
Product Data Sheet

Product Name: Peroxynitrite

Cat. No.: GC44602

Chemical Properties

Cas. No. 14042-01-4

Chemical Name peroxynitrous acid, sodium salt

SMILES O=NO[O-].[Na+]

Formula ONO2 · Na M.Wt 85

Solubility Storage Storage -80°C, protect from light

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure

Background

Peroxynitrite is formed in vivo by the reaction of NO with superoxide.[1],[2],[3] It is a powerful oxidizing agent that can initiate lipid peroxidation, oxidize sulfhydryls, and nitrate the aromatic residues of proteins.

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 [3]. 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:

Caution: Product has not been fully validated for medical applications. For research use only.

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Thaw the peroxyxynitrite 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 μ l of the stock to 975 μ l 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 peroxyxynitrite ($1670 \text{ M}^{-1}\text{cm}^{-1}$).

NO

-80°C

0.3 M NaOH -80°C
5 pH 7.4
0.3M NaOH

0.3 M NaOH 40 25 μ l 975 μ l 0.3 M NaOH 0.3 M NaOH 302 nm $1670 \text{ M}^{-1}\text{cm}^{-1}$

Reference:

- [1]. Pryor, W.A., and Squadrito, G.L. The chemistry of peroxyxynitrite: A product from the reaction of nitric oxide with superoxide. American Journal of Physiology 268, L699-L722 (1995).
- [2]. Beckman, J.S., and Koppenol, W.H. Nitric oxide, superoxide, and peroxyxynitrite: The good, the bad, and the ugly. Am. J. Physiol. 271(5 Pt 1), C1424-C1437 (1996).
- [3]. Koppenol, W.H., Moreno, J.J., Pryor, W.A., et al. Peroxyxynitrite, a cloaked oxidant formed by nitric oxide and superoxide. Chemical Research in Toxicology 5, 834-842 (1992).