

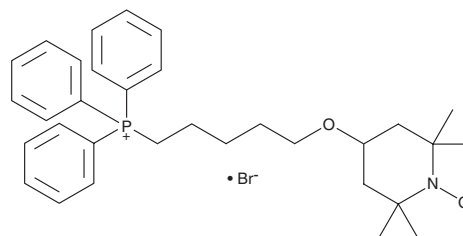
PRODUCT INFORMATION



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: C₃₂H₄₂NO₂P • Br
FW: 583.6
Purity: ≥98%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 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 O₂⁻ to H₂O₂.^{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

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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).

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.

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