

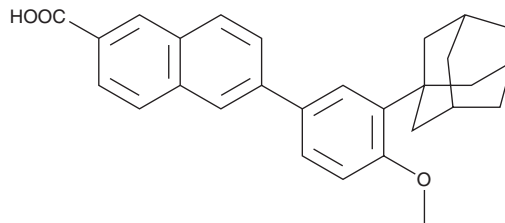
# Product Information



## Adapalene

Item No. 13655

**CAS Registry No.:** 106685-40-9  
**Formal Name:** 6-(4-methoxy-3-tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylphenyl)-2-naphthalenecarboxylic acid  
**Synonyms:** CD 271, Differin  
**MF:** C<sub>28</sub>H<sub>28</sub>O<sub>3</sub>  
**FW:** 412.5  
**Purity:** ≥98%  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid



### Laboratory Procedures

For long term storage, we suggest that adapalene be stored as supplied at -20°C. It should be stable for at least two years. 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.

If aqueous stock solutions are required for biological experiments, they can best be prepared by diluting the organic solvent into aqueous buffers or isotonic saline. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Adapalene, a synthetic naphthoic acid derivative, is a selective agonist of retinoic acid receptor (RAR)-β and RAR-γ (K<sub>d</sub>s = 34 and 130 nM, respectively).<sup>1</sup> At 0.1-10 μM, adapalene dose-dependently inhibits sebocyte growth, proliferation, and differentiation in a primary rat preputial cell culture system.<sup>1</sup> Adapalene demonstrates anti-inflammatory and immunomodulatory activity by inhibiting 5-lipoxygenase-catalyzed leukotriene production and expression of toll-like receptor 2 on human monocytes.<sup>2</sup> It is commonly used for the study of the pathogenesis and treatment of *acne vulgaris*.<sup>3</sup>

### References

1. Kim, M.-J., Ciletti, N., Michel, S., *et al.* The role of specific retinoid receptors in sebocyte growth and differentiation in culture. *J. Invest. Dermatol.* **114**, 349-353 (2000).
2. Jones, D.A. The potential immunomodulatory effects of topical retinoids. *Dermatol. Online J.* **11**(1), 3 (2005).
3. Thiboutot, D. New treatments and therapeutic strategies for acne. *Arch. Fam. Med.* **9**, 179-187 (2000).

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY; NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

#### MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

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### Cayman Chemical

#### Mailing address

1180 E. Ellsworth Road  
Ann Arbor, MI  
48108 USA

#### Phone

(800) 364-9897  
(734) 971-3335

#### Fax

(734) 971-3640

#### E-Mail

custserv@caymanchem.com

#### Web

www.caymanchem.com