abcam

ab232032

Anti-Sumo 2 + Sumo 3 + Sumo 4 antibody [EPR7163] - 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	EPR7163
Purification technique	Affinity purification Protein A
Concentration	1.005 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	-

Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

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 SUMO2

Function	Ubiquitin-like protein that can be covalently attached to proteins as a monomer or as a lysine-linked polymer. Covalent attachment via an isopeptide bond to its substrates requires prior activation by the E1 complex SAE1-SAE2 and linkage to the E2 enzyme UBE2I, and can be promoted by an E3 ligase such as PIAS1-4, RANBP2, CBX4 or ZNF451 (PubMed:26524494). This post-translational modification on lysine residues of proteins plays a crucial role in a number of cellular processes such as nuclear transport, DNA replication and repair, mitosis and signal transduction. Polymeric SUMO2 chains are also susceptible to polyubiquitination which functions as a signal for proteasomal degradation of modified proteins (PubMed:18408734, PubMed:18538659, PubMed:21965678, PubMed:9556629). Plays a role in the regulation of sumoylation status of SETX (PubMed:24105744).

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

ab232032 is the carrier-free version of ab126606.

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	SUMO (Small Ubiquitin-like Modifier) proteins specifically SUMO-2 SUMO-3 and SUMO-4 are small proteins involved in modifying other proteins post-translationally. SUMO-2 and SUMO-3 are nearly identical while SUMO-4 shows some distinct differences. These proteins with an average mass of around 11 kDa covalently attach to lysine residues on target proteins a process known as SUMOylation. Expression of these proteins is widespread throughout eukaryotic cells with high expression levels in the brain heart and liver. SUMO-2 and SUMO-3 often function interchangeably forming poly-SUMO chains unlike SUMO-1.
Biological function summary	Through the attachment to target proteins these SUMO proteins influence various cellular processes like nuclear-cytosolic transport transcriptional regulation and DNA repair. SUMO-2 and SUMO-3 often act as part of a complex with other SUMO proteins enhancing their functional diversity. SUMOylation can alter protein-protein interactions and stabilize protein structure impacting gene expression and cellular response to stress. SUMO-4 due to a unique proline residue shows distinct regulatory functions particularly in stress responses and immune reactions.
Pathways	Protein SUMOylation plays an important role in major signaling pathways such as the NF-kB and p53 pathways. SUMO-2 and SUMO-3 modification can regulate the activity of p53 an important transcription factor in cell cycle control and apoptosis. Their association with the NF-kB pathway influences inflammatory responses. Importantly these modifications can affect proteins like IκBα and MDM2 which are directly involved in regulating NF-kB and p53 activities showing their involvement in maintaining cellular homeostasis and stress responses.
Associated diseases and disorders	Dysregulation of SUMOylation involving SUMO-2 SUMO-3 and potentially SUMO-4 is linked to cancer and neurodegenerative diseases. In cancer altered SUMO conjugation can influence cell proliferation and apoptosis affecting tumor suppressors like p53. In neurodegenerative disorders such as Alzheimer's disease impaired SUMOylation processes might contribute to the abnormal aggregation of proteins like tau. These associations highlight the significance of SUMO proteins in maintaining cellular health and their potential as therapeutic targets in these diseases.

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.

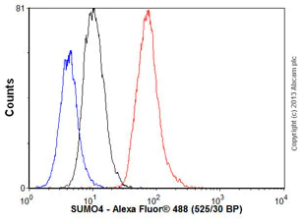
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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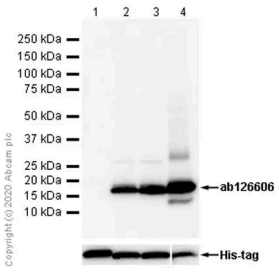
3 product images



Flow Cytometry (Intracellular) - Anti-Sumo 2 + Sumo 3 + Sumo 4 antibody [EPR7163] - BSA and Azide free (ab232032)

Sumo 2 + Sumo 3 + Sumo 4 Flow Cytometry (Intracellular) staining using rabbit Anti-Sumo 2 + Sumo 3 + Sumo 4 antibody

Overlay histogram showing HEK293 cells stained with ab126606 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab126606, 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150077) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.
This data was developed using the same antibody clone in a different buffer formulation (ab126606).



Western blot - Anti-Sumo 2 + Sumo 3 + Sumo 4 antibody [EPR7163] - BSA and Azide free (ab232032)

Sumo 2 + Sumo 3 + Sumo 4 Western blot staining using rabbit Anti-Sumo 2 + Sumo 3 + Sumo 4 antibody

Blocking buffer: 5% NFDM/TBST
This data was developed using ab126606, the same antibody clone in a different buffer formulation.

All lanes:
Western blot - Anti-Sumo 2 + Sumo 3 + Sumo 4 antibody [EPR7163] (ab126606) at 1/5000 dilution

Lane 1:
Western blot - Recombinant Human Sumo 1 protein (His tag N-Terminus) (ab140417) at 0.01 µg

Lane 2:
Western blot - Recombinant Human Sumo 2 protein (ab140420) at 0.01 µg

Lane 3:
Recombinant Human Sumo 3 protein (ab140414) at 0.01 µg

Lane 4:
Western blot - Recombinant Human Sumo 4 protein (ab157025) at 0.1 µg

Secondary

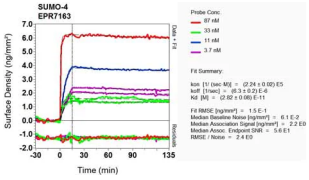
All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Developed using the ECL technique.

Predicted band size: 11 kDa

Observed band size: 16 kDa

Exposure time: 3s



OI-RD Scanning - Anti-Sumo 2 + Sumo 3 + Sumo 4 antibody [EPR7163] - BSA and Azide free (ab232032)

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'.