abcam

ab247596

Anti-Tryptophanyl tRNA synthetase/WRS antibody [EPR3424] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR3424
Purification technique	Affinity purification Protein A
Concentration	1.05 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-

Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information WARS1

Function	Catalyzes the attachment of tryptophan to tRNA(Trp) in a two-step reaction: tryptophan is first activated by ATP to form Trp-AMP and then transferred to the acceptor end of the tRNA(Trp). Isoform 1. Has no angiostatic activity. T2-TrpRS. Possesses an angiostatic activity but has no aminoacylation activity (PubMed:11773625, PubMed:11773626, PubMed:14630953). Inhibits fluid shear stress-activated responses of endothelial cells (PubMed:14630953). Regulates ERK, Akt, and eNOS activation pathways that are associated with angiogenesis, cytoskeletal reorganization and shear stress-responsive gene expression (PubMed:14630953). Isoform 2. Has an angiostatic activity.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Storage information	Do Not Freeze

Notes

ab247596 is the carrier-free version of ab92733.

Species reactivity

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Tryptophanyl tRNA synthetase also known as WRS or TrpRS is an enzyme responsible for attaching tryptophan to its corresponding tRNA during protein synthesis. This enzyme is approximately 53 kDa in mass. It ensures the accurate translation of the genetic code in mRNA into proteins by catalyzing the esterification of tryptophan to the tRNA^Trp. WRS is mostly found in the cytoplasm of cells across various tissues contributing to its role in protein biosynthesis.
Biological function summary	WRS is involved in the important process of protein translation ensuring fidelity in the genetic code transfer from RNA to protein. As part of the aminoacyl-tRNA synthetases family WRS helps in maintaining the overall function and stability of the translational apparatus. It is not typically known to be part of any larger

	protein complex. In addition to its core function in protein synthesis WRS possesses non-canonical roles related to immune response regulation and angiogenesis.
Pathways	WRS plays key roles in the aminoacyl-tRNA biosynthesis and mTOR signaling pathways. These pathways are essential for regulating protein synthesis and cell growth. In the mTOR pathway WRS's function relates to its interaction with proteins involved in cell growth and proliferation. Its roles within these pathways highlight its influence on cellular homeostasis and protein regulation interacting closely with other synthetases and transcription factors.
Associated diseases and disorders	WRS has associations with certain cancers and autoimmune disorders. Abnormal expression of WRS is observed in various cancer types reflecting its contribution to dysregulated protein synthesis and cell growth. Additionally WRS has been linked to autoimmune diseases like dermatomyositis where its immune-regulatory roles become compromised. In these conditions WRS's interactions with proteins such as interferons illustrate its importance in the pathophysiology of inflammation and immune response.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

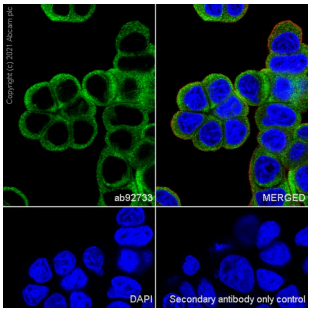
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

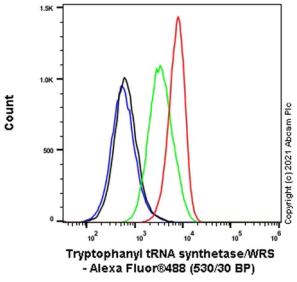
3 product images



Immunocytochemistry/ Immunofluorescence - Anti-Tryptophanyl tRNA synthetase/WRS antibody [EPR3424] - BSA and Azide free (ab247596)

Tryptophanyl tRNA synthetase/WRS Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Tryptophanyl tRNA synthetase/WRS antibody

This data was developed using ab92733, the same antibody clone in a different buffer formulation. Immunocytochemistry analysis of MCF7 (Human breast adenocarcinoma epithelial cell) cells labeling Tryptophanyl tRNA synthetase/WRS with purified ab92733 at 1:50 dilution (10.4 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) at 1/200 dilution (2.5 µg/ml) (ab195889) (red). Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI (blue) was used as a nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.

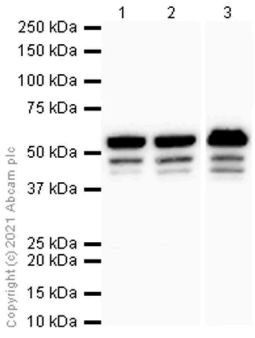


Flow Cytometry (Intracellular) - Anti-Tryptophanyl tRNA synthetase/WRS antibody [EPR3424] - BSA and Azide free (ab247596)

Tryptophanyl tRNA synthetase/WRS Flow Cytometry (Intracellular) staining using rabbit Anti-Tryptophanyl tRNA synthetase/WRS antibody

This data was developed using ab92733, the same antibody clone in a different buffer formulation.

Flow Cytometry analysis of HUVEC (Human umbilical vein endothelial cell) treated with 20ng/ml Interferon gamma for 48 hours cells labeling Tryptophanyl tRNA synthetase/WRS with purified ab92733 at 1/1000 dilution (1 µg/mL) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).
IFN gamma induction was reported in literature. (PMID: 31324718)



Western blot - Anti-Tryptophanyl tRNA synthetase/WRS antibody [EPR3424] - BSA and Azide free (ab247596)

Tryptophanyl tRNA synthetase/WRS Western blot staining using rabbit Anti-Tryptophanyl tRNA synthetase/WRS antibody

This data was developed using ab92733, the same antibody clone in a different buffer formulation. Full-length TrpRS: 54kDa; mini TrpRS: 48kDa; T1 TrpRS: 47kDa; T2 TrpRS: 44kDa. The molecular weights observed are consistent with what has been described in the literature (PMID: 29666190).
All lanes:
Western blot - Anti-Tryptophanyl tRNA synthetase/WRS antibody [EPR3424] (ab92733) at 1/1000 dilution

Lane 1:
293T (Human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 2:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
Human thyroid lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 53 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.