

Product Data Sheet

Product Name: MiADMSA

Cat. No.: GC81580

Chemical Properties

Cas. No. 142609-62-9

Formula $C_9H_{16}O_4S_2$

M.Wt 252.34

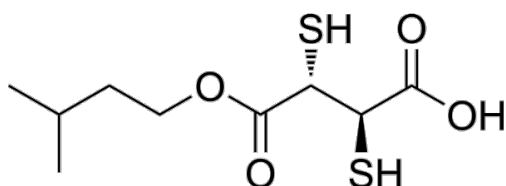
Solubility

Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

MiADMSA (Monoisoamyl meso-2,3-dimercaptosuccinic acid) is an orally active thiol chelator that can effectively remove heavy metals such as arsenic and lead from the body of animals. Arsenic binds with two vicinal sulfhydryl groups available in MiADMSA leading to marked reduction in body arsenic burden and also marked reduction in various oxidative stress parameters and antioxidant enzymes like- ROS, nitrite, TBARS, GSH, SOD and catalase. MiADMSA attenuates urinary bladder carcinogenesis, protects against oxidative stress, ameliorates copper-induced histopathology, reverses neurotoxicity, and is safe in animals. MiADMSA can be used in studies of bladder cancer, arsenic, and lead-induced developmental neurotoxicity [1] [2] [3] [4] [5] [6].

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

In Vivo, MiADMSA (50 mg/kg; p.o.; 5 consecutive days per course for 3 courses with 1-week gaps between courses) reduces arsenic-induced bladder carcinogenesis in male Sprague-Dawley rats exposed to sodium arsenite or Dimethylarsinic acid (DMA)^[1]. MiADMSA (50 mg/kg; p.o.; 5 days a week; for 4 weeks) reverses most arsenic-induced neurotoxic effects in male Wistar rats (arsenic-exposed)^[2]. MiADMSA (50-100 mg/kg; oral or i.p.; once daily; 5 days) reverses chronic arsenic toxicity in male Wistar rats (80-90 g) challenged with arsenic (with a body arsenic burden reduction of 75% for 50 mg/kg oral)^[3]. MiADMSA (75 mg/kg; orally; two courses of 5 days each with a 7-day rest period between courses) abrogates chronic copper-induced hepatic and immunological changes in male Sprague-Dawley rats (chronic copper sulfate exposure)^[4]. MiADMSA (25-100 mg/kg; i.p.; daily; 7 days) modulates antioxidant and prooxidant markers and affects essential metal levels in male Wistar rats (young, adult, old)^[5]. MiADMSA (50 mg/kg; orally via gavage; once daily; 3 consecutive days) mitigates arsenic- and lead-induced oxidative stress and apoptotic markers in Wistar rats (male pups from exposed pregnant rats challenged with sodium meta-arsenite and/or lead acetate)^[6].

In Vitro, MiADMSA (50-200 nM; 6 h pre-incubation, 24 h exposure, repeated 7 days) reverses increased cell viability induced by 100 nM sodium arsenite or DMA in NBT-II and T-24 cells^[1]. MiADMSA (100 nM; 7 days) reduces arsenic/DMA-induced oxidative stress by lowering ROS and restoring GSH in NBT-II and T-24 cells^[1]. MiADMSA (100 nM; 7 days) reduces pro-oncogenic biomarker (MMP-9, survivin) levels induced by 100 nM sodium arsenite or DMA in NBT-II and T-24 cells^[1]. MiADMSA (100 nM; 7 days) reduces the increased clonogenic potential and cell migration induced by 100 nM sodium arsenite or DMA in NBT-II cells^[1].

References:

- [1]. Sathua K, et al. MiADMSA ameliorate arsenic induced urinary bladder carcinogenesis in vivo and in vitro. Biomed Pharmacother. 2020;128:110257.
- [2]. Dwivedi N, et al. MiADMSA reverses impaired mitochondrial energy metabolism and neuronal apoptotic cell death after arsenic exposure in rats. Toxicol Appl Pharmacol. 2011;256(3):241-248.
- [3]. Flora SJ, et al. Monoisoamyl 2, 3-dimercaptosuccinic acid (MiADMSA) demonstrates higher efficacy by oral route in reversing arsenic toxicity: a pharmacokinetic approach. Basic Clin Pharmacol Toxicol. 2012;110(5):449-459.
- [4]. Patwa J, et al. MiADMSA abrogates chronic copper-induced hepatic and immunological changes

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

in Sprague Dawley rats. Food Chem Toxicol. 2020;145:111692.

[5]. Flora SJ, et al. Essential metal status, prooxidant/antioxidant effects of MiADMSA in male rats: age-related effects. Biol Trace Elem Res. 2007;120(1-3):235-247.

[6]. Sannadi S, et al. Reversal effect of monoisoamyl dimercaptosuccinic acid (MiADMSA) for arsenic and lead induced perturbations in apoptosis and antioxidant enzymes in developing rat brain. Int J Dev Neurosci. 2013;31(7):586-597.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA