

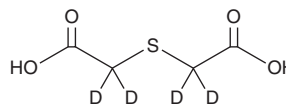
PRODUCT INFORMATION



Thiodiglycolic Acid-d₄

Item No. 9002478

CAS Registry No.: 132090-51-8
Formal Name: 2,2'-thiobis(acetic-2,2,2',2'-d₄ acid)
Synonyms: Dicarboxydimethyl sulfide-d₄, Mercaptodiacetic Acid-d₄, TDGA-d₄, Thiodiacetic Acid-d₄
MF: C₄H₂D₄O₄S
FW: 154.2
Chemical Purity: ≥98% Thiodiglycolic Acid
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
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

TDGA-d₄ is supplied as a crystalline solid. A stock solution may be made by dissolving the TDGA-d₄ in the solvent of choice. TDGA-d₄ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of TDGA-d₄ in ethanol and DMF is approximately 30 mg/ml and approximately 25 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 TDGA-d₄ can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of TDGA-d₄ in PBS, pH 7.2, is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

TDGA-d₄ is used as an internal standard for the quantification of TDGA by stable isotope dilution MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Description

TDGA is a product of interaction of the cysteine component of glutathione with two-carbon units released during catabolism. It is found in concentrations below 20 mg/l in urine of healthy individuals and elevated following ingestion of certain drugs.¹ Determination of TDGA concentration in urine has been used to characterize the metabolism of substances participating in methionine synthesis in order to identify imbalances leading to hyperhomocystinuria.² Additionally, because TDGA is used as raw material in the polymer industry, its detection in human urine has served as a biomarker for exposure to carcinogenic vapors such as vinylchloride monomer produced during polymer manufacture.²

References

1. Navratil, T., Petr, M., Senholdova, Z., *et al. Physiol. Res.* **56(1)**, 113-122 (2007).
2. Cheng, Y.-J., Huang, Y.-F., and Ma, Y.-C. *J. Occup. Environ. Med.* **43(11)**, 934-938 (2001).

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.

WARRANTY AND LIMITATION OF REMEDY

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