Anti-Superoxide Dismutase 1 Antibody [JF1005] ET1702-36

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IF-Cell, IHC-P, FC
Molecular Wt:	Predicted band size: 16 kDa
Clone number:	JF1005

Description: Cu-Zn superoxide dismutase-1 (SOD-1) is a well characterized cytosolic scavenger of oxygen free radicals that requires copper and zinc binding to potentiate its enzymatic activity. Enzymatically, SOD-1 facilitates the dismutation of oxygen radicals to hydrogen peroxide and also catalyzes pro-oxidant reactions, which include the peroxidase activity and hydroxyl radical generating activity. SOD-1 is ubiquitously expressed in somatic cells and functions as a homodimer. Defects in the gene encoding SOD-1 have been implicated in the progression of neurological diseases, including amyotrophic lateral sclerosis (ALS), a neurodegenerative disease characterized by the loss of spinal motor neurons, Down syndrome and Alzheimer's disease. In familial ALS, several mutations in SOD-1 predominate, resulting in the loss of zinc binding, the loss of scavenging activity of SOD-1, and correlate with an increase in neurotoxicity and motor neuron death.

Immunogen: Synthetic peptide within Human Superoxide Dismutase 1 aa 105-154 / 154.

Positive control: RAW264.7 cell lysate, C2C12 cell lysate, Mouse brain tissue lysate, Mouse liver tissue lysate, Mouse hippocampus tissue lysate, Mouse stomach tissue lysate, Mouse smooth muscle tissue lysate, MCF7 cell lysate, HepG2 cell lysate, HUVEC cell lysate, SH-SY5Y cell lysate, Human liver tissue lysate, mouse kidney tissue, mouse lung tissue, mouse cerebellum tissue, mouse liver tissue, rat cerebellum tissue, rat liver tissue, HeLa.

Subcellular location: Cytoplasm, Mitochondrion, Nucleus.

Database links: SwissProt: P00441 Human | P08228 Mouse | P07632 Rat

Recommended Dilutions:

WB	1:1,000-1:2,000
IF-Cell	1:50-1:100
IHC-P	1:1,000-1:2,000
FC	1:1,000

Storage Buffer: 1*TBS (pH7.4), 0.05% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Store at +4℃ after thawing. Aliquot store at -20℃ or -80℃. Avoid repeated freeze / thaw cycles.

Purity: Protein A affinity purified.

Images

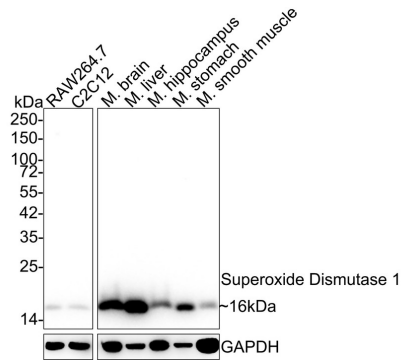

Fig1: Western blot analysis of Superoxide Dismutase 1 on different lysates with Rabbit anti-Superoxide Dismutase 1 antibody (ET1702-36) at 1/1,000 dilution.

Lane 1: RAW264.7 cell lysate (20 µg/Lane)
Lane 2: C2C12 cell lysate (20 µg/Lane)
Lane 3: Mouse brain tissue lysate (40 µg/Lane)
Lane 4: Mouse liver tissue lysate (40 µg/Lane)
Lane 5: Mouse hippocampus tissue lysate (40 µg/Lane)
Lane 6: Mouse stomach tissue lysate (40 µg/Lane)
Lane 7: Mouse smooth muscle tissue lysate (40 µg/Lane)

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

Exposure time: 24 seconds; ECL: K1801;
4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (ET1702-36) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

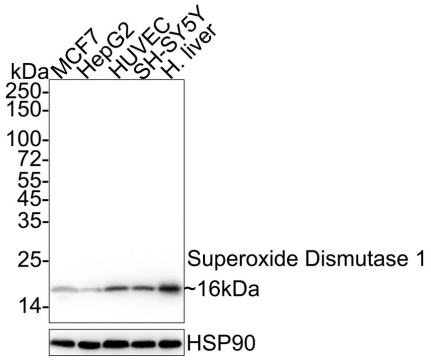

Fig2: Western blot analysis of Superoxide Dismutase 1 on different lysates with Rabbit anti-Superoxide Dismutase 1 antibody (ET1702-36) at 1/1,000 dilution.

