

## Arecoline

## Chemical Properties

CAS No. : 63-75-2

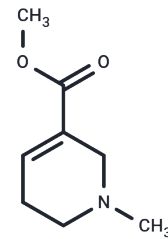
Formula: C<sub>8</sub>H<sub>13</sub>NO<sub>2</sub>

Molecular Weight: 155.19

Keep away from direct sunlight, Keep away from moisture, Store under nitrogen

Storage: Pure form: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Arecoline is a natural alkaloid derived from areca nut in the palm family and is a potent nicotine and partial agonist of muscarinic acetylcholine receptors. Arecoline has anti-anxiety and anti-parasitic activity, can induce oxidative stress and can be used to study Alzheimer's disease and Alzheimer's disease.
Targets(IC50)	Reactive Oxygen Species, AChR
In vitro	Arecoline induces reactive oxygen species generation and cell cycle arrest at the G1/G0 phase in HaCaT cells without affecting p21/Cip1 expression. It also upregulates stress-responsive genes such as hemoxygenase-1, ferritin light chain, glucose-6-phosphate dehydrogenase, glutamate-cysteine ligase catalytic subunit, and glutathione reductase. At higher concentrations, arecoline causes epithelial cell death due to oxidative trauma without triggering apoptosis[1].

## Solubility Information

Solubility	DMSO: 250 mg/mL (1610.93 mM), Sonication is recommended. H <sub>2</sub> O: 200 mg/mL (1288.74 mM), Sonication and heating are recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 10 mg/mL (64.44 mM), Solution. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (12.89 mM), Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	6.4437 mL	32.2186 mL	64.4371 mL
5 mM	1.2887 mL	6.4437 mL	12.8874 mL
10 mM	0.6444 mL	3.2219 mL	6.4437 mL
50 mM	0.1289 mL	0.6444 mL	1.2887 mL

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Kuo TM, et, al. Arecoline induces TNF-alpha production and Zonula Occludens-1 redistribution in mouse Sertoli TM4 cells. *J Biomed Sci.* 2014 Sep 9;21(1):93.

Liu YJ, et, al. The pharmacology, toxicology and potential applications of arecoline: a review. *Pharm Biol.* 2016 Nov;54(11):2753-2760.

Volgin AD, et, al. DARK Classics in Chemical Neuroscience: Arecoline. *ACS Chem Neurosci.* 2019 May 15;10(5):2176-2185.

G S Thangjam, et al. Regulation of oxidative-stress responsive genes by arecoline in human keratinocytes. *J Periodontal Res.* 2009 Oct;44(5):673-82.

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