abcam

Product datasheet

Anti-Superoxide Dismutase 1 antibody [EP1727Y] ab51254

KO VALIDATED Recombinant RabMAb

4 Abreviews 31 References 11 Images

Overview

Product name	Anti-Superoxide Dismutase 1 antibody [EP1727Y]
Description	Rabbit monoclonal [EP1727Y] to Superoxide Dismutase 1
Host species	Rabbit
Tested applications	**Suitable for:** Flow Cyt (Intra), WB, IHC-P, ICC/IF **Unsuitable for:** IP
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
Positive control	IHC-P: Mouse cerebrum, rat liver and human breast carcinoma tissue WB: Jurkat cell lysate; Mouse and rat brain tissue lysates. ICC/IF: HeLa, PC-12 and NIH/3T3 cells. Flow Cyt (intra): HeLa cells.
General notes	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 production For more information **see here**. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
Storage buffer	pH: 7.20 Preservative: 0.05% Sodium azide Constituents: 0.1% BSA, 40% Glycerol (glycerin, glycerine), 9.85% Tris glycine, 50% Tissue culture supernatant
Purity	Protein A purified

Clonality	Monoclonal
Clone number	EP1727Y
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab51254 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

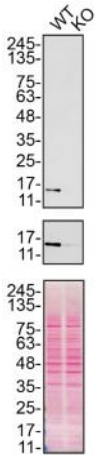
Application	Abreviews	Notes
Flow Cyt (Intra)		1/100. **ab172730** - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.
WB	★★★★★ (3)	1/50000. Detects a band of approximately 18 kDa (predicted molecular weight: 16 kDa).
IHC-P		1/1000. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
ICC/IF		1/100 - 1/250.

Application notes Is unsuitable for IP.

Target

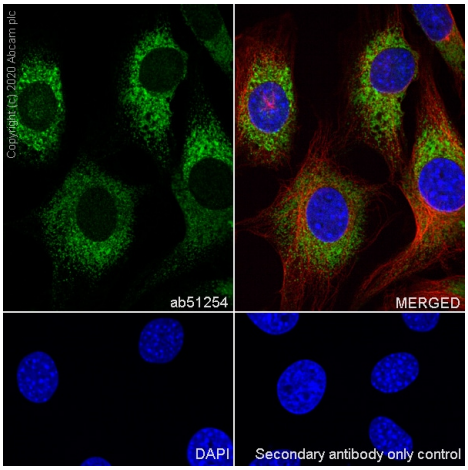
Function	Destroys radicals which are normally produced within the cells and which are toxic to biological systems.
Involvement in disease	Defects in SOD1 are the cause of amyotrophic lateral sclerosis type 1 (ALS1) [MIM:105400]. ALS1 is a familial form of amyotrophic lateral sclerosis, a neurodegenerative disorder affecting upper and lower motor neurons and resulting in fatal paralysis. Sensory abnormalities are absent. Death usually occurs within 2 to 5 years. The etiology of amyotrophic lateral sclerosis is likely to be multifactorial, involving both genetic and environmental factors. The disease is inherited in 5-10% of cases leading to familial forms.
Sequence similarities	Belongs to the Cu-Zn superoxide dismutase family.
Post-translational modifications	Unlike wild-type protein, the pathogenic variants ALS1 Arg-38, Arg-47, Arg-86 and Ala-94 are polyubiquitinated by RNF19A leading to their proteasomal degradation. The pathogenic variants ALS1 Arg-86 and Ala-94 are ubiquitinated by MARCH5 leading to their proteasomal degradation. The ditryptophan cross-link at Trp-33 is reponsible for the non-disulfide-linked homodimerization. Such modification might only occur in extreme conditions and additional experimental evidence is required.
Cellular localization	Cytoplasm. The pathogenic variants ALS1 Arg-86 and Ala-94 gradually aggregates and accumulates in mitochondria.