Lane 1: MCF7 cell lysate (20 µg/Lane)
Lane 2: HepG2 cell lysate (20 µg/Lane)
Lane 3: HUVEC cell lysate (20 µg/Lane)
Lane 4: SH-SY5Y cell lysate (20 µg/Lane)
Lane 5: Human liver tissue lysate (40 µg/Lane)

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

Exposure time: 1 second; ECL: K1801;
4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (ET1702-36) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

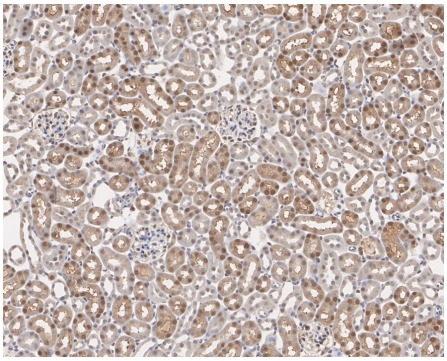

Fig3: Immunohistochemical analysis of paraffin-embedded mouse kidney tissue with Rabbit anti-Superoxide Dismutase 1 antibody (ET1702-36) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ET1702-36) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

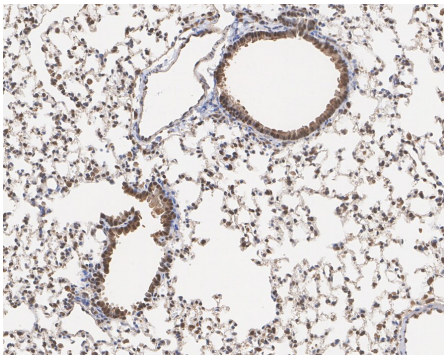

Fig4: Immunohistochemical analysis of paraffin-embedded mouse lung tissue with Rabbit anti-Superoxide Dismutase 1 antibody (ET1702-36) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ET1702-36) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

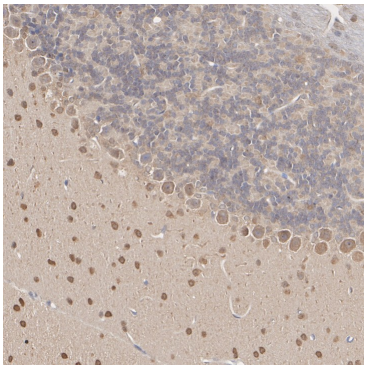

Fig5: Immunohistochemical analysis of paraffin-embedded mouse cerebellum tissue with Rabbit anti-Superoxide Dismutase 1 antibody (ET1702-36) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ET1702-36) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

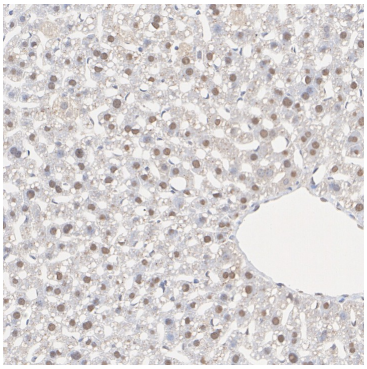

Fig6: Immunohistochemical analysis of paraffin-embedded mouse liver tissue with Rabbit anti-Superoxide Dismutase 1 antibody (ET1702-36) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ET1702-36) at 1/2,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

