

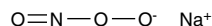
Product Information



Peroxynitrite

Item No. 81565 • Batch No. XXXXXX

CAS Registry No.: 14042-01-4
Formal Name: Peroxynitrous acid, sodium salt
Synonym: Sodium peroxynitrite
MF: $\text{ONO}_2 \cdot \text{Na}$
FW: 85.0
Purity: $\geq 90\%$ (balance is nitrate/nitrite)
Stability: ≥ 6 months at -80°C
Supplied as: A solution in 0.3 M sodium hydroxide
UV/Vis.: λ_{max} : 302 nm ϵ : 1,670
Concentration: *batch specific* mM



Laboratory Procedures

For long term storage, we suggest that peroxynitrite be stored as supplied at -80°C . It will be stable for at least three months.

Peroxynitrite is supplied as a solution in 0.3 M NaOH. Peroxynitrite is highly unstable and slowly decomposes even at -80°C but not to any significant extent within one month. The half-life of peroxynitrite in alkaline solutions at room temperature is about 5 hours. Peroxynitrite decomposes instantaneously under acidic conditions and the half-life at pH 7.4 is only few seconds.¹ Further dilutions of the stock solution can be performed using cold 0.3 M NaOH. We recommend that the actual concentration of peroxynitrite be measured following the procedure given below before using it in any experiments:

Thaw the peroxynitrite solution carefully and keep it on ice. Dilute an aliquot of the stock solution 40-fold with cold 0.3 M NaOH (e.g., add 25 μl of the stock to 975 μl of 0.3 M NaOH) and measure the absorbance at 302 nm with 0.3 M NaOH as blank. Concentration of the stock solution can be calculated using the extinction coefficient for peroxynitrite ($1670 \text{ M}^{-1}\text{cm}^{-1}$).

Peroxynitrite anion is generated by the reaction of nitric oxide with superoxide anion in a variety of biological organelles and cells.² It is a powerful oxidizing agent that can initiate lipid peroxidation, oxidize the sulfhydryls, and nitrate the aromatic residues of proteins.^{1,3,4} Cultured rats cerebrocortical neurons suffer 50% mortality when treated with 100 μM peroxynitrite for 30 minutes.⁵

References

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2. Edwards, J.O. and Plumb, R.C. The chemistry of peroxonitrites. *Prog. Inorg. Chem.* **41**, 599-635 (1994).
3. Beckman, J.S., Beckman, T.W., Chen, J., *et al.* Apparent hydroxyl radical production by peroxynitrite: Implications for endothelial injury from nitric oxide and superoxide. *Proc. Natl. Acad. Sci. USA* **87**, 1620-1624 (1990).
4. Beckman, J.S., Ye, Y.Z., Anderson, P.G., *et al.* Extensive nitration of protein tyrosines in human atherosclerosis detected by immunohistochemistry. *Biol. Chem. Hoppe-Seyler* **375**, 81-88 (1994).
5. Bonfoco, E., Krainc, D., Ankarcrona, M., *et al.* Apoptosis and necrosis: Two distinct events induced, respectively, by mild and intense insults with N-methyl-D-aspartate or nitric oxide/superoxide in cortical cell cultures. *Proc. Natl. Acad. Sci. USA* **92**, 7162-7166 (1995).

Related Products

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WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

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