

β -Apo-13-carotenone

Chemical Properties

CAS No. :	17974-57-1
Formula:	C ₁₈ H ₂₆ O
Molecular Weight:	258.40
Storage:	Keep away from direct sunlight, Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>

Biological Description

Description	β -Apo-13-carotenone, a naturally occurring apocarotenoid, functions as an antagonist of the retinoid X receptor (RXR). β -Apo-13-carotenone inhibits transactivation of RXR α but does not interfere with coactivator binding to the receptor in the manner observed for the known antagonist UVI3003. β -Apo-13-carotenone induces the formation of a transcriptionally silent RXR tetramer. β -Apo-13-carotenone is therefore relevant for mechanistic investigations involving nuclear receptor signaling, transcriptional regulation, and retinoid-associated cellular processes.
Targets(IC50)	Retinoid Receptor,RAR/RXR
In vitro	In homogenates of intestinal mucosa of rat, β -Apo-13-carotenone is identified as enzymatic cleavage products of β -carotene. β -Apo-13-carotenone is antagonize the activation of RXR α by 9-cis-retinoic acid and is effective at concentrations as low as 1nM. Molecular modeling studies reveal that β -Apo-13-carotenone makes molecular interactions like an antagonist of RXR α [1]. β -Apo-13-carotenone competes for 9cRA binding to RXR α with an affinity (7-8 nM) identical to 9cRA itself. β -Apo-13-carotenone antagonizes 9cRA activation of full-length hRXR α with a similar efficiency as the known antagonist UVI3003. β -Apo-13-carotenone induces formation of the RXR α transcriptionally silent tetramer but does not inhibit coactivator recruitment to the isolated LBD[2].

Solubility Information

Solubility	DMSO: 80 mg/mL (309.6 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: 2.00 mg/mL (7.74 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	3.870 mL	19.3498 mL	38.6997 mL
5 mM	0.774 mL	3.870 mL	7.7399 mL
10 mM	0.387 mL	1.935 mL	3.870 mL
50 mM	0.0774 mL	0.387 mL	0.774 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

Eroglu A, et al. The eccentric cleavage product of β -carotene, β -apo-13-carotenone, functions as an antagonist of RXR α . Arch Biochem Biophys. 2010 Dec 1;504(1):11-6.

Sun J, et al. β -Apo-13-carotenone regulates retinoid X receptor transcriptional activity through tetramerization of the receptor. J Biol Chem. 2014 Nov 28;289(48):33118-24.

Wang CX, et al. Actions of β -apo-carotenoids in differentiating cells: differential effects in P19 cells and 3T3-L1 adipocytes. Arch Biochem Biophys. 2015 Apr 15;572:2-10.

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