# Mn SOD polyclonal antibody

SOD (Superoxide dismutase) is responsible for the elimination of cytotoxic active oxygen by catalyzing the dismutation of the superoxide radical to oxygen and hydrogen peroxide. There are three SOD isoenzymes in mammalian cells, they are: EC SOD (extracellular SOD), Cu/Zn SOD (copper and zinc-containing SOD) and Mn SOD (manganese-containing SOD).

**This antibody is covered by our Worry-Free Guarantee.**

**Citations:** 56 View Online »

## Ordering Information Order Online »

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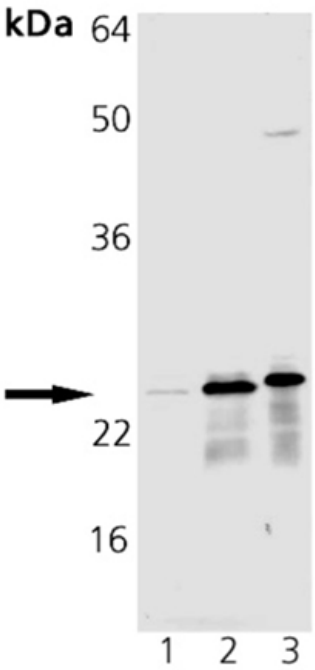
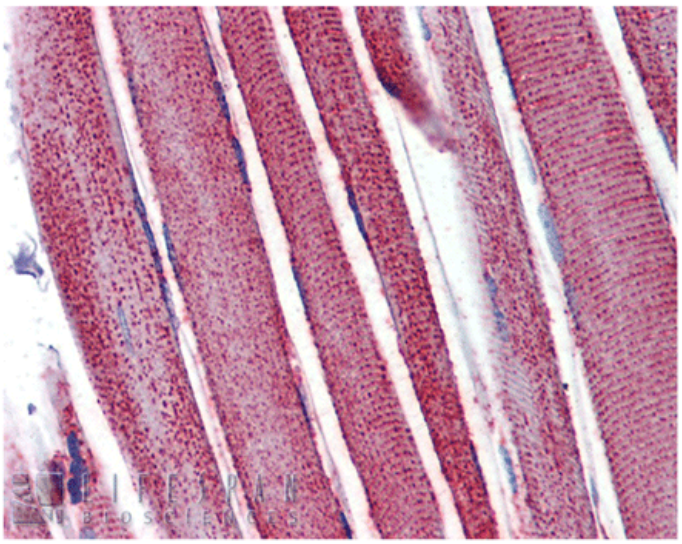
|---|---|
| **ADI-SOD-111-D** | 50µg |
| **ADI-SOD-111-F** | 200µg |

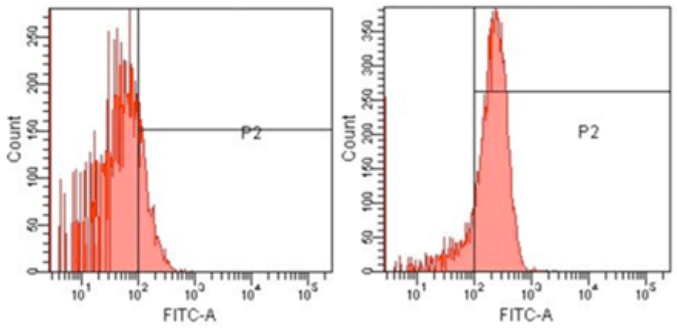
## Manuals, SDS & CofA View Online »



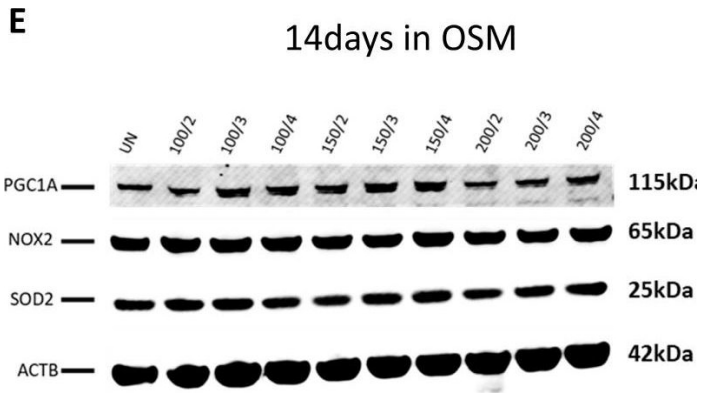

Western blot analysis of MnSOD pAb: Lane 1: HeLa Cell Lysate, Lane 2: Rat Brain Tissue Extract, Lane 3: Mouse Brain Tissue Extract



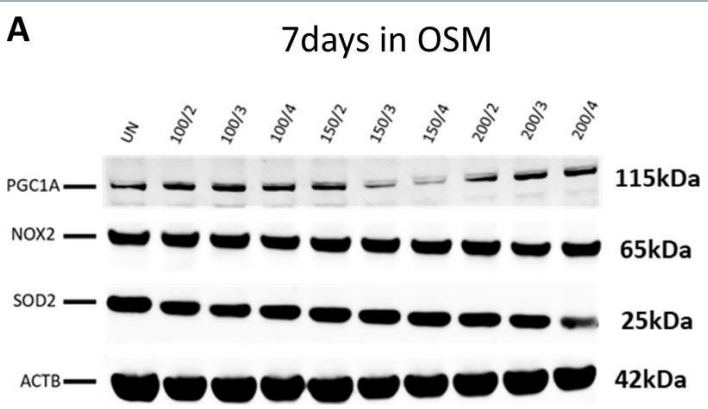
Immunohistochemistry analysis of human skeletal muscle tissue stained with Mn SOD, pAb at 10µg/ml.




Flow cytometry analysis of U251 cells using Mn SOD, pAb (right) and control rabbit IgG (left).




PGC1A, NOX2, and SOD2 protein levels. Band intensity in Western blots for PGC1A, NOX2, and SOD2 on days 7 (A–D) and 14 (E–H) was quantified using the ACTB protein for normalisation and expressed as relative abundance compared to the 150/2 and UN groups (n = 3). All data are presented as mean ± SD. *, a, e for $p < 0.05$; **, &&, f for $p < 0.01$; &&&, c, g for $p < 0.001$; and ****, d for $p < 0.0001$. Asterisks (*) indicate comparisons with 150/2 on day 7 and ampersands (&) on day 14; letters a, c, and d indicate comparisons with UN on day 7 and letters e, f, and g on day 14.

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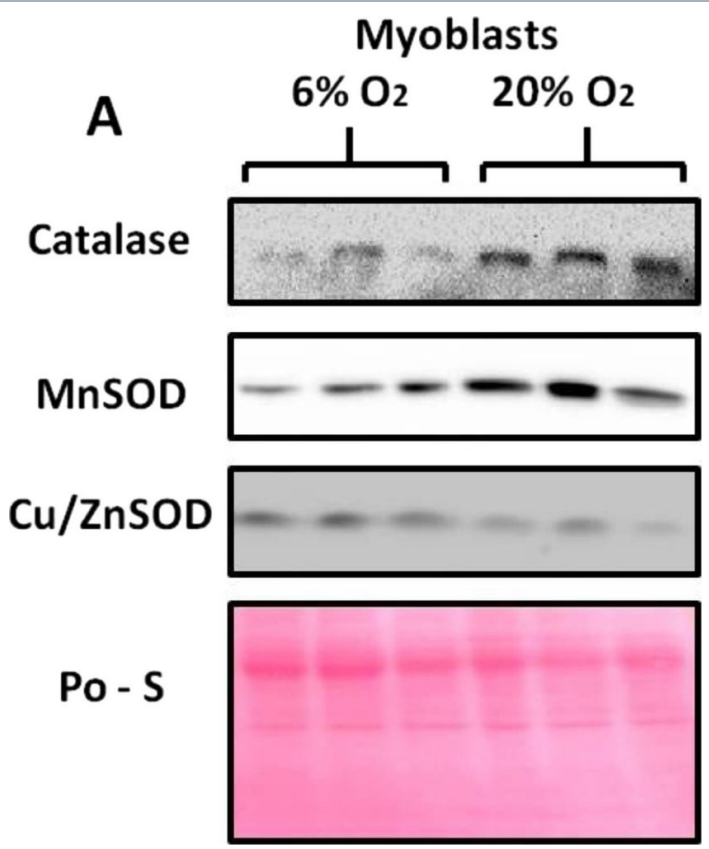
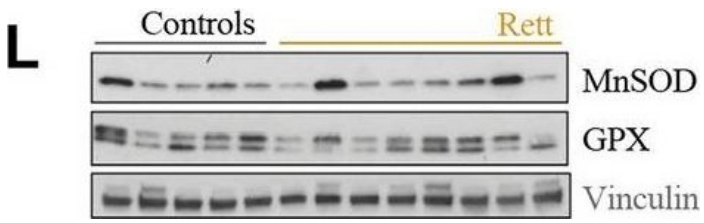
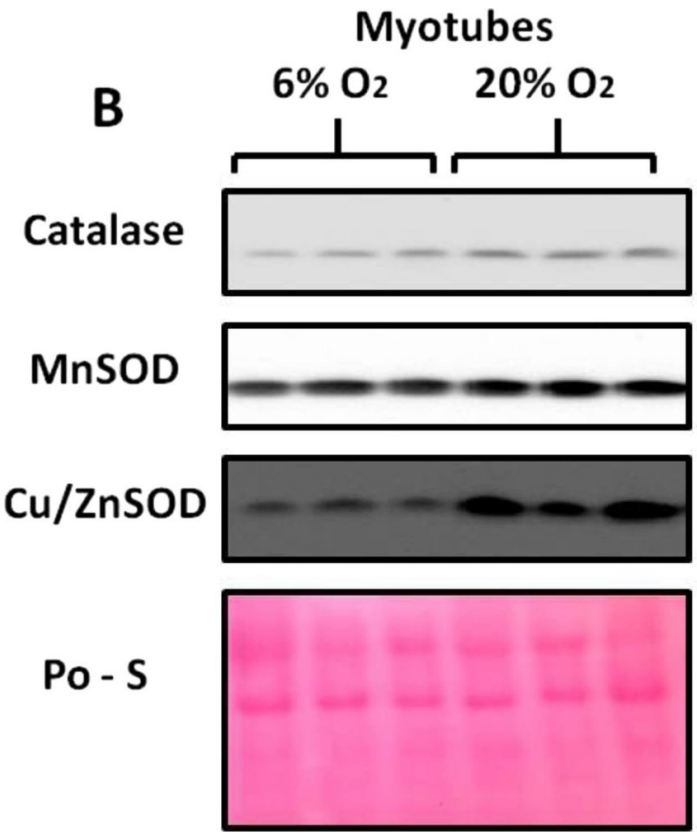



Representative western blots of catalase, MnSOD and Cu/ZnSOD in (A) myoblasts and (B) myotubes grown in 20% or 6% O2 environments. Ponceau S staining (Po-S) shows equal amount of protein loading.




Rett syndrome primary fibroblasts recapitulate alterations in mitochondrial homeostasis. We have focused the analysis on mitochondrial shape (A–H) and energy production (I–N). Mitochondrial network shape was studied by immunofluorescence of mitochondrial marker TOMM20 and parametrization with “Mitochondria Analyzer” plugin; A representative image of mitochondrial network IF (TOMM20 in yellow, nuclei in blue, and tubulin in grey; scale bar 10 μm; 6× zoomed section included in the white box) and (B) parametrization of number of independent networks corrected by area and mean form factor (a shape measure given by: P^2/(4piA): 1 indicates round object and increases with elongation, expressed as mean FF of objects in image), number of branches per mitochondrial network, and mean branch length and diameter. C–E Analysis and densitometry quantification of mitochondrial dynamics associated proteins Mfn2, OPA1, Drp1 and Fis1 by Western blot and corrected by vinculin. F Quantification of the fission and fusion events from in vivo imaging of mitochondrial network. Analysis of mitochondrial ultrastructure was performed by transmission electron microscopy; G representative images (scale bar 300 nm) and H parametrization of number of cristae per mitochondria, cristae length and width, and mitochondrial major:minor axis ratio. I Non-glycolytic ATP production –assumed as mitochondrial ATP– measured by luciferin-luciferase luminescence upon incubation with 2-deoxyglucose. J Mitochondrial respiration profile was measured by Seahorse in the presence of oligomycin, FCCP and Antimycin A. Oligomycin Sensitive Respiration (OSR) was calculated as the difference of oxygen consumption before and after adding oligomycin (considered as ATP-linked respiration). K O2.− production measured by flow cytometry with the MitoSOX probe L Expression of antioxidant enzymes MnSOD and GPX by Western blot, and M quantification of densitometry corrected by vinculin. N Oxidative damage was detected based on the fluorescence of RNA oxidative damage marker 8-OHdG, showed with the intensity-revealing LUT “royal” (calibration bar shown at the lower right corner of the panel), at 63× magnification; scale bar represents 10 μm, and represented as relative frequency of intensity values, calculated with Fiji software. All experiments were done in at least two different Rett and control cell

