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ProductInformation

Sodium thioglycolate

Product Number **T 0632**
Storage Temperature -20 °C

Product Description
Molecular Formula: $C_2H_3O_2SNa$
Molecular Weight: 114.1
CAS Number: 367-51-1
Synonyms: sodium mercaptoethanoate; sodium mercaptoacetate; mercaptoacetic acid sodium salt

Sodium thioglycolate is a commonly used reagent for bacteriological research to maintain reducing conditions in media. Thioglycolate can also protect enzymes against inactivation by maintaining protein thiol groups in the reduced state.[2] Thioglycolate medium is frequently used in inflammation research to elicit a neutrophil and macrophage response *in vivo*.[3] Studies on the stability of thioglycolate solutions have been published.[4]

The use of sodium thioglycolate and other reducing agents to optimize the recovery of *Bifidobacterium* bacteria from environmental samples has been described.[5] Thioglycolate (0.032 - 0.250 mg/ml) has been utilized to alter the cellular rigidity of cultured adherent human natural killer (NK) cells while maintaining cell viability and function.[6] A reducing medium for the culture of *Porphyromonas gingivalis* that incorporates sodium thioglycolate at 250 mg/L has been reported.[7] The use of sodium thioglycolate-modified ZnS-nanoparticles for protein analysis from serum has been described.[8]

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions
This product is soluble in water (200 mg/ml), with heat as needed, yielding a clear to slightly hazy, faint pink to faint purple solution.

Storage/Stability
The rate of oxidation increases with increasing pH. A yellow color in the solutions is believed to be due to alkaline pH. When dextrose is present, neutral solutions are oxidized more rapidly than alkaline solutions. Heating aged solutions leads to regeneration of the oxidized form, but at a lower extent than expected. Dilution increases oxidation during storage.[4]

References
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3. Potter, P. K., et al., Lupus-prone mice have an abnormal response to thioglycolate and an impaired clearance of apoptotic cells. J. Immunol., **170(6)**, 3223-3232 (2003).
4. Cook, A. M., and Steel, L. J., The stability of thioglycollate solutions. I. Effects of method of preparation of solutions, pH, and temperature upon the oxidation of thioglycollate. II. Miscellaneous factors associated with the oxidation and stability. J. Pharm. Pharmacol., **11(4)**, 216-223 and 434-441 (1959).
5. Nebra, Y., et al., The effect of reducing agents on the recovery of injured *Bifidobacterium* cells. J. Microbiol. Methods, **49(3)**, 247-254 (2002).
6. Melder, R. J., and Jain, R. K., Reduction of rigidity in human activated natural killer cells by thioglycollate treatment. J. Immunol. Methods, **175(1)**, 69-77 (1994).
7. Pederson, E. D., et al., Reducing medium for the cultivation of *Porphyromonas gingivalis*. Microbios., **89(359)**, 119-124 (1997).
8. Wang, L. Y., et al., Fluorescence for the determination of protein with functionalized nano-ZnS. Analyst, **127(11)**, 1531-1534 (2002).

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