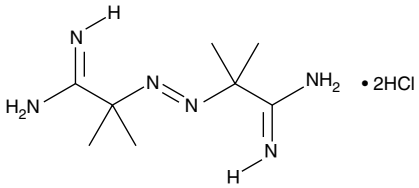
Product Information

AAPH

Item No. 82235

CAS Registry No.: 2997-92-4
Formal Name: 2,2'-azobis-2-methyl-propanimidamide, dihydrochloride
MF: $C_8H_{18}N_6 \cdot 2HCl$
FW: 271.2
Purity: ≥98%
Stability: ≥1 year at -20˚C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that AAPH be stored as supplied at -20˚C. It should be stable for at least one year.

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 compound in aqueous buffers. The solubility of AAPH in PBS (pH 7.2) is approximately 10 mg/ml.

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 peroxyl 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**, 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**, 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**, 1129-1134 (2000).
5. Niki, E. Free radical initiators as source of water- or lipid-soluble peroxyl 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**, 4032-4038 (2000).

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