

# PRODUCT INFORMATION



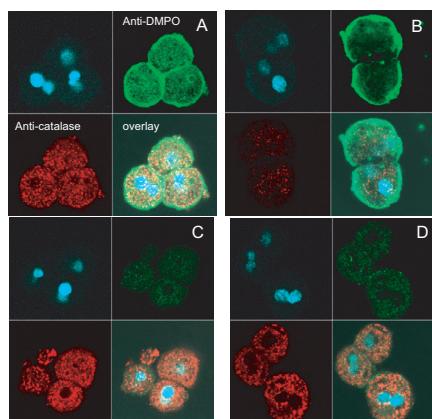
## DMPO Nitron Adduct Polyclonal Antiserum

Item No. 10006170

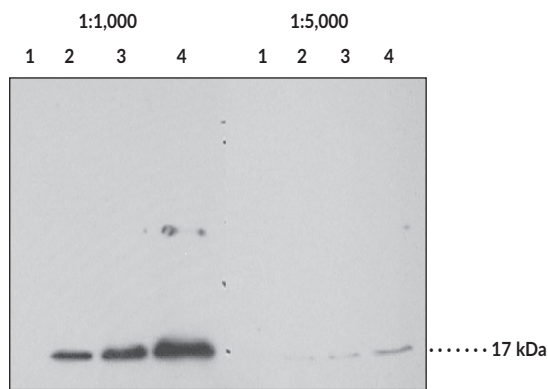
### Overview and Properties

<b>Contents:</b>	This vial contains 100 $\mu$ l of lyophilized rabbit anti-DMPO nitron adduct polyclonal antiserum
<b>Synonym:</b>	5,5-Dimethyl-1-Pyrroline-N-Oxide Nitron Adduct
<b>Immunogen:</b>	5,5-dimethyl-2-(8-octanoic acid)-1-pyrroline-N-oxide coupled to ovalbumin
<b>Species Reactivity:</b>	Species Independent
<b>Form:</b>	Lyophilized
<b>Storage:</b>	-20°C (as supplied)
<b>Stability:</b>	$\geq$ 3 years
<b>Storage Buffer:</b>	Polyclonal antiserum when reconstituted in 100 $\mu$ l of double distilled water
<b>Host:</b>	Rabbit
<b>Applications:</b>	ELISA, Immunocytochemistry (ICC), and Western blot (WB); the recommended starting dilution is 1:1,000-1:5,000 for ELISA and WB and 1:1,500 for ICC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

### Images



Representative confocal microscopy images of the colocalization of catalase (red stain) and protein-DMPO adducts (green stain) obtained by treating mouse hepatocytes ( $2.5 \times 10^6$  cells/ml) with HOCl. (A) cells were treated with three pulses of HOCl (50 mM, 30-minute intervals) in the presence of DMPO; (B) same as A, hepatocytes from catalase knockout mice were used; (C) same as B, but in the absence of DMPO; (D) same as B, but in the absence of HOCl. (Courtesy of M.G. Bonini et al. FRBM 42 (2007) 530-540.)



Lane 1: Metmyoglobin (3  $\mu$ l)  
Lane 2: Metmyoglobin-DMPO (3  $\mu$ l)  
Lane 3: Metmyoglobin-DMPO (5  $\mu$ l)  
Lane 4: Metmyoglobin-DMPO (10  $\mu$ l)

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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## Description

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DMPO is a spin trap that reacts with oxygen-, nitrogen-, sulfur-, and carbon-centered radicals.<sup>1-3</sup> It also reacts with DNA base- and amino acid-derived radicals to form DNA- and protein-DMPO nitroxone adducts, respectively, which rapidly decay to form DMPO-nitron adducts.<sup>4</sup> DMPO-nitron adducts were previously detected using electron paramagnetic resonance (EPR), however, immunochemical detection allows a higher level of sensitivity and throughput with greatly reduced sample consumption.<sup>4-6</sup> Cayman's DMPO Nitron Adduct Polyclonal Antiserum can be used for Western blot, immunocytochemistry, and ELISA applications. The antiserum recognizes various DMPO-nitron adducts, including DNA and protein species.

## References

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1. Chamulitrat, W., Jordan, S.J., and Mason, R.P. Fatty acid radical formation in rats administered oxidized fatty acids: In vivo spin trapping investigation. *Arch. Biochem. Biophys.* **299(2)**, 361-367 (1992)
2. Dikalov, S., Kirilyuk, I., and Grigor'ev, I. Spin trapping of O-,C-, and S-centered radicals and peroxynitrite by 2H-imidazole-1-oxides. *Biochem. Biophys. Res. Commun.* **218(2)**, 616-622 (1996).
3. Kalyanaraman, B., Karoui, H., Singh, R.J. *et al.* Detection of thiyl radical adducts formed during hydroxyl radical- and peroxynitrite-mediated oxidation of thiols - a high resolution ESR spin-trapping study at Q-band (35GHz). *Anal. Biochem.* **241(1)**, 75-81 (1996).
4. Mason, R.P. Imaging free radicals in organelles, cells, tissue, and in vivo with immuno-spin trapping. *Redox Biol.* **8**, 422-429 (2016).
5. Ramirez, D.C., Chen, Y.R., and Mason, R.P. Immunochemical detection of hemoglobin-derived radicals formed by reaction with hydrogen peroxide: Involvement of a protein-tyrosyl radical. *Free Radic. Biol. Med.* **34(7)**, 830-839 (2003).
6. Towner, R.A. and Smith, N. *In vivo* and *in situ* detection of macromolecular free radicals using immuno-spin trapping and molecular magnetic resonance imaging. *Antioxid. Redox Signal.* **28(15)**, 1404-1415 (2018).

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