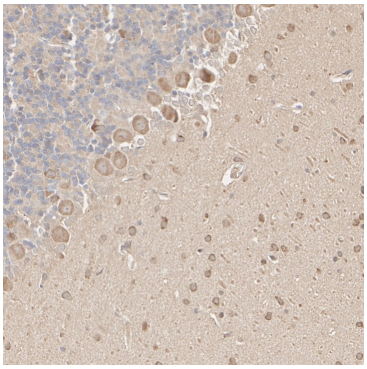

Fig7: Immunohistochemical analysis of paraffin-embedded rat cerebellum tissue with Rabbit anti-Superoxide Dismutase 1 antibody (ET1702-36) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ET1702-36) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

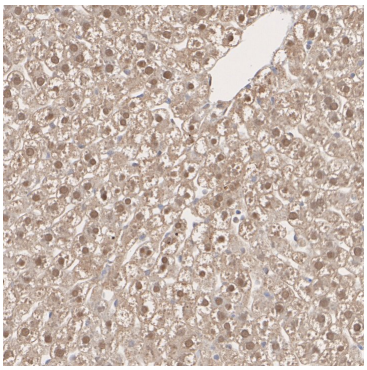

Fig8: Immunohistochemical analysis of paraffin-embedded rat liver tissue with Rabbit anti-Superoxide Dismutase 1 antibody (ET1702-36) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ET1702-36) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

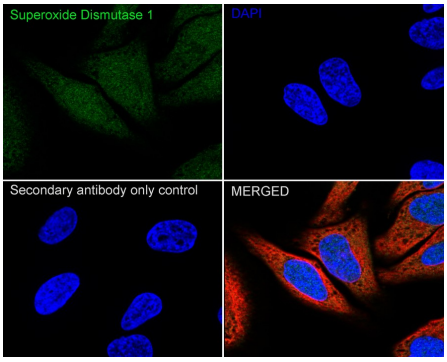

Fig9: Immunocytochemistry analysis of HeLa cells labeling Superoxide Dismutase 1 with Rabbit anti-Superoxide Dismutase 1 antibody (ET1702-36) at 1/100 dilution.

Cells were fixed in 4% paraformaldehyde for 15 minutes at room temperature, permeabilized with 0.1% Triton X-100 in PBS for 15 minutes at room temperature, then blocked with 1% BSA in 10% negative goat serum for 1 hour at room temperature. Cells were then incubated with Rabbit anti-Superoxide Dismutase 1 antibody (ET1702-36) at 1/100 dilution in 1% BSA in PBST overnight at 4 ℃. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

Beta tubulin (M1305-2, red) was stained at 1/100 dilution overnight at +4℃. Goat Anti-Mouse IgG H&L (iFluor™ 594, HA1126) was used as the secondary antibody at 1/1,000 dilution.

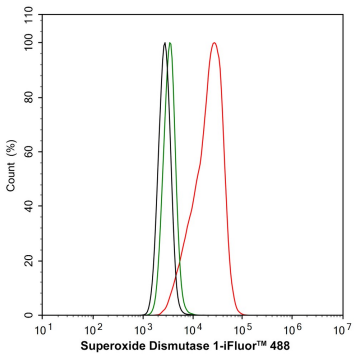

Fig10: Flow cytometric analysis of HeLa cells labeling Superoxide Dismutase 1.

Cells were fixed and permeabilized. Then stained with the primary antibody (ET1702-36, 1/1,000) (red) compared with Rabbit IgG Isotype Control (green). After incubation of the primary antibody at +4℃ for an hour, the cells were stained with a iFluor™ 488 conjugate-Goat anti-Rabbit IgG Secondary antibody (HA1121) at 1/1,000 dilution for 30 minutes at +4℃. Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. Greco T et al. Ketogenic diet decreases oxidative stress and improves mitochondrial respiratory complex activity. J Cereb Blood Flow Metab 36:1603-13 (2016).
2. Liebl MP et al. Low-frequency magnetic fields do not aggravate disease in mouse models of Alzheimer's disease and amyotrophic lateral sclerosis. Sci Rep 5:8585 (2015).