Images



Western blot - Anti-Superoxide Dismutase 1 antibody [EP1727Y] (ab51254)

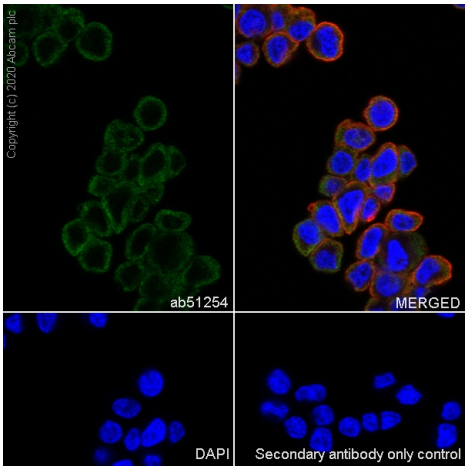
ab51254 was shown to react with SOD1 in wild-type HeLa cells in Western blot with loss of signal observed in a SOD1 knockout cell line. Wild-type HeLa and SOD1 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with ab51254 overnight at 4 °C at a 1/15000 dilution. Blots were incubated with goat anti-rabbit HRP secondary antibodies at 0.2 µg/ml before imaging. These data were 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.



Immunocytochemistry/ Immunofluorescence - Anti-Superoxide Dismutase 1 antibody [EP1727Y] (ab51254)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized NIH/3T3 cells labelling Superoxide Dismutase 1 with ab51254 at 1/100 dilution, followed by **ab150077** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 2 ug/ml dilution (Green). Confocal image showing cytoplasmic and weak nuclear staining in NIH/3T3 cell line **ab195889** Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5 dilution (Red). The Nuclear counterstain was DAPI (Blue).

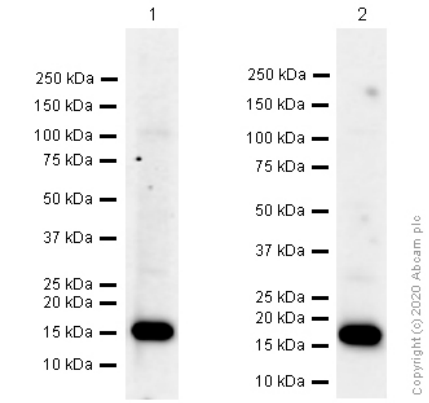
Secondary antibody only control: Secondary antibody is **ab150077** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1000 2 ug/ml dilution.



Immunocytochemistry/ Immunofluorescence - Anti-Superoxide Dismutase 1 antibody [EP1727Y] (ab51254)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized PC-12 cells labelling Superoxide Dismutase 1 with ab51254 at 1/100 dilution, followed by **ab150077** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 2 ug/ml dilution (Green). Confocal image showing cytoplasmic staining in PC-12 cell line **ab195889** Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5 dilution (Red). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is **ab150077** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1000 2 ug/ml dilution.



Western blot - Anti-Superoxide Dismutase 1 antibody [EP1727Y] (ab51254)

All lanes : Anti-Superoxide Dismutase 1 antibody [EP1727Y] (ab51254) at 0.015 µg/ml

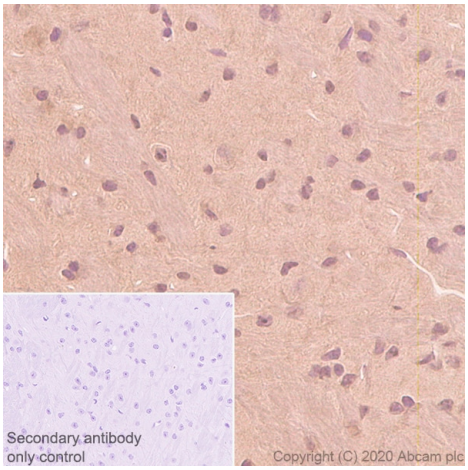
Lane 1 : Mouse brain tissue lysate
Lane 2 : Rat brain tissue lysate

Lysates/proteins at 20 µg per lane.

Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 0.05 µg/ml

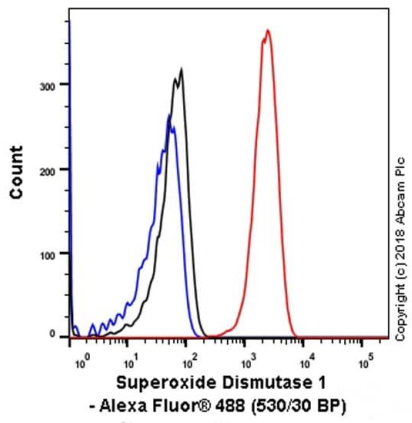
Predicted band size: 16 kDa
Observed band size: 18 kDa

Blocking/diluting Buffer and concentration: 5% NFDM /TBST



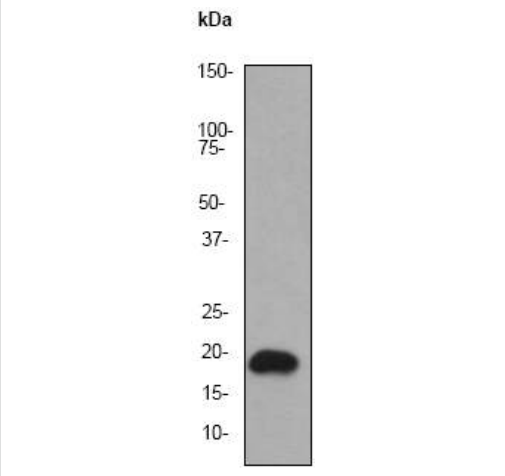
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Superoxide Dismutase 1 antibody [EP1727Y] (ab51254)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse cerebrum tissue sections labeling Superoxide Dismutase 1 with purified ab51254 at 1/1000 dilution (0.15 µg/ml).
Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins. Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**) was used as the secondary antibody. Negative control: secondary antibody only control. Hematoxylin was used as a counterstain.



Flow Cytometry (Intracellular) - Anti-Superoxide Dismutase 1 antibody [EP1727Y] (ab51254)

Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling Superoxide Dismutase 1 with ab51254 at 1/20 dilution (1µg) (Red). Goat anti rabbit IgG (Alexa Fluor® 488, **ab150077**) at 1/2000 dilution was used as the secondary antibody. Cells were fixed with4% paraformaldehyde. Rabbit monoclonal IgG (**ab172730**) was used as isotype control (Black). Unlabelled control: Cells without incubation with primary antibody and secondary antibody (Blue).



Western blot - Anti-Superoxide Dismutase 1 antibody [EP1727Y] (ab51254)

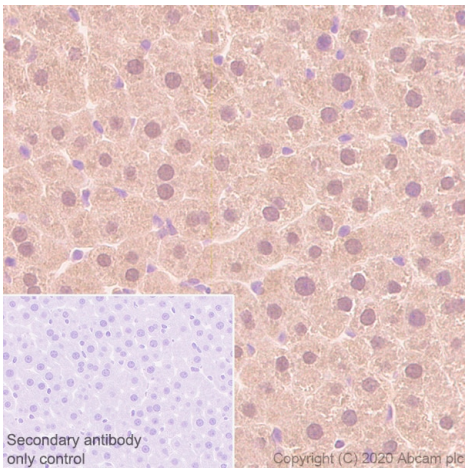
Anti-Superoxide Dismutase 1 antibody [EP1727Y] (ab51254) at 1/50000 dilution + Jurkat cell lysate at 10 µg

Secondary

Goat anti-rabbit HRP labeled at 1/2000 dilution

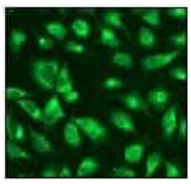
Predicted band size: 16 kDa

Observed band size: 18 kDa



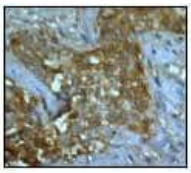
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Superoxide Dismutase 1 antibody [EP1727Y] (ab51254)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat liver tissue sections labeling Superoxide Dismutase 1 with purified ab51254 at 1/1000 dilution (0.15 µg/ml). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins. Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**) was used as the secondary antibody. Negative control: secondary antibody only control. Hematoxylin was used as a counterstain.



Immunocytochemistry/ Immunofluorescence - Anti-Superoxide Dismutase 1 antibody [EP1727Y] (ab51254)

Immunofluorescent staining of HeLa cells using ab51254 (1:100).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Superoxide Dismutase 1 antibody [EP1727Y] (ab51254)

Ab51254 (1:100) staining human Superoxide Dismutase 1 in human breast carcinoma tissue by immunohistochemistry using paraffin embedded tissue.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Anti-Superoxide Dismutase 1 antibody [EP1727Y] (ab51254)

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit **https://www.abcam.com/abpromise** or contact our technical team.

Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors