

**SOD (Mn) Antibody**  
Catalog # ASM10380

**Specification**

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**SOD (Mn) Antibody - Product Information**

Application	<b>WB, IHC</b>
Primary Accession	<a href="#">P07895</a>
Other Accession	<a href="#">NP_058747.1</a>
Host	<b>Rabbit</b>
Reactivity	<b>Human, Mouse, Rat, Rabbit, Hamster, Monkey, Pig, Chicken, Bovine, Dog, Sheep, Guinea Pig, Drosophila</b>
Clonality	<b>Polyclonal</b>

**Description**  
Rabbit Anti-Rat SOD (Mn) Polyclonal

**Target/Specificity**  
Detects ~25kDa.

**Other Names**  
Manganese SOD Antibody, IPO B Antibody, Mn SOD Antibody, SOD2 Antibody

**Immunogen**  
Rat Mn SOD

**Purification**  
Protein A Purified

Storage	<b>-20°C</b>
<b>Storage Buffer</b>	
PBS pH7.4, 50% glycerol, 0.09% sodium azide	

Shipping Temperature	<b>Blue Ice or 4°C</b>
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**Certificate of Analysis**  
0.5 µg/ml of SPC-117 was sufficient for detection of Mn SOD in 20 µg of rat brain tissue extract by colorimetric immunoblot analysis using Goat anti-rabbit IgG:AP as the secondary antibody.

**Cellular Localization**  
Mitochondrion | Mitochondrion Matrix

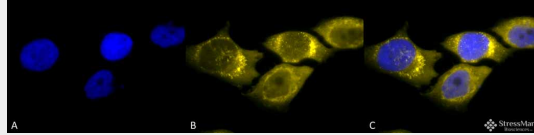
**SOD (Mn) Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

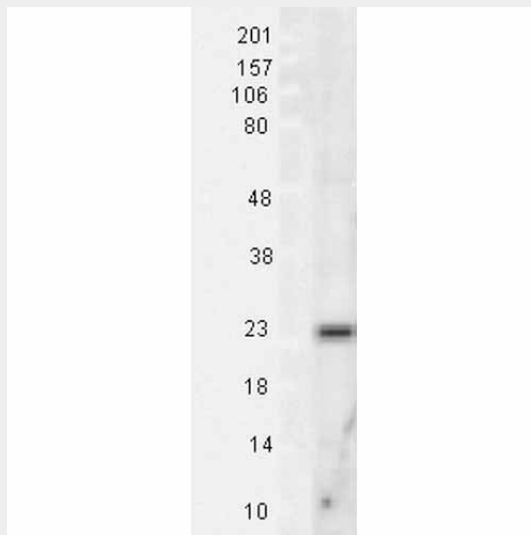
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)

- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

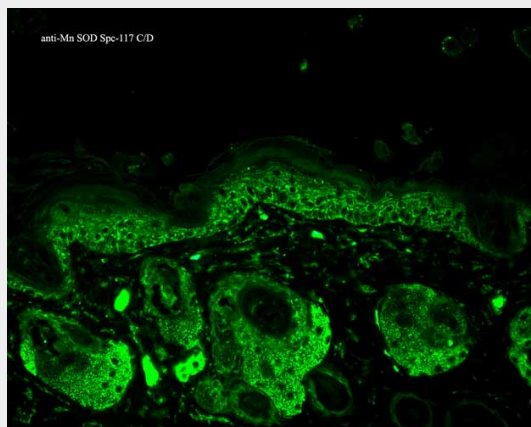
**SOD (Mn) Antibody - Images**



Immunocytochemistry/Immunofluorescence analysis using Rabbit Anti-SOD (Mn) Polyclonal Antibody (ASM10380). Tissue: HeLa Cells. Species: Human. Fixation: 2% Formaldehyde for 20 min at RT. Primary Antibody: Rabbit Anti-SOD (Mn) Polyclonal Antibody (ASM10380) at 1:120 for 12 hours at 4°C. Secondary Antibody: R-PE Goat Anti-Rabbit (yellow) at 1:200 for 2 hours at RT. Counterstain: DAPI (blue) nuclear stain at 1:40000 for 2 hours at RT. Localization: Mitochondrion matrix. Magnification: 100x. (A) DAPI (blue) nuclear stain. (B) Anti-SOD (Mn) Antibody. (C) Composite.

