

## AFMK

## Chemical Properties

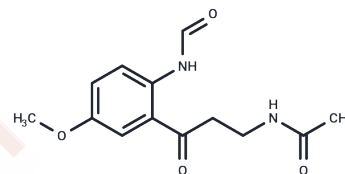
CAS No. : 52450-38-1

Formula: C<sub>13</sub>H<sub>16</sub>N<sub>2</sub>O<sub>4</sub>

Molecular Weight: 264.28

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

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	AFMK (Formyl-N-acetyl-5-methoxykynurenamine) is an active metabolite of Melatonin with antioxidant and free radical scavenging activity. AFMK is a modulator of apoptosis and improves the anti-tumor effect of Gemcitabine in PANC-1 cells.
Targets(IC50)	Apoptosis,Free radical scavengers,Antioxidant,Endogenous Metabolite
In vitro	In PANC-1 cell, AFMK in combination with Gemcitabine increases the inhibition of the production of HSP70 from 0.47 (Gemcitabine alone) to 0.13 (10 nM AFMK), 0.08 (0.1 nM AFMK) and 0.01 (0.001 nM AFMK)[1]. AFMK pretreatment significantly inhibits DNA damage and shows a very high hydroxyl radical scavenging potential with an IC50 of 338.08 nM[3].
In vivo	In male C57BL mice, AFMK (10 mg/kg; i.p.) significantly reverses radiation-induced decline in the total antioxidant capacity of plasma. Pretreatment of AFMK shows a significantly lower value of comet tail length and % DNA in tail[3].

## Solubility Information

Solubility	DMSO: 50 mg/mL (189.19 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (7.57 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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	<b>1mg</b>	<b>5mg</b>	<b>10mg</b>
1 mM	3.7839 mL	18.9193 mL	37.8387 mL
5 mM	0.7568 mL	3.7839 mL	7.5677 mL
10 mM	0.3784 mL	1.8919 mL	3.7839 mL
50 mM	0.0757 mL	0.3784 mL	0.7568 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

Anna Leja-Szpak, et al. Melatonin and its metabolite N1-acetyl-N2-formyl-5-methoxykynuramine (afmk) enhance chemosensitivity to gemcitabine in pancreatic carcinoma cells (PANC-1). *Pharmacol Rep.* 2018 Dec;70(6):1079-1088.

Annia Galano, et al. On the free radical scavenging activities of melatonin's metabolites, AFMK and AMK. *J Pineal Res.* 2013 Apr;54(3):245-57.

Kailash Manda, et al. AFMK, a melatonin metabolite, attenuates X-ray-induced oxidative damage to DNA, proteins and lipids in mice. *J Pineal Res.* 2007 Apr;42(4):386-93.

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