

Punicic acid

Chemical Properties

CAS No. : 544-72-9

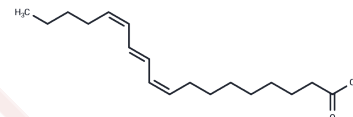
Formula: C₁₈H₃₀O₂

Molecular Weight: 278.43

Store at low temperature

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	Punicic acid (Trichosanic acid) is a naturally occurring conjugated linolenic acid and polyunsaturated fatty acid that is anti-obesity and anti-diabetic through activation of PPAR α , PPAR β , PPAR γ , and inhibition of NF- κ B; anti-inflammatory through inhibition of cyclooxygenase (COX) and lipoxygenase (LOX); improves neuroinflammation; and prevention of osteoporosis.
Targets(IC50)	NF- κ B,Proteasome,Microtubule Associated,PKC,PPAR,TNF,transporter
In vitro	<p>Punicic acid at 10 μM for 4 min strongly inhibits TNF-α-induced excessive ROS production in neutrophils, without affecting ROS production triggered by fMLP or Phorbol 12-myristate 13-acetate [1].</p> <p>Punicic acid at concentrations ranging from 0 to 40 μM for 30 min reduces TNF-α-induced p47phox phosphorylation starting at 10 μM [1].</p> <p>Punicic acid at 10 μM for 30 min inhibits NADPH oxidase activation in neutrophils [1].</p> <p>Punicic acid at 0 to 40 μM for 48 h shows a concentration-dependent anti-proliferative effect on MDA-ERα7 and MDA-wt cells [2].</p> <p>Punicic acid at 40 μM for 48 h induces apoptosis in MDA-ERα7 and MDA-wt cells and increases the percentage of cells in the G2/M phase. This apoptotic effect is completely blocked by the presence of 20 μM α-tocotrienol[2].</p> <p>The anti-proliferative effect of Punicic acid at 5 to 80 μM for 48 h is partially inhibited by 4 μM BIM in MDA-ERα7 and MDA-wt cells [2].</p>
In vivo	Oral administration of Punicic acid (400 μ g, once daily for ten days) significantly alleviated colonic damage induced by 2,4,6-trinitrobenzenesulfonic acid (TNBS) in male Wistar rats, resulting in only mild inflammatory infiltration and scattered mucosal erosions [2].

Solubility Information

Solubility	DMSO: 80 mg/mL (287.33 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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A DRUG SCREENING EXPERT

In vivo Formulation	10% DMSO+90% Corn Oil: 3.3 mg/mL (11.85 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	3.5916 mL	17.9578 mL	35.9157 mL
5 mM	0.7183 mL	3.5916 mL	7.1831 mL
10 mM	0.3592 mL	1.7958 mL	3.5916 mL
50 mM	0.0718 mL	0.3592 mL	0.7183 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

Boussetta T, Raad H, Lett eron P, Gougerot-Pocidalo MA, Marie JC, Driss F, El-Benna J. Punicic acid a conjugated linolenic acid inhibits TNFalpha-induced neutrophil hyperactivation and protects from experimental colon inflammation in rats. PLoS One. 2009 Jul 31;4(7):e6458.

Grossmann ME, Mizuno NK, Schuster T, Cleary MP. Punicic acid is an omega-5 fatty acid capable of inhibiting breast cancer proliferation. Int J Oncol. 2010 Feb;36(2):421-6.

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