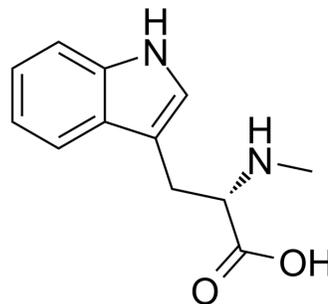


## L-(+)-Abrine

Cat. No.:	HY-N1436		
CAS No.:	526-31-8		
Molecular Formula:	C <sub>12</sub> H <sub>14</sub> N <sub>2</sub> O <sub>2</sub>		
Molecular Weight:	218.25		
Target:	Others		
Pathway:	Others		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

H<sub>2</sub>O : 1.85 mg/mL (8.48 mM; ultrasonic and adjust pH to 10 with NaOH)

Concentration	Mass		
	1 mg	5 mg	10 mg
1 mM	4.5819 mL	22.9095 mL	45.8190 mL
5 mM	0.9164 mL	4.5819 mL	9.1638 mL
10 mM	---	---	---

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

### BIOLOGICAL ACTIVITY

#### Description

L-(+)-Abrine, a lethal albumin found in *Abrus precatorius* seeds, is an acute toxic alkaloid and chemical marker for abrin.

#### In Vitro

L-(+)-Abrine is a marker for abrin poisoning. A strong indication for abrin poisoning is the presence of the chemical marker L-(+)-Abrine, which can survive metabolism in significant amounts making it detectable in human urine<sup>[1]</sup>.

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

#### In Vivo

Abrin is a toxic protein found in the jequirity seed. L-(+)-Abrine (L-Abrine) is also found in the jequirity seed and can be used as a biomarker for abrin exposure. An animal study is designed to monitor the excretion and recovery of L-(+)-Abrine in 20 rats. The animals are exposed to one of three concentrations of L-(+)-Abrine, a single high concentration of L-tryptophan, or no agent (control). The low L-(+)-Abrine dose corresponds to 0.63 LD<sub>50</sub> i.p. abrin in mice, assuming a concentration ratio of 1:4 of abrin to L-(+)-Abrine and an LD<sub>50</sub> for abrin of 20 µg/kg. The mid and high L-(+)-Abrine (250 and 400 µg/kg) doses are included to ensure that the target analyte can be detected and tracked over the course of the experiment<sup>[2]</sup>.

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## PROTOCOL

### Animal

### Administration <sup>[2]</sup>

#### Rats<sup>[2]</sup>

Twenty male Wistar rats, approximately 6-7 weeks of age and weighing approximately 175-200 g upon receipt, are used. A total of 12 rats are dosed intramuscularly with L-(+)-Abrine at 0.63, 3.13, and 5 times the expected Abrin LD<sub>50</sub> of 20 µg/kg. Although no toxin is used here, the concentration of the biomarker is increased by a factor of 4 to estimate an equivalent level of toxin, assuming that Labrine is present in rosary peas at a concentration four times greater than the toxin abrin. A total of 12 rats are dosed intramuscularly with L-(+)-Abrine: four at approximately 50 µg/kg body weight (bw), four at 250 µg/kg bw, and four at 400 µg/kg bw. Four control rats are dosed with water, which is the vehicle for all dosing experiments. Another four rats are dosed intraperitoneally with 20,000 µg/kg L-tryptophan to verify that endogenous L-tryptophan is not metabolized to L-(+)-Abrine<sup>[2]</sup>.

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## REFERENCES

- [1]. Cho H, et al. A portable and chromogenic enzyme-based sensor for detection of abrin poisoning. *Biosens Bioelectron.* 2014 Apr 15;54:667-73.
- [2]. Johnson RC, et al. Quantification of L-abrine in human and rat urine: a biomarker for the toxin abrin. *J Anal Toxicol.* 2009 Mar;33(2):77-84.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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