185**, our highly recommended monoclonal alternative to ECA39 (G-15).