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AlaRS (AARS) Antibody (N-term) Blocking peptide

Synthetic peptide
Catalog # BP7558a

Specification

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

Primary Accession P49588

AlaRS (AARS) Antibody (N-term) Blocking peptide - 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
The synthetic peptide sequence used to generate the antibody AP7558a was selected from the N-term region of human AARS. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

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

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:<a

href="http://www.uniprot.org/citations/28493438" target="_blank">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) Blocking peptide - Protocols

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

- Blocking Peptides

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

AlaRS (AARS) Antibody (N-term) Blocking peptide - 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) Blocking peptide - 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)