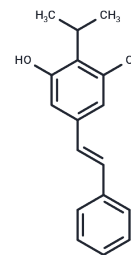


Tapinarof

Chemical Properties

CAS No. :	79338-84-4
Formula:	C17H18O2
Molecular Weight:	254.32
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	Tapinarof (Benvitimod) is targeted as a topical cream treatment for psoriasis, a chronic autoimmune skin disease.
Targets(IC50)	AhR, Aryl Hydrocarbon Receptor
In vitro	Tapinarof activates the AhR pathway through direct binding, inducing dose-dependent nuclear translocation of AhR in immortalized keratinocytes (HaCaT).
In vivo	Tapinarof mediates its anti-inflammatory effects via the AhR pathway in IMQ-treated mice. In mice expressing AhR on a C57Bl/6 background, both Tapinarof and 6-formylindolo(3,2-b)carbazole (FICZ) significantly lower clinical inflammation scores. Conversely, AhR knockout (KO) mice exhibit no such anti-inflammatory response to Tapinarof. FICZ serves as a benchmark in these experiments, demonstrating comparable reduction in inflammation in wild-type mice, but ineffective in AhR KO mice.

Solubility Information

Solubility	DMSO: 55 mg/mL (216.26 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 (7.86 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

	1mg	5mg	10mg
1 mM	3.9321 mL	19.6603 mL	39.3205 mL
5 mM	0.7864 mL	3.9321 mL	7.8641 mL
10 mM	0.3932 mL	1.966 mL	3.9321 mL
50 mM	0.0786 mL	0.3932 mL	0.7864 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

Smith SH, et al. Tapinarof Is a Natural AhR Agonist that Resolves Skin Inflammation in Mice and Humans. *J Invest Dermatol.* 2017 Oct;137(10):2110-2119.

Han Q, Chen H, Wang L, et al. Systemic Deficiency of GHR in Pigs leads to Hepatic Steatosis via Negative Regulation of AHR Signaling. *International Journal of Biological Sciences.* 2021, 17(15): 4108-4121.

Sun Y, Chen L H, Wang H X, et al. Activation of aryl hydrocarbon receptor ameliorates rosacea-like eruptions in mice and suppresses the TLR signaling pathway in LL-37-induced HaCaT cells. *Toxicology and Applied Pharmacology.* 2022: 116189.

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