

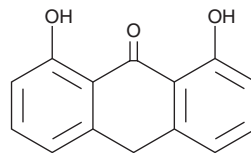
# PRODUCT INFORMATION



## Anthralin

Item No. 28371

**CAS Registry No.:** 1143-38-0  
**Formal Name:** 1,8-dihydroxy-9(10H)-anthracenone  
**Synonyms:** 1,8,9-Anthracenetriol, Dithranol, NSC 43970, NSC 629313  
**MF:** C<sub>14</sub>H<sub>10</sub>O<sub>3</sub>  
**FW:** 226.2  
**Purity:** ≥90%  
**UV/Vis.:** λ<sub>max</sub>: 257, 289, 356 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

Anthralin is supplied as a crystalline solid. A stock solution may be made by dissolving the anthralin in the solvent of choice, which should be purged with an inert gas. Anthralin is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of anthralin in these solvents is approximately 5 and 10 mg/ml, respectively.

Anthralin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, anthralin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Anthralin has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Anthralin is an anthrone inhibitor of keratinocyte proliferation and a modulator of differentiation.<sup>1</sup> It increases apoptosis and inhibits proliferation of normal human keratinocytes (NHKs) when used at a concentration of 2.5 μM. It also decreases the mitochondrial membrane potential, increases cytochrome c release, and induces perinuclear mitochondrial clustering in NHKs when used at a concentration of 5 μM.<sup>2</sup> Anthralin (0.25 μM) decreases the expression of β-defensin-2 (Item No. 24577) and S100 calcium-binding protein A9 (S100A9) and increases the expression of IL-6 and IL-8 in IL-17A- and IL-22-stimulated NHKs.<sup>1</sup> It also inhibits leukotriene B<sub>4</sub> (LTB<sub>4</sub>; Item No. 20110) production, stimulated by the calcium ionophore A23187 (Item No. 11016), from human neutrophils (IC<sub>50</sub> = 7 μM).<sup>3</sup> Topical anthralin (0.1%) induces hair regrowth in a Dundee experimental bald rat (DEBR) model of alopecia areata.<sup>4</sup>

### References

1. Holstein, J., Fehrenbacher, B., Brück, J., *et al.* Anthralin modulates the expression pattern of cytokeratins and antimicrobial peptides by psoriatic keratinocytes. *J. Dermatol. Sci.* **87(3)**, 236-245 (2017).
2. McGill, A., Frank, A., Emmett, N., *et al.* The anti-psoriatic drug anthralin accumulates in keratinocyte mitochondria, dissipates mitochondrial membrane potential, and induces apoptosis through a pathway dependent on respiratory competent mitochondria. *FASEB J.* **19(8)**, 1012-1014 (2005).
3. Schröder, J.M. Anthralin (1,8-dihydroxyanthrone) is a potent inhibitor of leukotriene production and LTB<sub>4</sub>-ω oxidation by human neutrophils. *J. Invest. Dermatol.* **87(5)**, 624-629 (1986).
4. Tang, L., Sundberg, J.P., Liu, H., *et al.* Old wine in new bottles: Reviving old therapies for alopecia areata using rodent models. *J. Invest. Dermatol. Symp. Proc.* **8(2)**, 212-216 (2003).

#### 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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