

PRODUCT INFORMATION



all-trans Retinoic Acid-d₅

Item No. 25415

Formal Name: (2E,4E,6E,8E)-9-(6,6-dimethyl-2-(methyl-d₃)cyclohex-1-en-1-yl-3,3-d₂)-3,7-dimethylnona-2,4,6,8-tetraenoic acid

Synonyms: atRA-d₅, RA-d₅, Vitamin A Acid-d₅

MF: C₂₀H₂₃D₅O₂

FW: 305.5

Chemical Purity: ≥98% (all-trans Retinoic Acid)

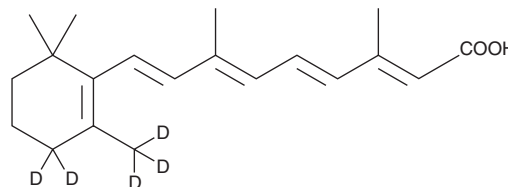
Deuterium

Incorporation: ≥99% deuterated forms (d₁-d₅); ≤1% d₀

Supplied as: A solid

Storage: -20°C

Stability: ≥2 years



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

Laboratory Procedures

all-trans Retinoic acid-d₅ is intended for use as an internal standard for the quantification of all-trans retinoic acid (Item No. 11017) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

all-trans Retinoic acid-d₅ is supplied as a solid. A stock solution may be made by dissolving the all-trans retinoic acid-d₅ in the solvent of choice. all-trans Retinoic acid-d₅ 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-d₅ 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 RAR α , RAR β , and RAR γ , respectively, in radioligand binding assays.¹ It induces expression of a luciferase reporter in COS-7 cells expressing RAR α , RAR β , or RAR γ (EC₅₀s = 169, 9, and 2 nM, respectively). all-trans Retinoic acid (12 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. *J. Biol. Chem.* **277**(25), 31491-31498 (2002).
2. Verma, A.K., Slaga, T.J., Wertz, P.W., et al. *Cancer Res.* **40**(7), 2367-2371 (1980).
3. Cai, S.Y., Mennone, A., Soroka, C.J., et al. *J. Pharmacol. Exp. Ther.* **349**(1), 94-98 (2014).
4. Kim, S.C., Kim, C.K., Axe, D., et al. *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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