abcam

ab300439

Anti-Senataxin antibody [EPR24137-74]

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR24137-74
Purification technique	Affinity purification Protein A
Concentration	0.528 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IHC-Fr

Not recommended

Species	Human, Rat, Mouse
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ChIP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information SETX

Function

ATP-dependent 5'->3' DNA/RNA helicase that preferentially unwinds RNA substrates over DNA, playing a crucial role in resolving R-loops and promoting transcription termination (PubMed:36864660). Plays a role in transcription regulation by its ability to modulate RNA Polymerase II (Pol II) binding to chromatin and through its interaction with proteins involved in transcription (PubMed:19515850, PubMed:21700224). Contributes to the mRNA splicing efficiency and splice site selection (PubMed:19515850). Required for the resolution of R-loop RNA-DNA hybrid formation at G-rich pause sites located downstream of the poly(A) site, allowing XRN2 recruitment and XRN2-mediated degradation of the downstream cleaved RNA and hence efficient RNA polymerase II (RNAp II) transcription termination (PubMed:19515850, PubMed:21700224, PubMed:26700805). Required for the 3' transcriptional termination of PER1 and CRY2, thus playing an important role in the circadian rhythm regulation (By similarity). Involved in DNA double-strand breaks damage response generated by oxidative stress (PubMed:17562789). In association with RRP45, targets the RNA exosome complex to sites of transcription-induced DNA damage (PubMed:24105744). Plays a role in the development and maturation of germ cells: essential for male meiosis, acting at the interface of transcription and meiotic

recombination, and in the process of gene silencing during meiotic sex chromosome inactivation (MSCI) (By similarity). May be involved in telomeric stability through the regulation of telomere repeat-containing RNA (TERRA) transcription (PubMed:21112256). Plays a role in neurite outgrowth in hippocampal cells through FGF8-activated signaling pathways. Inhibits retinoic acid-induced apoptosis (PubMed:21576111).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

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.

Supplementary info

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

Activity summary	Senataxin also known as SETX is an RNA/DNA helicase enzyme that manages the resolution of R-loops during transcription. The protein has a molecular mass of approximately 302 kDa. SETX is expressed widely across various tissues including high levels in neural tissue. As a helicase it ensures the proper maintenance and

	stability of the genome by unwinding nucleic acid structures which is essential for transcription replication and DNA repair processes.
Biological function summary	SETX plays an important role in preventing genomic instability. It participates in RNA processing events and transcription termination where it helps resolve R-loop structures that can impede transcription. SETX also functions within protein complexes involved in the regulation of oxidative stress responses. Its interactions with other RNA-binding proteins facilitate its role in these processes ensuring efficient gene expression and cellular homeostasis.
Pathways	SETX contributes significantly to transcriptional regulation and DNA damage response pathways. In the transcription termination pathway it works alongside exonucleases and other helicases to prevent aberrant transcriptional readthrough. SETX is related to proteins like RNAPII assisting in the resolution of transcription-associated R-loops and also associating with factors involved in the DNA damage response pathway to repair transcription-blocking lesions.
Associated diseases and disorders	SETX mutations have links to neurological conditions such as Amyotrophic Lateral Sclerosis 4 (ALS4) and Ataxia Oculomotor Apraxia 2 (AOA2). These diseases relate to disrupted helicase activity leading to genomic instability and neuronal damage. In ALS4 altered interactions between SETX and other proteins like TDP-43 can contribute to motor neuron degeneration while in AOA2 the impaired role of SETX in DNA repair results in neurological symptoms.

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

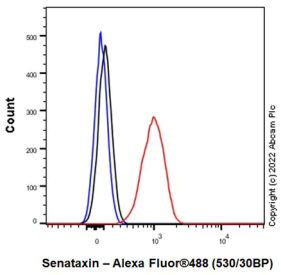
We do not recommend this combination. It is not covered by our product promise.

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.