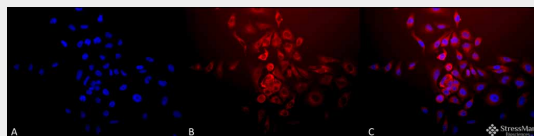


Western blot analysis of Rat Tissue lysates showing detection of SOD2 protein using Rabbit Anti-SOD2 Polyclonal Antibody (ASM10380). Load: 15 µg protein. Block: 1.5% BSA for 30 minutes at RT. Primary Antibody: Rabbit Anti-SOD2 Polyclonal Antibody (ASM10380) at 1:1000 for 2 hours at RT. Secondary Antibody: Donkey Anti-Rabbit IgG: HRP for 1 hour at RT.



Immunohistochemistry analysis using Rabbit Anti-SOD2 Polyclonal Antibody (ASM10380). Tissue:

backskin. Species: Mouse. Fixation: Bouin's Fixative Solution. Primary Antibody: Rabbit Anti-SOD2 Polyclonal Antibody (ASM10380) at 1:100 for 1 hour at RT. Secondary Antibody: FITC Goat Anti-Rabbit (green) at 1:50 for 1 hour at RT. Localization: Mitochondrion matrix.



Immunocytochemistry/Immunofluorescence analysis using Rabbit Anti-SOD (Mn) Polyclonal Antibody (ASM10380). Tissue: HeLa Cells. Species: Human. Fixation: 2% Formaldehyde for 20 min at RT. Primary Antibody: Rabbit Anti-SOD (Mn) Polyclonal Antibody (ASM10380) at 1:120 for 12 hours at 4°C. Secondary Antibody: APC Goat Anti-Rabbit (red) at 1:200 for 2 hours at RT. Counterstain: DAPI (blue) nuclear stain at 1:40000 for 2 hours at RT. Localization: Mitochondrion matrix. Magnification: 20x. (A) DAPI (blue) nuclear stain. (B) Anti-SOD (Mn) Antibody. (C) Composite.

### SOD (Mn) Antibody - Background

Superoxide dismutase (SOD) is an endogenously produced intracellular enzyme present in almost every cell in the body (3). It works by catalyzing the dismutation of the superoxide radical  $O_2^-$  to  $O_2$  and  $H_2O_2$ , which are then metabolized to  $H_2O$  and  $O_2$  by catalase and glutathione peroxidase (2,5). In general, SODs play a major role in antioxidant defense mechanisms (4).

There are two main types of SOD in mammalian cells. One form (SOD1) contains Cu and Zn ions as a homodimer and exists in the cytoplasm. The two subunits of 16 kDa each are linked by two cysteines forming an intra-subunit disulphide bridge (3). The second form (SOD2) is a manganese containing enzyme and resides in the mitochondrial matrix. It is a homotetramer of 80 kDa. The third form (SOD3 or EC-SOD) is like SOD1 in that it contains Cu and Zn ions, however it is distinct in that it is a homotetramer, with a mass of 30 kDa and it exists only in the extra-cellular space (7). SOD3 can also be distinguished by its heparin-binding capacity (1).

### SOD (Mn) Antibody - References

1. Adachi T., et al. (1992). Clin. Chim. Acta. 212: 89-102.
2. Barrister J.V., et al. (1987). Crit. Rev. Biochem. 22:111-180.
3. Furukawa Y., O'Halloran T. (2006). Antioxidants & Redo Signaling. Vol 8, No 5,6.
4. Gao B., et al. (2003). Am J Physiol Lung Cell Mol Physiol 284: L917-L925.
5. Hassan H.M. (1988). Free Radical Biol. Med. 5: 377-385.
6. Kurobe N., et al. (1990) Biomedical Research. 11: 187-194
7. Wispe J.R., et al. (1989) BBA. 994: 30-36.
8. Xiao-Hong Liu., et al. (1993) Brain Research. 625: 29-37.