

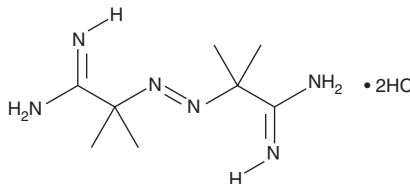
PRODUCT INFORMATION



AAPH

Item No. 82235

CAS Registry No.: 2997-92-4
Formal Name: 2,2'-azobis-2-methylpropanimidamide, dihydrochloride
MF: C₈H₁₈N₆ • 2HCl
FW: 271.2
Purity: ≥98%
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

AAPH is supplied as a crystalline solid. AAPH is sparingly soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. For biological experiments, we suggest that organic solvent-free aqueous solutions of AAPH be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of AAPH in PBS (pH 7.2) is approximately 10 mg/ml.

Description

AAPH is a water-soluble azo compound which is used extensively as a free radical generator, often in the study of lipid peroxidation and the characterization of antioxidants.¹⁻⁴ Decomposition of AAPH produces molecular nitrogen and 2 carbon radicals. The carbon radicals may combine to produce stable products or react with molecular oxygen to give peroxy radicals. The half-life of AAPH is about 175 hours (37°C; neutral pH), making the rate of free radical generation essentially constant during the first several hours in solution.⁵ While AAPH may be used effectively for lipid peroxidation in aqueous dispersions of fatty acids, other radical generators may be better suited for peroxidation studies in lipid micelles or membranes.^{6,7}

References

1. Noguchi, N., Takahashi, M., Tsuchiya, J., *et al.* Action of 21-aminosteroid U74006F as an antioxidant against lipid peroxidation. *Biochem. Pharmacol.* **55(6)**, 785-791 (1998).
2. Liu, Z.-Q., Yu, W., and Liu, Z.-L. Antioxidative and prooxidative effects of coumarin derivatives on free radical initiated and photosensitized peroxidation of human low-density lipoprotein. *Chem. Phys. Lipids* **103(1-2)**, 125-135 (1999).
3. Rice-Evans, C. and Miller, N. Total antioxidant status in plasma and body fluids. *Methods Enzymol.* **234(24)**, 279-293 (1994).
4. Liégeois, C., Lermusieau, G., and Collin, S. Measuring antioxidant efficiency of wort, malt, and hops against the 2,2'-azobis(2-amidinopropane) dihydrochloride-induced oxidation of an aqueous dispersion of linoleic acid. *J. Agric. Food Chem.* **48(4)**, 1129-1134 (2000).
5. Niki, E. Free radical initiators as source of water- or lipid-soluble peroxy radicals. *Methods Enzymol.* **186**, 100-108 (1990).
6. Yamamoto, Y., Haga, S., Niki, E., *et al.* Oxidation of lipids. V. Oxidation of methyl linoleate in aqueous dispersion. *Bull. Chem. Soc. Jpn.* **57(5)**, 1260-1264 (1984).
7. Culbertson, S.M. and Porter, N.A. Unsymmetrical azo initiators increase efficiency of radical generation in aqueous dispersions, liposomal membranes, and lipoproteins. *J. Am. Chem. Soc.* **122(17)**, 4032-4038 (2000).

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.

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