上海源叶生物科技有限公司
Shanghai yuanye Bio-Technology Co., Ltd
电话：021-61312973　　传真：021-55068248
网址：www.shyuanye.com
邮箱：shyysw@sina.com

产品名称： β-Apo-13-carotenone
产品别名： D'Orenone

生物活性：

Description	β-Apo-13-carotenone (D'Orenone) is a naturally occurring β-apocarotenoid functioned as an antagonist of RXRα.
In Vitro	β-apo-13-Carotenone is identified as enzymatic cleavage products of β-carotene in homogenates of intestinal mucosa of rat. β-apo-13-carotenone is found to antagonize the activation of RXRα 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 RXRα[1]. β-apo-13-carotenone competes for 9cRA binding to RXRα with an affinity (7–8 nM) identical to 9cRA itself. β-apo-13-carotenone antagonizes 9cRA activation of full-length hRXRα with a similar efficiency as the known antagonist UVI3003. β-apo-13-carotenone induces formation of the RXRα transcriptionally silent tetramer but does not inhibit coactivator recruitment to the isolated LBD[2]. The uptake and/or metabolism of β-apo-13-carotenone does not allow for accumulation of these β-carotene metabolites in cells. 3T3-L1 adipocyte marker gene expression is induced by β-apo-carotenoid treatment[3].

Solvent&Solubility

In Vitro:

DMSO : 33.33 mg/mL (**128.99 mM**; Need ultrasonic)

H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.8700 mL	19.3498 mL	38.6997 mL
	5 mM	0.7740 mL	3.8700 mL	7.7399 mL
	10 mM	0.3870 mL	1.9350 mL	3.8700 mL

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80° C, 6 months; -20° C, 1 month (protect from light, stored under nitrogen)。-80° C 储存时，请在 6 个月内使用，-20° C 储存时，请在 1 个月内使用。

In Vivo:

请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 In Vitro 方式配制澄清的储备液，再依次添加助溶剂：

——为保证实验结果的可靠性，澄清的储备液可以根据储存条件，适当保存；体内实验的工作液，建议您现用现配，当天使用； 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比；如在配制过程中出现沉淀、析出现象，可以通过加热和/或超声的方式助溶

1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline

Solubility: ≥ 2.5 mg/mL (9.67 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (9.67 mM，饱和度未知) 的澄清溶液。

以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 400 μL PEG300 中，混合均匀；向上述体系中加入 50 μL Tween-80，混合均匀；然后继续加入 450 μL 生理盐水定容至 1 mL。

2.请依序添加每种溶剂： 10% DMSO →90% corn oil

	Solubility: ≥ 2.5 mg/mL (9.67 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (9.67 mM，饱和度未知) 的澄清溶液，此方案不适用于实验周期在半个月以上的实验。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中，混合均匀。
References	[1]. Eroglu A, et al. The eccentric cleavage product of β-carotene, β-apo-13-carotenone, functions as an antagonist of RXRα. Arch Biochem Biophys. 2010 Dec 1;504(1):11-6. [2]. 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. [3]. 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.
实验参考：	
Kinase Assay	Cos-1 cells are transfected in serum-free medium with three plasmids mixed in the following amounts per well, 0.05 μg of pRL-TK, 2 μg of pRXRE-luciferase, 2.5 μg of pSG5-RXRα in triplicates. Following transfection, the plates are incubated at 37°C in 5 % CO_2 for 4 h. The medium is then changed to complete DMEM. Charcoal stripped FBS has been treated with activated carbon to adsorb lipophilic compounds including retinoids. Twenty hours after transfection, cells are treated with test compounds (β-Apo-13-carotenone) that are dissolved in ethanol or 0.1% ethanol alone for an additional 24 h. Cells are washed once with PBS and lysed by incubation with 500 μL passive lysis buffer for 15 min at room temperature. A 20-μL aliquot of cell lysate is then assayed for luciferase activities using a kit[1].
References	[1]. Eroglu A, et al. The eccentric cleavage product of β-carotene, β-apo-13-carotenone, functions as an antagonist of RXRα. Arch Biochem Biophys. 2010 Dec 1;504(1):11-6. [2]. 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. [3]. 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.