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：CDDO Imidazolide
产品别名：CDDO-Im；RTA-403; TP-235

生物活性：

Description	CDDO-Im (CDDO-imidazolide) is an activator of Nrf2 and PPAR, with Kis of 232 and 344 nM for PPARα and PPARγ.

IC_{50} & Target	PPARα	PPARγ	Nrf2
	232 nM (Ki)	344 nM (Ki)	

In Vitro	CDDO-Im is highly active in suppressing cellular proliferation of human leukemia and breast cancer cell lines (IC50 approximately 10-30 nM). In U937 leukemia cells, CDDO-Im also induces monocytic differentiation as measured by increased cell surface expression of CD11b and CD36[1]. Treatment with CDDO-Im elevates protein levels of Nrf2, a transcription factor previously shown to bind ARE sequences, and increases expression of a number of antioxidant and detoxification genes regulated by Nrf2[2]. CDDO-Im is one of the most potent synthetic triterpenoids shown to induce growth inhibition and apoptosis in various human cancer cells, including multiple myeloma, lung, pancreas and breast cancer. CDDO-Im treatment markedly induces cell cycle arrest at G2/M-phase and apoptosis in the triple-negative breast cancer cell lines, SUM159 and MDA-MB-231. The CD24−/EpCAM+ cells in SUM159 tumorspheres are significantly inhibited by CDDO-Im treatment. CDDO-Im also significantly decreases sphere forming efficiency and tumorsphere size in both primary and secondary sphere cultures[3].
In Vivo	CDDO-Im is a potent inhibitor of de novo inducible nitric oxide synthase expression in primary mouse macrophages. Moreover, CDDO-Im inhibits growth of B16 murine melanoma and L1210 murine leukemia cells in vivo. Injection of 10 nM (5.4 μg) of CDDO-Im almost completely blocks the ability of IFN-γ to induce iNOS, and treatment with as little as 1 nmol of CDDO-Im (0.54 μg) is partially effective[1].

Solvent&Solubility

In Vitro:

DMSO : 50 mg/mL (**92.30 mM;** Need ultrasonic)

H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.8460 mL	9.2299 mL	18.4597 mL
5 mM	0.3692 mL	1.8460 mL	3.6919 mL
10 mM	0.1846 mL	0.9230 mL	1.8460 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。-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 (4.61 mM); Suspended solution; Need ultrasonic 此方案可获得 2.5 mg/mL (4.61 mM)的均匀悬浊液，悬浊液可用于口服和腹腔注射。 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% (20% SBE-β-CD in saline) Solubility: 2.5 mg/mL (4.61 mM); Suspended solution; Need ultrasonic 此方案可获得 2.5 mg/mL (4.61 mM)的均匀悬浊液，悬浊液可用于口服和腹腔注射。 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 20% 的 SBE-β-CD 生理盐水水溶液中，混合均匀。 3.请依序添加每种溶剂： 10% DMSO →90% corn oil Solubility: ≥ 2.5 mg/mL (4.61 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (4.61 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]. Place AE, et al. The novel synthetic triterpenoid, CDDO-imidazolide, inhibits inflammatory response and tumor growth in vivo. Clin Cancer Res. 2003 Jul;9(7):2798-806. [2]. Liby K, et al. The synthetic triterpenoids, CDDO and CDDO-imidazolide, are potent inducers of heme oxygenase-1 and Nrf2/ARE signaling. Cancer Res. 2005 Jun 1;65(11):4789-98. [3]. So JY, et al. A synthetic triterpenoid CDDO-Im inhibits tumorsphere formation by regulating stem cell signaling pathways in triple-negative breast cancer. PLoS One. 2014 Sep 17;9(9):e107616.

实验参考：

Cell Assay	CDDO-Im is dissolved in DMSO. SUM159 and MDA-MB-231 cells are seeded into each well of 96-well plates (1,000 cell/well) and treated the next day with vehicle control or CDDO-Im (1, 10, 50, 100 and 200 nM) for given incubation time. The absorbance is measured with a spectrophotometer to determine cell proliferation rate[3].
Animal Administration	Mice: Mice are injected i.p. with thioglycollate, and the resulting resident peritoneal macrophages are activated 3 days later with an i.p. injection of IFN-γ. CDDO and CDDO-Im are injected i.p. 30 min after IFN-γ. Macrophages are harvested 10 h later, cultured for 12 h, and then assayed for expression of iNOS protein and production of nitric oxide (NO)[1].
References	[1]. Place AE, et al. The novel synthetic triterpenoid, CDDO-imidazolide, inhibits inflammatory response and tumor growth in vivo. Clin Cancer Res. 2003 Jul;9(7):2798-806. [2]. Liby K, et al. The synthetic triterpenoids, CDDO and CDDO-imidazolide, are potent inducers of heme oxygenase-1 and Nrf2/ARE signaling. Cancer Res. 2005 Jun 1;65(11):4789-98. [3]. So JY, et al. A synthetic triterpenoid CDDO-Im inhibits tumorsphere formation by regulating stem cell signaling pathways in triple-negative breast cancer. PLoS One. 2014 Sep 17;9(9):e107616.