abcam

ab134091

Anti-SESN1 antibody [EPR1930(2)]

Recombinant | RabMAb

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	EPR1930(2)
Purification technique	Affinity purification Protein A
Dissociation constant	2.08 x 10^{-10} M
Concentration	0.669 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/10000
Notes	-

Species	Rat
Dilution info	1/1000 - 1/10000
Notes	-

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100 - 1/500

Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information SESN1

Function	Functions as an intracellular leucine sensor that negatively regulates the TORC1 signaling pathway through the GATOR complex. In absence of leucine, binds the GATOR subcomplex GATOR2 and prevents TORC1 signaling. Binding of leucine to SESN2 disrupts its interaction with GATOR2 thereby activating the TORC1 signaling pathway (PubMed:25263562, PubMed:26449471). This stress-inducible metabolic regulator may also play a role in protection against oxidative and genotoxic stresses (By similarity). May positively regulate the transcription by NFE2L2 of genes involved in the response to oxidative stress by facilitating the SQSTM1-mediated autophagic degradation of KEAP1 (PubMed:23274085). Moreover, may prevent the accumulation of reactive oxygen species (ROS) through the alkylhydroperoxide reductase activity born by the N-terminal domain of the protein (By similarity). Was originally reported to contribute to oxidative stress resistance by reducing PRDX1 (PubMed:15105503). However, this could not be confirmed (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

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	SESN1 also known as Sestrin-1 is a protein that has significant significance in cellular stress responses. It has a molecular weight of approximately 57 kDa. This protein mainly expresses in tissues such as liver skin and heart. Sestrin-1 acts as a regulator of cellular homeostasis modulating factors tied to oxidative stress correction. The protein carries antioxidant properties mediating the regeneration of peroxiredoxins which are important for detoxifying peroxides within cells.
Biological function summary	The Sestrin-1 protein plays a role in the cellular defense against oxidative damage. It incorporates into complexes that participate in inhibiting the activity of the mechanistic target of rapamycin complex 1 (mTORC1) a critical regulator of cell growth and metabolism. Sestrin-1 achieves this by activating AMP-activated protein kinase (AMPK) which serves as an energy sensor in the cell. Additionally it can suppress free radical accumulation during periods of cellular stress helping to prevent damage to DNA and proteins.
Pathways	Sestrin-1 is a vital component of the signaling pathways that involve the AMPK and mTOR pathways. It interacts actively with proteins such as TSC2 in mTOR signaling and LKB1 in the AMPK pathway. Through these pathways Sestrin-1 influences the regulation of protein synthesis and autophagy. It acts as a link between energy status and cellular growth control underpinning its involvement in adaptive cellular responses to environmental stresses.
Associated diseases and disorders	Sestrin-1 involvement connects to conditions like cancer and neurodegenerative diseases. In cancer its role in inhibiting the mTORC1 pathway gives it potential anti-tumorigenic properties as overactive mTOR signaling can lead to uncontrolled cell proliferation. Additionally in neurodegenerative disorders Sestrin-1 reduces stress-induced neuronal damage through its antioxidant functions. Sestrin-1 interacts with proteins like p53 a well-known tumor suppressor to aid in cellular protective mechanisms providing a link between its protective role and disease suppression.

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

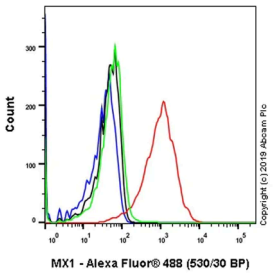
We do not recommend this combination. It is not covered by our product promise.

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.

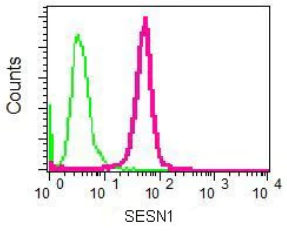
5 product images



Flow Cytometry (Intracellular) - Anti-SESN1 antibody [EPR1930(2)] (ab134091)

SESN1 Flow Cytometry (Intracellular) staining using rabbit Anti-SESN1 antibody

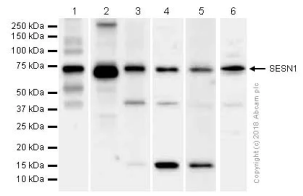
Intracellular Flow Cytometry analysis of Daudi (Human Burkitt's lymphoma lymphoblast) cells treated with 20 U/ml IFN alpha 1 for 24 hours (Red) / Untreated control (Green) labelling Anti-SESN1 with unpurified ab207414 at 1/600 dilution.Cells were fixed with 2% paraformaldehyde. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody. Black - isotype control, Rabbit monoclonal IgG (ab172730). Blue -unlabelled control,cells without incubation with primary and secondary antibodies.



Flow Cytometry (Intracellular) - Anti-SESN1 antibody [EPR1930(2)] (ab134091)

SESN1 Flow Cytometry (Intracellular) staining using rabbit Anti-SESN1 antibody

Intracellular Flow Cytometry analysis of permeabilized K562 cells labeling SESN1 with unpurified ab134091 at 1/100 dilution (red). Rabbit IgG (negative control) shown in green.



Western blot - Anti-SESN1 antibody [EPR1930(2)] (ab134091)

SESN1 Western blot staining using rabbit Anti-SESN1 antibody

The bands observed are consistent with what has been described in PMID: 29751091 and PMID: 29263116
All lanes:
Western blot - Anti-SESN1 antibody [EPR1930(2)] (ab134091) at 1/1000 dilution

Lane 1:
Human heart lysates at 15 µg

Lane 2:
K-562 (Human chronic myelogenous leukemia lymphoblast) whole cell lysates at 15 µg

Lane 3:
F9 (Mouse embryonal carcinoma epithelial cell) whole cell lysates at 15 µg

Lane 4:
C2C12 (Mouse myoblasts myoblast) whole cell lysates at 15 µg

Lane 5:
NIH/3T3 (Mouse embryonic fibroblast) whole cell lysates at 15 µg

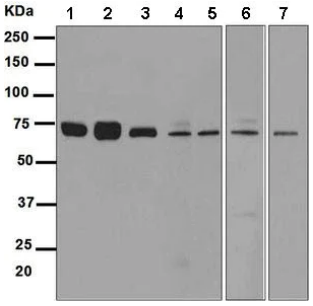
Lane 6:
Rat heart lysates at 15 µg

Secondary

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

Predicted band size: 57 kDa

Observed band size: 65 kDa



Western blot - Anti-SESN1 antibody [EPR1930(2)] (ab134091)

All lanes:
Western blot - Anti-SESN1 antibody [EPR1930(2)] (ab134091) at 1/1000 dilution

Lane 1:
Ramos cell lysate at 10 µg

Lane 2:
K562 cell lysate at 10 µg

Lane 3:
HeLa cell lysate at 10 µg

Lane 4:
C2C12 cell lysate at 10 µg

Lane 5:
NIH3T3 cell lysate at 10 µg

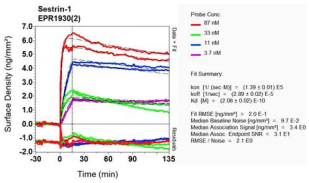
Lane 6:
F9 cell lysate at 10 µg

Lane 7:
JAR cell lysate at 10 µg

Secondary

All lanes:
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 57 kDa



OI-RD Scanning - Anti-SESN1 antibody [EPR1930(2)] (ab134091)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

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