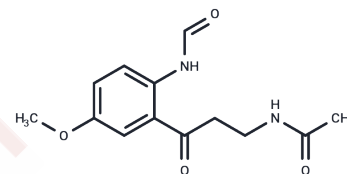


AFMK

Chemical Properties

CAS No. :	52450-38-1
Formula:	C ₁₃ H ₁₆ N ₂ O ₄
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 a natural product and an apoptosis modulator with antioxidant and free radical scavenging activities. This compound enhances the antitumor effect of gemcitabine in PANC-1 cells and attenuates X-ray-induced oxidative damage to DNA, proteins, and lipids.
Targets(IC50)	Apoptosis,Free radical scavengers,Antioxidant,Endogenous Metabolite
In vitro	<p>Methods: Normal human epidermal keratinocytes were used as a model. AFMK was dissolved in ethanol and pre-incubated at concentrations of 10⁻³-10⁻⁹ M for 1 h, followed by 25 mJ/cm² UVB irradiation and 48 h culture. MTT, ATP, mitochondrial membrane potential, cytochrome c release, Caspase 3/7, and sub-G1 apoptosis assays were performed.</p> <p>Results: AFMK significantly enhanced cell viability, maintained ATP and membrane potential, inhibited cytochrome c release, caspase activation, and apoptosis, exerting mitochondrial protective effects. [1]</p> <p>Methods: Rat pancreatic acinar AR42J cells were used. Cells were incubated with 10⁻¹²-10⁻⁸ M AFMK combined with 10⁻⁸ M caerulein stimulation for 48 h. Western blot was used to detect GPx, TNF-α, Bcl-2, Bax, and Caspase-3 protein expression.</p> <p>Results: AFMK dose-dependently increased GPx, Bax, and Caspase-3 levels, decreased TNF-α and Bcl-2 levels, and exerted protective effects by regulating antioxidant and apoptosis pathways.[2]</p>
In vivo	<p>Methods: In male Wistar rats, an acute pancreatitis model was induced by subcutaneous infusion of caerulein. AFMK (5, 10, 20 mg/kg) was administered by single intraperitoneal injection 30 min before modeling, with solvent being saline plus absolute ethanol; the control group received an equal volume of solvent.</p> <p>Results: AFMK dose-dependently alleviated pancreatic tissue edema, reduced serum amylase and TNF-α levels, validating its in vivo anti-inflammatory and antioxidant activities.[3]</p>

Solubility Information

Solubility	DMSO: 50 mg/mL (189.19 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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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>
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Preparing Stock Solutions

	1mg	5mg	10mg
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

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

Holtkamp, Chantal E et al. Ultraviolet Radiation-Induced Mitochondrial Disturbances Are Attenuated by Metabolites of Melatonin in Human Epidermal Keratinocytes. *Metabolites* vol. 13,7 861. 20 Jul. 2023.

Jaworek, J et al. Melatonin metabolite, N(1)-acetyl-N(1)-formyl-5-methoxykynuramine (AFMK), attenuates acute pancreatitis in the rat: in vivo and in vitro studies. *Journal of physiology and pharmacology : an official journal of the Polish Physiological Society* vol. 67,3 (2016): 411-21.

Jaworek, J et al. Melatonin metabolite, N(1)-acetyl-N(1)-formyl-5-methoxykynuramine (AFMK), attenuates acute pancreatitis in the rat: in vivo and in vitro studies. *Journal of physiology and pharmacology : an official journal of the Polish Physiological Society* vol. 67,3 (2016): 411-21.

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