

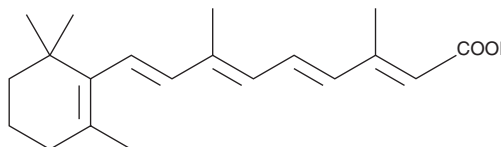
PRODUCT INFORMATION



all-trans Retinoic Acid

Item No. 11017

CAS Registry No.: 302-79-4
Formal Name: (2E,4E,6E,8E)-3,7-dimethyl-9-(2,6,6-trimethylcyclohex-1-en-1-yl)nona-2,4,6,8-tetraenoic acid
Synonyms: atRA, NSC 122578, NSC 122758, RA, Vitamin A Acid
MF: C₂₀H₂₈O₂
FW: 300.4
Purity: ≥98%
UV/Vis.: λ_{max}: 350 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

all-trans Retinoic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the all-trans retinoic acid in the solvent of choice. all-trans Retinoic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of all-trans retinoic acid in ethanol is approximately 0.5 mg/ml and approximately 20 mg/ml in DMSO and DMF.

Description

all-trans Retinoic acid is a metabolite of vitamin A and a ligand for retinoic acid receptors (RARs) with IC₅₀ values of 9, 3, and 10 nM for RARα, RARβ, and RARγ, respectively, in radioligand binding assays.¹ It induces expression of a luciferase reporter in COS-7 cells expressing RARα, RARβ, or RARγ (EC₅₀s = 169, 9, and 2 nM, respectively). all-trans Retinoic acid (17 nmol) reduces papilloma formation induced by phorbol 12-myristate 13-acetate (TPA; Item No. 10008014) in mice.² It reduces bile duct proliferation, hydroxyproline levels, and liver inflammation in a rat model of α-naphthylisothiocyanate-induced chronic cholestasis and reduces plasma levels of alkaline phosphatase and bile salts in the *Mdr2*^{-/-} mouse model of cholestasis.³ all-trans Retinoic acid also reduces hepatic fat accumulation, triglycerides, body weight, and serum glucose levels in mice with Western diet-induced obesity.⁴

References

1. Idrest, N., Marill, J., Flexor, M.A., *et al.* Activation of retinoic acid receptor-dependent transcription by all-trans-retinoic acid metabolites and isomers. *J. Biol. Chem.* **277**(25), 31491-31498 (2002).
2. Verma, A.K., Slaga, T.J., Wertz, P.W., *et al.* Inhibition of skin tumor promotion by retinoic acid and its metabolite 5,6-epoxyretinoic acid. *Cancer Res.* **40**(7), 2367-2371 (1980).
3. Cai, S.Y., Mennone, A., Soroka, C.J., *et al.* All-trans-retinoic acid improves cholestasis in α-naphthylisothiocyanate-treated rats and *Mdr2*^{-/-} mice. *J. Pharmacol. Exp. Ther.* **349**(1), 94-98 (2014).
4. Kim, S.C., Kim, C.K., Axe, D., *et al.* All-trans-retinoic acid ameliorates hepatic steatosis in mice by a novel transcriptional cascade. *Hepatology* **59**(5), 1750-1760 (2014).

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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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM