

AlaRS (E-9): sc-165991

BACKGROUND

Aminoacyl-tRNA synthetases function to catalyze the aminoacylation of tRNAs by their corresponding amino acids, thus linking amino acids with tRNA-contained nucleotide triplets. Class II tRNA synthetases are a highly conserved subfamily of tRNA synthetases that have a catalytic domain through which they interact with the amino acid acceptor of the tRNA and a second domain through which they interact with the rest of the tRNA molecule. AlaRS (alanyl-tRNA synthetase), also known as AARS, is a 968 amino acid cytoplasmic protein that belongs to the class II subfamily of tRNA synthetases. Functioning as a monomer, AlaRS catalyzes the ATP-dependent attachment of alanine to a corresponding tRNA^{Ala}, thereby producing alanyl-tRNA^{Ala}. Defects in the gene encoding AlaRS may lead to an accumulation of misfolded proteins within the cell, ultimately leading to cell death.

REFERENCES

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4. Ripmaster, T.L., et al. 1995. Wide cross-species aminoacyl-tRNA synthetase replacement *in vivo*: yeast cytoplasmic alanine enzyme replaced by human polymyositis serum antigen. *Proc. Natl. Acad. Sci. USA* 92: 4932-4936.
5. Chihade, J.W., et al. 2000. Origin of mitochondria in relation to evolutionary history of eukaryotic alanyl-tRNA synthetase. *Proc. Natl. Acad. Sci. USA* 97: 12153-12157.
6. Lovato, M.A., et al. 2001. Translocation within the acceptor helix of a major tRNA identity determinant. *EMBO J.* 20: 4846-4853.
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CHROMOSOMAL LOCATION

Genetic locus: AARS (human) mapping to 16q22.1; Aars (mouse) mapping to 8 E1.

SOURCE

AlaRS (E-9) is a mouse monoclonal antibody raised against amino acids 701-968 mapping at the C-terminus of AlaRS of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

AlaRS (E-9) is recommended for detection of AlaRS of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 AlaRS siRNA (h): sc-72474, AlaRS siRNA (m): sc-72475, AlaRS shRNA Plasmid (h): sc-72474-SH, AlaRS shRNA Plasmid (m): sc-72475-SH, AlaRS shRNA (h) Lentiviral Particles: sc-72474-V and AlaRS shRNA (m) Lentiviral Particles: sc-72475-V.

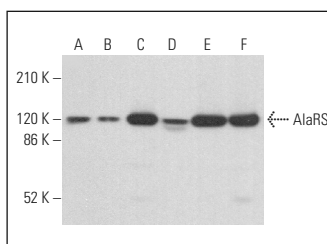
Molecular Weight of AlaRS: 107 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, 3T3-L1 cell lysate: sc-2243 or HEK293 whole cell lysate: sc-45136.

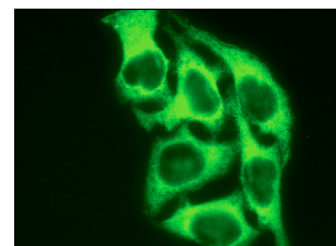
RECOMMENDED SUPPORT REAGENTS

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



AlaRS (E-9): sc-165991. Western blot analysis of AlaRS expression in NIH/3T3 (A), 3T3-L1 (B), A2058 (C), c4 (D), HEL 92.1.7 (E) and HEK293 (F) whole cell lysates.



AlaRS (E-9): sc-165991. Immunofluorescence staining of methanol-fixed HeLa 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.

RESEARCH USE

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