## Product Datasheet

# CDDO-Im

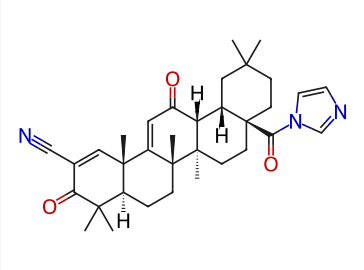
Catalog No. **BP-02071** · CAS **443104-02-7** · Form **free base** · Physical state **solid** · Color **White to off-white** · Version **1.0** · Revision **2026-09-14**

**FOR RESEARCH USE ONLY. NOT FOR HUMAN OR VETERINARY USE.**

| Target | Research area |
|---|---|
| **Keap1-Nrf2; PPAR; Ferroptosis** | **Cancer** |

| | |
|---|---|
| Molecular formula | $C_{34}H_{43}N_3O_3$ |
| Molecular weight | **541.7235** |

**STRUCTURE**



## DESCRIPTION

CDDO-Im (RTA-403) is an activator of Nrf2 and PPAR, with Kis of 232 and 344 nM for PPARα and PPARγ.

## BIOLOGICAL ACTIVITY

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. 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. 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.

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.

## SOLUBILITY

Soluble in DMSO

## 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.

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