SANTA CRUZ BIOTECHNOLOGY, INC.

GluRS (G-18): sc-74716

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The fidelity of protein synthesis requires efficient discrimination of amino acid substrates by aminoacyl-tRNA synthetases. Aminoacyl-tRNA synthetases function to catalyze the aminoacylation of tRNAs by their corresponding amino acids, thus linking amino acids with tRNA-contained nucleotide triplets. GluRS (glutamyl-tRNA synthetase 2), also known as EARS2 or MSE1, is a 523 amino acid protein that localizes to the mitochondrial matrix and belongs to the class I aminoacyl-tRNA synthetase family. Participating in protein biosynthesis, GluRS functions to catalyze the ATP-dependent attachment of glutamate to $tRNA^{Glu}$, a two-step reaction that involves the ATP-dependent activation of glutamate to form Glu-AMP and the subsequent transfer of the glutamate residue to $tRNA^{Glu}$.

REFERENCES

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3. Quevillon, S., Robinson, J.C., Berthonneau, E., Siatecka, M. and Mirande, M. 1999. Macromolecular assemblage of aminoacyl-tRNA synthetases: identification of protein-protein interactions and characterization of a core protein. J. Mol. Biol. 285: 183-195.
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5. Han, J.M., Kim, J.Y. and Kim, S. 2003. Molecular network and functional implications of macromolecular tRNA synthetase complex. Biochem. Biophys. Res. Commun. 303: 985-993.
6. Lee, S.W., Cho, B.H., Park, S.G. and Kim, S. 2004. Aminoacyl-tRNA synthetase complexes: beyond translation. J. Cell Sci. 117: 3725-3734.
7. Bonnefond, L., Fender, A., Rudinger-Thirion, J., Giege, R., Florentz, C. and Sissler, M. 2005. Toward the full set of human mitochondrial aminoacyl-tRNA synthetases: characterization of AspRS and TyrRS. Biochemistry 44: 4805-4816.
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CHROMOSOMAL LOCATION

Genetic locus: EARS2 (human) mapping to 16p12.2; Ears2 (mouse) mapping to 7 F3.

STORAGE

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

SOURCE

GluRS (G-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GluRS 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-74716 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GluRS (G-18) is recommended for detection of GluRS 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).

GluRS (G-18) is also recommended for detection of GluRS in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GluRS siRNA (h): sc-75146, GluRS siRNA (m): sc-75147, GluRS shRNA Plasmid (h): sc-75146-SH, GluRS shRNA Plasmid (m): sc-75147-SH, GluRS shRNA (h) Lentiviral Particles: sc-75146-V and GluRS shRNA (m) Lentiviral Particles: sc-75147-V.

Molecular Weight of GluRS: 59 kDa.

Positive Controls: Mouse testis extract: sc-2405.

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.

RESEARCH USE

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

PROTOCOLS

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