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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

S-Adenosyl-L-methionine tosylate

Cat. No.: HY-B0617A

CAS No.: 52248-03-0

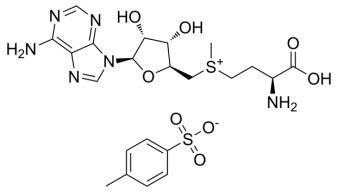
Molecular Formula: $C_{22}H_{30}N_6O_8S_2$

Molecular Weight: 570.64

Target: Endogenous Metabolite; Apoptosis

Pathway: Metabolic Enzyme/Protease; Apoptosis

Storage: -20°C, stored under nitrogen, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 150 mg/mL (262.86 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.7524 mL	8.7621 mL	17.5242 mL
	5 mM	0.3505 mL	1.7524 mL	3.5048 mL
	10 mM	0.1752 mL	0.8762 mL	1.7524 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
Solubility: 100 mg/mL (175.24 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

S-Adenosyl-L-methionine tosylate is produced endogenously from methionine and ATP by action of the enzyme methionine adenosyltransferase and is an important orally active methyl group donor. S-Adenosyl-L-methionine tosylate is a dietary supplement with potent antidepressant and analgesic effects, and has the potential for liver disease and osteoarthritis research[1][2][3].

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

S-Adenosyl-L-methionine (Ademetionine) is involved in three main metabolic pathways: 1) methylation, as the principal source of methyl groups in the body; 2) transsulfuration, S-Adenosyl-L-methionine forms S-Adenosylhomocysteine (SAH) and then converted to homocysteine (Hcy) which can be converted to cystathionine then to cysteine and the sulfate (SO4) donated to other metabolic intermediates; and 3) aminopropylation, as S-Adenosyl-L-methionine plays an important role in the synthesis of polyamines which can eventually form and recycle methionine[2].
?In vitro studies using human articular chondrocytes have shown S-Adenosyl-L-methionine-induced increases in

	proteoglycan synthesis and proliferation rates in rabbits[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Mice lacking methionine adenosyltransferase 1a (Mat1a) have reduced hepatic S-Adenosyl-L-methionine levels and develop oxidative stress, steatohepatitis, and hepatocellular carcinoma (HCC).? However, injury and HCC also occur if hepatic S-Adenosyl-L-methionine level is excessive chronically. Thus a normal hepatic S-Adenosyl-L-methionine level is necessary to maintain liver health and prevent injury and HCC[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Agric Food Chem. 2021 Jul 30.
- Biochem Pharmacol. 2023 Dec 6:219:115967.
- Int Immunopharmacol. 2021 Mar 22;95:107545.
- Epigenetics Chromatin. 2021 Dec 4;14(1):52.
- bioRxiv. 2023 Jun 1.

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REFERENCES

[1]. G M Bressa. et al. S-adenosyl-l-methionine (SAMe) as antidepressant: meta-analysis of clinical studies. Acta Neurol Scand Suppl. 1994;154:7-14.

[2]. Wadie I Najm, et al. S-adenosyl methionine (SAMe) versus celecoxib for the treatment of osteoarthritis symptoms: a double-blind cross-over trial. [ISRCTN36233495]. BMC Musculoskelet Disord. 2004 Feb 26;5:6.

[3]. Shelly C Lu, et al. S-adenosylmethionine in liver health, injury, and cancer. Physiol Rev. 2012 Oct;92(4):1515-42.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA