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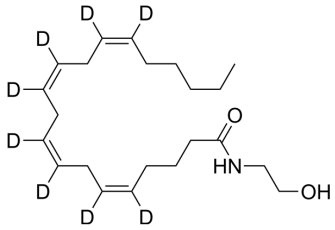
Anandamide-d_8

Cat. No.:	HY-10863S
CAS No.:	924894-98-4
Molecular Formula:	$C_{22}H_{29}D_8NO_2$
Molecular Weight:	355.58
Target:	Cannabinoid Receptor; PPAR; Endogenous Metabolite; Tau Protein; GPR55; Fungal; TRP Channel; Isotope-Labeled Compounds
Pathway:	GPCR/G Protein; Neuronal Signaling; Cell Cycle/DNA Damage; Metabolic Enzyme/Protease; Vitamin D Related/Nuclear Receptor; Anti-infection; Membrane Transporter/Ion Channel; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Anandamide-d8 is a deuterated labeled Anandamide[1]. Anandamide is an endocannabinoid. Anandamide modulates both neuronal and immune functions through two protein-coupled cannabinoid receptors (CB1 and CB2). Anandamide can activate numerous other receptors like PPARS, TRPV1, and GPR18/GPR55. Anandamide also has potential anti-fungal and anti-inflammatory activities. Anandamide can be used for the research of Alzheimer's disease (AD) and ulcerative colitis[2][3][4][5][6].
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]. Anandamide (0-250 μg/ml, 1 h) inhibits C. albicans hyphal growth and prevents hyphal adherence to epithelial cells[5]. Anandamide (0-250 μg/ml, 2 h) alters the expression of genes involved in adhesion and hyphal morphogenesis[5]. Anandamide reduces tau phosphorylation through the inhibition of the activity of protein kinases[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Anandamide (10 mg/kg, IP, once) considerably lowers the increase of glycemia in response to glucose ingestion compared with control, and this is associated with an improvement of glucose tolerance[3]. Anandamide (100 ng, ICV bilateral injection, single) partially prevents streptozotocin (STZ)-induced cognitive impairments, changes in synaptic markers and ventricle enlargement[4]. Anandamide exerts anti-inflammatory activities, attenuating the development of inflammation in a mouse model of ulcerative colitis[5]. Anandamide alleviates lipopolysaccharide (LPS)-induced neuroinflammation in rat primary microglial cultures[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Malek N, et al. Anandamide, Acting via CB2 Receptors, Alleviates LPS-Induced Neuroinflammation in Rat Primary Microglial Cultures. Neural Plast. 2015;2015:130639.

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Diabetes. 2015 Mar;64(3):808-18.

[4]. Sionov RV, et al. Anandamide prevents the adhesion of filamentous Candida albicans to cervical epithelial cells. Sci Rep. 2020 Aug 13;10(1):13728.

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

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