abcam

ab249131

Anti-Seryl-tRNA synthetase/SERS antibody [EPR10684(B)] - 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	EPR10684(B)
Purification technique	Affinity purification Protein A
Concentration	1.036 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	For antigen retrieval, heat up to 98 degree C, below boiling, and then let cool for 10-20 minutes.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information SARS1

Function Catalyzes the attachment of serine to tRNA(Ser) in a two-step reaction: serine is first activated by ATP to form Ser-AMP and then transferred to the acceptor end of tRNA(Ser) (PubMed:22353712, PubMed:24095058, PubMed:26433229, PubMed:28236339, PubMed:34570399, PubMed:36041817, PubMed:9431993). Is probably also able to aminoacylate tRNA(Sec) with serine, to form the misacylated tRNA L-seryl-tRNA(Sec), which will be further converted into selenocysteinyl-tRNA(Sec) (PubMed:26433229, PubMed:28236339, PubMed:34570399, PubMed:9431993). In the nucleus, binds to the VEGFA core promoter and prevents MYC binding and transcriptional activation by MYC (PubMed:24940000). Recruits SIRT2 to the VEGFA promoter, promoting deacetylation of histone H4 at 'Lys-16' (H4K16). Thereby, inhibits the production of VEGFA and sprouting angiogenesis mediated by VEGFA (PubMed:19423847, PubMed:19423848, PubMed:24940000).

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

ab249131 is the carrier-free version of ab154825.

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	The Seryl-tRNA synthetase also known as SERS is an enzyme responsible for catalyzing the attachment of serine to its corresponding tRNA molecule a process known as aminoacylation. SERS with a molecular mass of approximately 55 kDa finds its expression in various tissues and cell types where it plays a role in protein synthesis. It operates by ensuring that genetic information is translated accurately from nucleic acid sequences to protein sequences important in maintaining the fidelity of protein biosynthesis.
Biological function summary	Through its function of aminoacylating serine to tRNA SERS contributes to the synthesis of proteins by enabling the incorporation of serine residues into polypeptides. SERS does not act alone; instead it operates as a part of the multi-tRNA synthetase complex enhancing its enzymatic efficiency and aiding in the coordination of protein synthesis. Beyond catalysis SERS also participates in cellular response to stress and has non-canonical roles that extend its function beyond tRNA charging.
Pathways	The role of SERS in translation aligns it with pathways involving protein synthesis and amino acid metabolism. One such pathway is the mTOR signaling pathway

	which SERS influences indirectly through its role in the availability of serine-loaded tRNAs for protein synthesis. Additionally SERS is linked to serine biosynthesis pathways interconnected with proteins like PHGDH which catalyzes the first step in the serine biosynthesis from 3-phosphoglycerate.
Associated diseases and disorders	The malfunction or aberrant expression of SERS associates with Charcot-Marie-Tooth disease a neuropathy affecting peripheral nerves. Mutations in SERS can disrupt normal nerve function leading to symptoms associated with this disorder. Furthermore SERS links to cancerous processes as its non-canonical functions may influence tumor progression. In cancer SERS interacts with proteins such as oncogenes or tumor suppressors affecting cellular proliferation and survival.

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

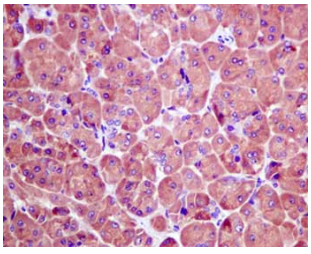
We do not recommend this combination. It is not covered by our product promise.

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.

4 product images

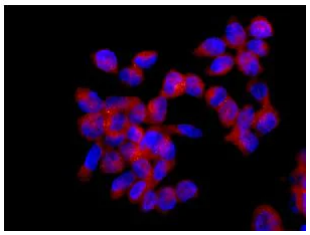


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Seryl-tRNA synthetase/SERS antibody [EPR10684(B)] - BSA and Azide free (ab249131)

Seryl-tRNA synthetase/SERS Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Seryl-tRNA synthetase/SERS antibody

This data was developed using ab154825, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human pancreas tissue labeling Seryl-tRNA synthetase/SERS with ab154825 at 1/50 dilution.

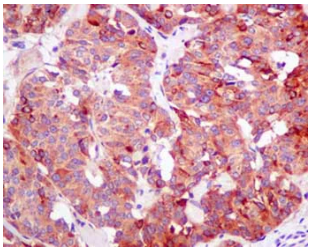
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-Seryl-tRNA synthetase/SERS antibody [EPR10684(B)] - BSA and Azide free (ab249131)

Seryl-tRNA synthetase/SERS Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Seryl-tRNA synthetase/SERS antibody

This data was developed using ab154825, the same antibody clone in a different buffer formulation.
Immunofluorescence analysis of 293T cells labeling Seryl-tRNA synthetase/SERS with ab154825 at 1/100 dilution.

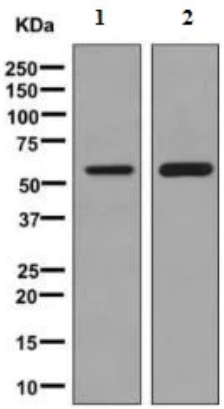


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Seryl-tRNA synthetase/SERS antibody [EPR10684(B)] - BSA and Azide free (ab249131)

Seryl-tRNA synthetase/SERS Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Seryl-tRNA synthetase/SERS antibody

This data was developed using ab154825, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human thyroid gland carcinoma tissue labeling Seryl-tRNA synthetase/SERS with ab154825 at 1/50 dilution.

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Western blot - Anti-Seryl-tRNA synthetase/SERS antibody [EPR10684(B)] - BSA and Azide free (ab249131)

Seryl-tRNA synthetase/SERS Western blot staining using rabbit Anti-Seryl-tRNA synthetase/SERS antibody

This data was developed using ab154825, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Seryl-tRNA synthetase/SERS antibody [EPR10684(B)] (ab154825) at 1/1000 dilution

Lane 1:
293T cell lysate at 10 µg

Lane 2:
K562 cell lysate at 10 µg

Predicted band size: 59 kDa

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