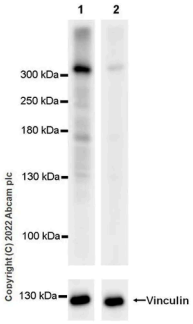
5 product images



Flow Cytometry (Intracellular) - Anti-Senataxin antibody [EPR24137-74] (ab300439)

Senataxin Flow Cytometry (Intracellular) staining of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cells using rabbit Anti-Senataxin antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cells labelling Senataxin with ab300439 at 1/50 dilution (1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Western blot - Anti-Senataxin antibody [EPR24137-74] (ab300439)

Senataxin Western blot staining using rabbit Anti-Senataxin antibody

Blocking / Diluting buffer and concentration:5% NFDM/TBST

The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID:17562789).

Lysates were freshly made and used for Western blotting immediately to minimize protein degradation.

All lanes:
Western blot - Anti-Senataxin antibody [EPR24137-74] (ab300439) at 1/1000 dilution

Lane 1:
HeLa transfected with scrambled siRNA control, whole cell lysate at 20 µg

Lane 2:
HeLa transfected with siRNA specifically targeting SETX, whole cell lysate at 20 µg

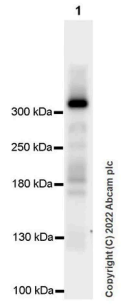
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 302 kDa

Observed band size: 300 kDa

Exposure time: 37s



Western blot - Anti-Senataxin antibody [EPR24137-74] (ab300439)

Senataxin Western blot staining of SH-SY5Y (human neuroblastoma epithelial cell), whole cell lysate using rabbit Anti-Senataxin antibody

Blocking / Diluting buffer and concentration:5% NFDM/TBST

The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID:17562789).

The lysate was freshly made and used for Western blotting immediately to minimize protein degradation.

All lanes:
Western blot - Anti-Senataxin antibody [EPR24137-74] (ab300439) at 1/1000 dilution

All lanes:
SH-SY5Y (human neuroblastoma epithelial cell), whole cell lysate at 20 µg

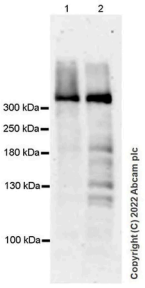
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 302 kDa

Observed band size: 300 kDa

Exposure time: 15s



Western blot - Anti-Senataxin antibody [EPR24137-74] (ab300439)

Senataxin Western blot staining using rabbit Anti-Senataxin antibody

Blocking / Diluting buffer and concentration:5% NFDM/TBST

The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID:17562789).

The bands beneath the target band are likely to be degraded target fragments.

Lysates were freshly made and used for Western blotting immediately to minimize protein degradation.

All lanes:
Western blot - Anti-Senataxin antibody [EPR24137-74] (ab300439) at 1/1000 dilution

Lane 1:
SK-N-BE(2) (human neuroblastoma neuroblast), whole cell lysate at 20 µg

Lane 2:
IMR-32 (human neuroblastoma neuroblast), whole cell lysate at 20 µg

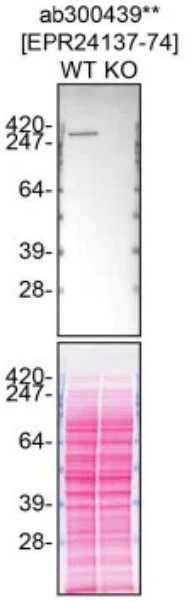
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 302 kDa

Observed band size: 300 kDa

Exposure time: 180s



Western blot - Anti-Senataxin antibody [EPR24137-74] (ab300439)

Senataxin Western blot staining using rabbit Anti-Senataxin antibody

ab300439 was shown to react with SETX in wild-type RKO cells in Western blot with loss of signal observed in SETX knockout cell line ab324539. Wild-type RKO and SETX knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with ab300439 overnight at 4 °C at a 1/500 dilution. Blots were incubated with secondary antibodies at 0.2 µg/mL before imaging.
This data was provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.

All lanes:
Western blot - Anti-Senataxin antibody [EPR24137-74] (ab300439) at 1/500 dilution

Lane 1:
Wild-type RKO lysate at 50 µg

Lane 2:
Western blot - Human SETX knockout RKO cell line (ab324539) at 50 µg

Predicted band size: 302 kDa

Observed band size: 300 kDa

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