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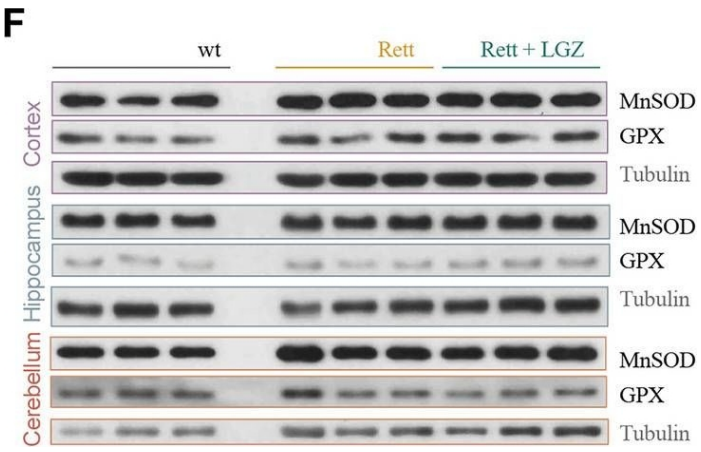


Correction by LGZ of the bioenergetic component in hippocampus and cerebellum, together with a phenotypic amelioration in symptomatic Rett mice. A Treatment with LGZ was assayed in Rett mice, treating them from weaning until sacrifice at the symptomatic stage (7 m.o.). Both ATP concentration (detected by bioluminescence) and lipid peroxidation (detected by TBARS) were assayed in untreated and LGZ-treated Rett mice in B cortex, C hippocampus and D cerebellum. E to G show results regarding oxidative stress and antioxidant markers in the brain areas of interest. E Detection of the RNA oxidative damage marker 8-OHdG in cerebellum by immunofluorescence. 8-OHdG staining is shown in magenta and calbindin in yellow for Purkinje cells in the upper images at 10× magnification; in the lower images 8-OHdG is shown with the intensity-revealing LUT “Green Fire Blue”, with a 2× electronic zoom; scale bar represents 50 μm in both images. F Antioxidant markers MnSOD and GPX in cortex, hippocampus and cerebellum detected by western blot, and their respective densitometry quantification, normalized by tubulin (G). Phenotypical characterization of the treated mice, registering an improvement in the General Health Score (H), which was maintained until the endpoint (I) and a recovery of the explorative behaviour of Rett mice upon treatment in the NOR-test (J). All experiments were done in at least three different mice, with three technical replicates and each experiment was done in triplicated (except for lipid peroxidation). Statistical analysis was performed as described in Materials and Methods. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$, ****$p < 0.0001$. Absence of asterisk means no statistically significant difference. Wild-type female mice in grey; Rett female mice in yellow; LGZ-treated Rett female mice in green

## Handling & Storage

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| **Handling** | Avoid freeze/thaw cycles. |
| **Long Term Storage** | -20°C |
| **Shipping** | Blue Ice |

## Regulatory Status

RUO - Research Use Only

## Product Details

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|---|---|
| **Alternative Name** | Manganese superoxide dismutase |
| **Application** | ELISA, Flow Cytometry, IHC (PS), IP, WB |
| **Application Notes** | Detects a band of ~25kDa by Western blot. |
| **Formulation** | Liquid. In sodium phosphate buffer, pH 7.0, containing 15mg/ml BSA, 0.09% sodium azide, and 50% glycerol. |
| **Gene/Protein Identifier** | NP_058747 (RefSeq) |
| **Host** | Rabbit |
| **Immunogen** | Native rat Mn SOD. |
| **Purity Detail** | Immunoaffinity purified. |
| **Recommendation Dilutions/Conditions** | Flow Cytometry (1:100)Immunoprecipitation (1:100)Western Blot (1:1,000, colorimetric)Suggested dilutions/conditions may not be available for all applications.Optimal conditions must be determined individually for each application. |
| **Source** | Purified from rabbit serum. |
| **Species Reactivity** | Bovine, Chicken, Clam, Dog, Drosophila, Guinea pig, Hamster, Human, Monkey, Mouse, Porcine, Rabbit, Rat, Sheep, Xenopus |
| **UniProt ID** | P07895 |

## Worry-free Guarantee

**This antibody is covered by our Worry-Free Guarantee .**

**Last modified: May 29, 2024**

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