SANTA CRUZ BIOTECHNOLOGY, INC.

HARS2 (G-12): sc-162922

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. HARS2 (histidyl-tRNA synthetase 2), also known as HO3, HARSL or HARSR, is a 506 amino acid protein that localizes to the mitochondrial matrix and belongs to the class II aminoacyl-tRNA synthetase family. Highly expressed in kidney, heart and skeletal muscle with lower levels present in liver and brain, HARS2 functions in the ATP-dependent synthesis of histidyl-transfer RNA, playing an accessory role in the regulation of protein synthesis. The gene encoding HARS2 maps to human chromosome 5, which contains 181 million base pairs and comprises nearly 6% of the human genome.

REFERENCES

1. Raben, N., et al. 1992. Human histidyl-tRNA synthetase: recognition of amino acid signature regions in class 2a aminoacyl-tRNA synthetases. Nucleic Acids Res. 20: 1075-1081.

2. Tsui, H.W., et al. 1993. Transcriptional analyses of the gene region that encodes human histidyl-tRNA synthetase: identification of a novel bidirectional regulatory element. Gene 131: 201-208.

3. O'Hanlon, T.P., et al. 1995. A novel gene oriented in a head-to-head configuration with the human histidyl-tRNA synthetase (HRS) gene encodes an mRNA that predicts a polypeptide homologous to HRS. Biochem. Biophys. Res. Commun. 210: 556-566.

4. Lama, J., et al. 1998. Human immunodeficiency virus type 1 matrix protein interacts with cellular protein HO3. J. Virol. 72: 1671-1676.

5. Freist, W., et al. 1999. Histidyl-tRNA synthetase. Biol. Chem. 380: 623-646.

6. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 600783. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: HARS2 (human) mapping to 5q31.3; Hars2 (mouse) mapping to 18 B2.

SOURCE

HARS2 (G-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of HARS2 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-162922 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

HARS2 (G-12) is recommended for detection of HARS2 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).

HARS2 (G-12) is also recommended for detection of HARS2 in additional species, including equine and bovine.

Suitable for use as control antibody for HARS2 siRNA (h): sc-92036, HARS2 siRNA (m): sc-145897, HARS2 shRNA Plasmid (h): sc-92036-SH, HARS2 shRNA Plasmid (m): sc-145897-SH, HARS2 shRNA (h) Lentiviral Particles: sc-92036-V and HARS2 shRNA (m) Lentiviral Particles: sc-145897-V.

Molecular Weight of HARS2: 57 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.

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.