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AlaRS (AARS) Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP7558a

Specification

AlaRS (AARS) Antibody (N-term) - Product Information

Application	**IHC-P, WB,E**
Primary Accession	P49588
Other Accession	Q23122, P50475, Q8BGQ7, Q9VLM8, O01541
Reactivity	**Human**
Predicted	**C.Elegans, Drosophila, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**106810**
Antigen Region	**61-91**

AlaRS (AARS) Antibody (N-term) - Additional Information

Gene ID 16

Other Names
Alanine--tRNA ligase, cytoplasmic {ECO:0000255|HAMAP-Rule:MF_03133}, 6117 {ECO:0000255|HAMAP-Rule:MF_03133}, Alanyl-tRNA synthetase {ECO:0000255|HAMAP-Rule:MF_03133}, AlaRS {ECO:0000255|HAMAP-Rule:MF_03133}, Renal carcinoma antigen NY-REN-42, AARS {ECO:0000255|HAMAP-Rule:MF_03133}

Target/Specificity
This AlaRS (AARS) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 61-91 amino acids from the N-terminal region of human AlaRS (AARS).

Dilution
IHC-P~~1:10~50
WB~~1:1000
E~~Use at an assay dependent concentration.

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
AlaRS (AARS) Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

AlaRS (AARS) Antibody (N-term) - Protein Information

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Name AARS1 {ECO:0000303|PubMed:38653238, ECO:0000312|HGNC:HGNC:20}

Function Catalyzes the attachment of alanine to tRNA(Ala) in a two- step reaction: alanine is first activated by ATP to form Ala-AMP and then transferred to the acceptor end of tRNA(Ala) (PubMed:27622773, PubMed:27911835, PubMed:28493438, PubMed:33909043). Also edits incorrectly charged tRNA(Ala) via its editing domain (PubMed:27622773, PubMed:27911835, PubMed:28493438, PubMed:29273753). In presence of high levels of lactate, also acts as a protein lactyltransferase that mediates lactylation of lysine residues in target proteins, such as TEAD1, TP53/p53 and YAP1 (PubMed:38512451, PubMed:38653238). Protein lactylation takes place in a two-step reaction: lactate is first activated by ATP to form lactate-AMP and then transferred to lysine residues of target proteins (PubMed:38512451, PubMed:38653238, PubMed:39322678). Acts as an inhibitor of TP53/p53 activity by catalyzing lactylation of TP53/p53 (PubMed:38653238). Acts as a positive regulator of the Hippo pathway by mediating lactylation of TEAD1 and YAP1 (PubMed:38512451).

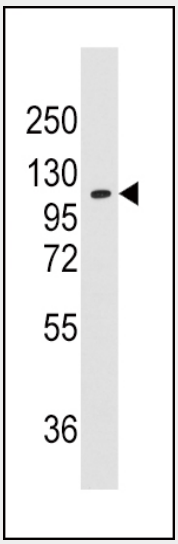
Cellular Location
Cytoplasm {ECO:0000255|HAMAP-Rule:MF_03133, ECO:0000269|PubMed:27911835, ECO:0000269|PubMed:38512451}. Nucleus. Note=Translocates to the nucleus in response to increased levels of lactate; nuclear translocation is dependent on KPNA4.

AlaRS (AARS) Antibody (N-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

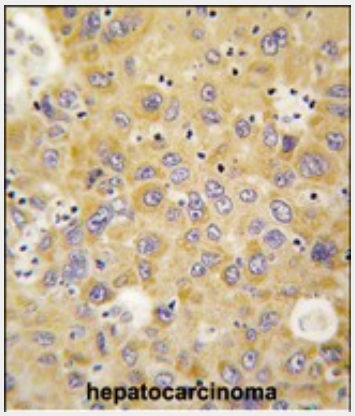
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

AlaRS (AARS) Antibody (N-term) - Images



Western blot analysis of anti-AARS Pab (Cat.#AP7558a) in K562 cell line lysates (35ug/lane).AARS

(arrow) was detected using the purified Pab.



Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with AARS antibody (N-term) (Cat.#AP7558a), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

AlaRS (AARS) Antibody (N-term) - Background

The human alanyl-tRNA synthetase (AARS) belongs to a family of tRNA synthases,of the class II enzymes.Class II tRNA synthases evolved early in evolution and are highly conserved.This is reflected by the fact that 498 of the 968-residue polypeptide human AARS shares 41% identity witht the E.coli protein.tRNA synthases are the enzymes that interpret the RNA code and attach specific aminoacids to the tRNAs that contain the cognate trinucleotide anticodons.They consist of a catalytic domain which interacts with the amino acid acceptor-T psi C helix of the tRNA, and a second domain which interacts with the rest of the tRNA structure.

AlaRS (AARS) Antibody (N-term) - References

Shiba,K.,Biochemistry 34 (33), 10340-10349 (1995)
Ripmaster,T.L.,Proc. Natl. Acad. Sci. U.S.A. 92 (11), 4932-4936 (1995)
Sang Lee,J.,Cell 127 (3), 635-648 (2006)