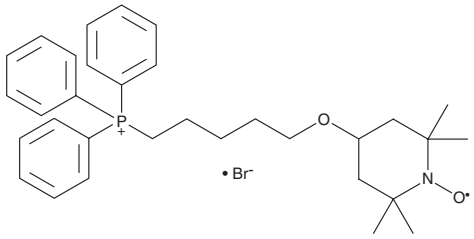
# PRODUCT INFORMATION

## MitoTEMPOL

*Item No. 18796*

**CAS Registry No.:** 1101113-39-6
**Formal Name:** 2,2,6,6-tetramethyl-4-[[5-(triphenylphosphonio) pentyl]oxy]-1-piperidinyloxy, monobromide
**MF:** $C_{32}H_{42}NO_2P \bullet Br$
**FW:** 583.6
**Purity:** ≥98%
**Supplied as:** A solid
**Storage:** -20°C
**Stability:** ≥2 years




*Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.*

### Laboratory Procedures

MitoTEMPOL is supplied as a solid. A stock solution may be made by dissolving the mitoTEMPOL in water. The solubility of mitoTEMPOL in water is approximately 100 mM. We do not recommend storing the aqueous solution for more than one day.

### Description

MitoTEMPOL is a mitochondria-targeting superoxide dismutase mimetic that reduces mitochondrial $O_2^-$ to $H_2O_2$.[1,2] Like the related compound MitoTEMPO (Item No. 16621), MitoTEMPOL combines an antioxidant moiety (here, TEMPOL, also known as 4-hydroxy-TEMPO) with the lipophilic cation triphenylphosphonium, which allows it to pass through lipid bilayers and accumulate in mitochondria.[1] MitoTEMPOL has been used to elucidate the role of mitochondria-derived superoxide in mitochondrial, cellular, and whole animal signaling.[2-6]

### References


1. Dikalov, S. Cross talk between mitochondria and NADPH oxidases. *Free Radic. Biol. Med.* **51(7)**, 1289-1301 (2011).
2. Choi, H.C., Song, P., Xie, Z., *et al.* Reactive nitrogen species is required for the activation of the AMP-activated protein kinase by statin *in vivo*. *J. Biol. Chem.* **283(29)**, 20186-20197 (2008).
3. Cunniff, B., Benson, K., Stumpff, J., *et al.* Mitochondrial-targeted nitroxides disrupt mitochondrial architecture and inhibit expression of peroxiredoxin 3 and FOXM1 in malignant mesothelioma cells. *J. Cell. Physiol.* **228(4)**, 835-845 (2013).
4. Dickey, J.S., Gonzalez, Y., Aryal, B., *et al.* Mito-tempol and dexrazoxane exhibit cardioprotective and chemotherapeutic effects through specific protein oxidation and autophagy in a syngeneic breast tumor preclinical model. *PLoS One* **8(8)**, e70575 (2013).
5. Han, Y., Wang, Q., Song, P., *et al.* Redox regulation of the AMP-activated protein kinase. *PLoS One* **5(11)**, e15420 (2010).
6. Khan, S.A., Nanduri, H., Yuan, G., *et al.* NADPH oxidase 2 mediates intermittent hypoxia-induced mitochondrial complex I inhibition: Relevance to blood pressure changes in rats. *Antioxid. Redox Signal.* **14(4)**, 533-542 (2011).





**CAYMAN CHEMICAL**
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
**PHONE:** [800] 364-9897
[734] 971-3335
**FAX:** [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM