

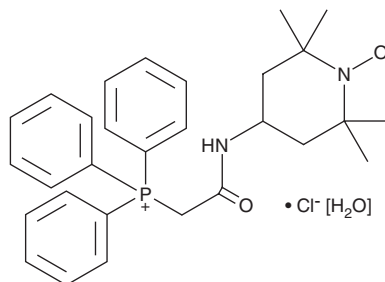
PRODUCT INFORMATION



MitoTEMPO (hydrate)

Item No. 16621

CAS Registry No.: 1569257-94-8
Formal Name: 2,2,6,6-tetramethyl-4-[[2-(triphenylphosphonio)acetyl]amino]-1-piperidinyloxy, monochloride, monohydrate
MF: C₂₉H₃₅N₂O₂P • Cl [H₂O]
FW: 528.0
Purity: ≥95%
UV/Vis.: λ_{max}: 225, 268 nm
Supplied as: A crystalline 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

MitoTEMPO (hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the mitoTEMPO (hydrate) in the solvent of choice. MitoTEMPO (hydrate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of mitoTEMPO (hydrate) in ethanol and DMF is approximately 15 mg/ml and approximately 10 mg/ml in DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of mitoTEMPO (hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of mitoTEMPO (hydrate) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

MitoTEMPO is a mitochondria-targeted superoxide dismutase mimetic that possesses superoxide and alkyl radical scavenging properties.¹ This compound combines the antioxidant piperidine nitroxide TEMPO with the lipophilic cation triphenylphosphonium, which allows it to pass through lipid bilayers and accumulate in mitochondria.¹ Mitochondrial targeting of superoxide scavenging *via* mitoTEMPO has been examined for potential therapeutic benefit to a variety of mitochondrial dysfunctions arising from excessive reactive oxygen species.²⁻⁴

References

1. Dikalov, S. Cross talk between mitochondria and NADPH oxidases. *Free Radic. Biol. Med.* **51(7)**, 1289-1301 (2011).
2. Liang, H.L., Arsenault, J., Mortensen, J., *et al.* Partial attenuation of cytotoxicity and apoptosis by SOD1 in ischemic renal epithelial cells. *Apoptosis* **14(10)**, 1176-1189 (2009).
3. Dikalova, A.E., Bikineyeva, A.T., Budzyn, K., *et al.* Therapeutic targeting of mitochondrial superoxide in hypertension. *Circ. Res.* **107(1)**, 106-116 (2010).
4. Liang, H.L., Sedlic, F., Bosnjak, Z., *et al.* SOD1 and MitoTEMPO partially prevent mitochondrial permeability transition pore opening, necrosis, and mitochondrial apoptosis after ATP depletion recovery. *Free Radic. Biol. Med.* **49(10)**, 1550-1560 (2010).

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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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