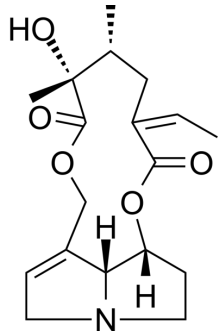
Senecionine

Cat. No.:	HY-N2560
CAS No.:	130-01-8
Molecular Formula:	$C_{18}H_{25}NO_5$
Molecular Weight:	335.39
Target:	Others
Pathway:	Others
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 1.43 mg/mL (4.26 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.9816 mL	14.9080 mL	29.8160 mL
	5 mM	---	---	---
	10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

Senecionine (Senecionan-11,16-dione, 12-hydroxy-) is a pyrrolizidine alkaloid could be isolated from Senecio vulgaris. Senecionine decreases the activities of glutathione S-transferase, aminopyrine demethylase and arylhydrocarbon hydroxylase (AHH)[1][2][3].

In Vitro

Pyrrolizidine alkaloids (PAs) are considered to be one of the most hepatotoxic groups of compounds of plant origin and are present in about 3% of the world's flowering plants. Most PAs represent a considerable health hazard to both livestock and humans through the consumption of plants and PA-contaminated products such as milk, honey, herbal teas, and medicines [1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Upon intravenous administration and oral administration of Senecionine and Adonifoline, significant differences in pharmacokinetics were observed, with the Senecionine and Adonifoline being absorbed fast with lower bioavailability and being quickly metabolized to PA N-oxides and hydroxylation products of PAs or their N-oxides[1]. Senecionine fails to stimulate epoxide hydrase, it diminishs the activity of glutathione-s-transferase, aminopyrine demethylase and AHH[2]. Twice-weekly injections of a third constituent, senecionine, beginning on Day 12 or later, results in premature deliveries in three of seven rats, and the pups from all litters are stillborn or die shortly after birth[3].

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PROTOCOL

Animal Administration [1]	Rats[1] Swiss albino rats weighing 155-175 g are incubated for 3 consecutive days with seneciphylline and senecionine at a daily dose of 40 or 80 mg/kg body wt. Control animals received normal saline only. The animals are killed 24 h after the last dose. The livers are removed, weighed and then homogenized in 1.15% KCl, 0.02 HEPES (pH 7.4)[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Wang C, et al. The comparative pharmacokinetics of two pyrrolizidine alkaloids, senecionine and adonifoline, and their main metabolites in rats after intravenous and oral administration by UPLC/ESIMS. Anal Bioanal Chem. 2011 Jul;401(1):275-87.

[2]. Kakrani HK, et al. Effect of seneciphylline and senecionine on hepatic drug metabolizing enzymes in rats. J Ethnopharmacol. 1984 Dec;12(3):271-8.

[3]. Tu ZB, et al. Identification of senecionine and senecionine N-oxide as antifertility constituents in Senecio vulgaris. J Pharm Sci. 1988 May;77(5):461-3.

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

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