SZABO SCANDIC

Part of Europa Biosite

Produktinformation

- Forschungsprodukte & Biochemikalien
- Zellkultur & Verbrauchsmaterial
- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

Weitere Information auf den folgenden Seiten!
See the following pages for more information!

Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

Retinoic acid-d_5

Cat. No.: HY-14649S4

CAS No.: 78996-15-3

Molecular Formula: $C_{20}H_{23}D_5O_2$

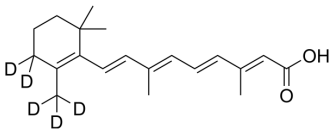
Molecular Weight: 305.47

Target: RAR/RXR; Isotope-Labeled Compounds; PPAR

Pathway: Metabolic Enzyme/Protease; Vitamin D Related/Nuclear Receptor; Others; Cell Cycle/DNA Damage

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (163.68 mM; ultrasonic and warming and heat to 60°C)

DMSO : 50 mg/mL (163.68 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.2736 mL	16.3682 mL	32.7364 mL
5 mM	0.6547 mL	3.2736 mL	6.5473 mL
10 mM	0.3274 mL	1.6368 mL	3.2736 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Retinoic acid-d_5 is the the deuterium labeled Retinoic acid (HY-14649). Retinoic acid is a metabolite of vitamin A that plays important roles in cell growth, differentiation, and organogenesis. Retinoic acid is a natural agonist of RAR nuclear receptors, with IC_{50}s of 14 nM for RARα/β/γ. Retinoic acid bind to PPARβ/δ with K_d of 17 nM. Retinoic acid acts as an inhibitor of transcription factor Nrf2 through activation of retinoic acid receptor alpha[1][2][3][4][5].

In Vitro

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1].

Retinoic acid (All-trans-retinoic acid, ATRA) is a highly potent derivative of vitamin A that is required for virtually all essential physiological processes and functions because of its involvement in transcriptional regulation of over 530 different genes. Retinoic acid exerts its actions by serving as an activating ligand of nuclear retinoic acid receptors (RARα-γ), which form heterodimers with retinoid X receptors (RXRα-γ)[2].

Retinoic acid (RA) bound to PPARα and PPARγ with a low affinity demonstrated by K_d values of 100-200 nM. In contrast,

Retinoic acid associates with PPARβ/δ with a K_d of 17 nM, revealing both high affinity and isotype selectivity[3].
Undifferentiated P19 cells express the Retinoic acid (RA) receptors RARα, RARβ, RARγ, and PPARβ/δ, as well as the Retinoic acid -binding proteins CRABP-II and FABP5. Induction of differentiation by treatment of cells with Retinoic acid results in transient up-regulation of CRABP-II and down-regulation of FABP5 that are observed at the level of both the respective proteins and mRNAs. Following the initial decrease, the level of both FABP5 protein and mRNA increases to attain a 2-2.5-fold higher level in mature neurons as compared with undifferentiated P19 cells. Induction of differentiation does not markedly affect the levels of either RARα or PPARβ/δ. The level of RARγ mRNA decreases by about 5-fold by day 4 and remained low in mature neurons[4].
Retinoic acid (RA) is a morphogen derived from retinol (vitamin A) that plays important roles in cell growth, differentiation, and organogenesis. The Retinoic acid interacts with retinoic acid receptor (RAR) and retinoic acid X receptor (RXR) which then regulate the target gene expression[5].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019 Feb;53(2):211-216.

[2]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019;53(2):211-216.

[3]. Wu L, et al. Retinoid X Receptor Agonists Upregulate Genes Responsible for the Biosynthesis of All-Trans-Retinoic Acid in Human Epidermis. PLoS One. 2016 Apr 14;11(4):e0153556.

[4]. Shaw N, et al. Retinoic acid is a high affinity selective ligand for the peroxisome proliferator-activated receptor beta/delta. J Biol Chem. 2003 Oct 24;278(43):41589-92.

[5]. Yu S, et al. Retinoic acid induces neurogenesis by activating both retinoic acid receptors (RARs) and peroxisomeproliferator-activated receptor β/δ (PPARβ/δ). J Biol Chem. 2012 Dec 7;287(50):42195-205.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA