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ProductInformation

Sodium selenite

Product Number **21,448-5**
Store at Room Temperature

Replacement for Product Number S 1382

Product Description
Molecular Formula: Na_2SeO_3
Molecular Weight: 172.9
CAS Number: 10102-18-8
Synonym: selenious acid sodium salt[1]

Sodium selenite is commonly used as a source of selenium in biological research, where selenium is an essential trace element that is normally provided by serum. Selenium is present in selenoproteins such as glutathione peroxidase and thioredoxin reductase, which contain the selenium analog of cysteine, selenocysteine. In particular, glutathione peroxidase has a role in detoxification *in vivo* as a scavenger of peroxides.[2,3] Sodium selenite is included in various medium supplements for use in cell culture (Product No. I 1884, S 5791, and S 5666).

Sodium selenite has been utilized in studies of cell proliferation and cancer research.[4,5] It has been used to alter gene expression in HepG2 cells as analyzed by cDNA microarrays.[6] Sodium selenite can inhibit zinc finger protein/DNA interactions.[7] Sodium selenite has been shown to alter mitochondrial membrane potentials and thus potentially contribute to apoptosis.[8,9]

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

Preparation Instructions
This product is soluble in water (50 mg/ml), yielding a clear to slightly hazy, colorless to very faint yellow solution.

Storage/Stability
Stock solutions of sodium selenite may be frozen. Working aliquots are stable for 30 days at 2-8 °C.

References
1. The Merck Index, 12th ed., Entry# 8822.
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3. Textbook of Biochemistry with Clinical Correlations, 5th ed., Devlin, T. M., ed., Wiley-Liss (New York, NY: 2002), pp. 1163-1164.
4. Ip, C., Lessons from basic research in selenium and cancer prevention. J. Nutr., **128(11)**, 1845-1854 (1998).
5. Sinha, R., et al., Organic and inorganic selenium compounds inhibit mouse mammary cell growth *in vitro* by different cellular pathways. Cancer Lett., **107(2)**, 277-284 (1996).
6. Morgan, K. T., et al., Application of cDNA microarray technology to *in vitro* toxicology and the selection of genes for a real-time RT-PCR-based screen for oxidative stress in Hep-G2 cells. Toxicol. Pathol., **30(4)**, 435-451 (2002).
7. Larabee, J. L., et al., Inhibition of zinc finger protein-DNA interactions by sodium selenite. Biochem. Pharmacol., **64(12)**, 1757-1765 (2002).
8. Kim, T. S., et al., Dysfunction of rat liver mitochondria by selenite: induction of mitochondrial permeability transition through thiol-oxidation. Biochem. Biophys. Res. Commun., **294(5)**, 1130-1137 (2002).
9. Shilo, S., et al., Selenite sensitizes mitochondrial permeability transition pore opening *in vitro* and *in vivo*: a possible mechanism for chemo-protection. Biochem. J., **370(Pt 1)**, 283-290 (2003).

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