

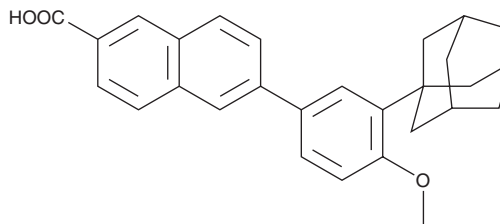
PRODUCT INFORMATION



Adapalene

Item No. 13655

CAS Registry No.: 106685-40-9
Formal Name: 6-(4-methoxy-3-tricyclo[3.3.1.1^{3,7}]dec-1-ylphenyl)-2-naphthalenecarboxylic acid
Synonym: CD 271
MF: C₂₈H₂₈O₃
FW: 412.5
Purity: ≥98%
UV/Vis.: λ_{max}: 233, 271, 319 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Adapalene is supplied as a crystalline solid. A stock solution may be made by dissolving the adapalene in the solvent of choice. Adapalene is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of adapalene in these solvents is approximately 5 mg/ml.

Description

Adapalene is a synthetic retinoid and an agonist of retinoic acid receptors (RARs; K_ds = 1,100, 34, and 130 nM for RARα, RARβ, and RARγ, respectively).¹⁻⁵ It inhibits growth and differentiation of sebocytes in a concentration-dependent manner in primary rat preputial cell culture. Adapalene (10 μM) completely inhibits the activity of soybean 15-lipoxygenase (15-LOX) in an enzyme assay and inhibits the 5- and 15-LOX pathways in human blood polymorphonuclear leukocytes (PMNs).² It reduces the protein levels of toll-like receptor 2 (TLR2) and IL-10 in skin explants isolated from patients with acne and healthy controls in a concentration-dependent manner but increases the expression of the antigen-presenting protein CD1d in acne skin explants while decreasing it in control explants.³ It inhibits inflammation in rodent models of ear edema induced by arachidonic acid and carrageenan-induced paw edema.² Adapalene (100 μM) also induces apoptosis and inhibits proliferation of CC-531, HT-29, and LoVo colon cancer cells and reduces tumor growth in a DLD-1 colon cancer nude mouse xenograft model in a dose-dependent manner.^{4,5} Formulations containing adapalene have been used in the treatment of acne vulgaris.

References

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2. Hensby, C., Cavey, D., Bouclier, M., *et al.* The *in vivo* and *in vitro* anti-inflammatory activity of CD271: A new retinoid-like modulator of cell differentiation. *Agents Actions* **29**(1-2), 56-58 (1990).
3. Tenaud, I., Khammari, A., and Dreno, B. *In vitro* modulation of TLR-2, CD1d and IL-10 by adapalene on normal human skin and acne inflammatory lesions. *Exp. Dermatol.* **16**(6), 500-506 (2007).
4. Ocker, M., Herold, C., Ganslmayer, M., *et al.* The synthetic retinoid adapalene inhibits proliferation and induces apoptosis in colorectal cancer cells *in vitro*. *Int. J. Cancer* **107**(3), 453-459 (2003).
5. Shi, X.-N., Li, H., Yao, H., *et al.* Adapalene inhibits the activity of cyclin-dependent kinase 2 in colorectal carcinoma. *Mol. Med. Rep.* **12**(5), 6501-6508 (2015).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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