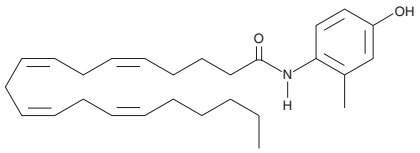
PRODUCT INFORMATION

VDM11

Item No. 10006731

CAS Registry No.:	313998-81-1
Formal Name:	N-(4-hydroxy-2-methylphenyl)-5Z,8Z,11Z,14Z-eicosatetraenamide
MF:	$C_{27}H_{39N}O_2$
FW:	409.6
Purity:	≥98%
Supplied as:	A solution in ethanol
Storage:	-20°C
Stability:	≥1 year
UV/Vis. λmax:	202, 231 nm



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

Laboratory Procedures

VDM11 is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of VDM11 in these solvents is approximately 20 mg/ml.

VDM11 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of VDM11 should be diluted with the aqueous buffer of choice. VDM11 has a solubility of approximately 0.25 mg/ml in a 1:2 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Numerous analogs of arachidonoyl ethanolamide (AEA) potentiate its biological activity. This potentiation is ascribed either to inhibition of AEA reuptake into neurons, or inhibition of fatty amide acyl hydrolase (FAAH) within the neurons.[1,2] VDM11 is an AEA transport inhibitor with essentially no activity on either the central cannabinoid receptor (CB_1), peripheral cannabinoid receptor (CB_2), or the vanilloid receptor 1 (VR_1).[3] However, VDM11 inhibits FAAH and monoacylglycerol lipase (MAGL) and may act as an alternative FAAH substrate.[4] At a concentration of 3 µM, VDM11, like AM404, inhibits glutamergic synaptic transmission between hippocampal neurons.[5] The mechanism of this effect may be a direct action on sodium channels. Thus, the use of anandamide analogs as uptake inhibitors and interpretation of the results must be undertaken with care.

References

1. Khanolkar, A.D. and Makriyannis, A. Structure-activity relationships of anandamide, an endogenous cannabinoid ligand. *Life Sci.* **65**, 607-616 (1999).
2. Deutsch, D.G., Glaser, S.T., Howell, J.M., *et al.* The cellular uptake of anandamide is coupled to its breakdown by fatty-acid amide hydrolase. *J. Biol. Chem.* **276(10)**, 6967-6973 (2001).
3. De Petrocellis, L., Bisogno, T., Davis, B.J., *et al.* Overlap between the ligand recognition properties of the anandamide transporter and the VR1 vanilloid receptor: Inhibitors of anandamide uptake with negligible capsaicin-like activity. *FEBS* **483**, 52-56 (2000).
4. Vandervoorde, S. and Fowler, C.J. Inhibition of fatty acid amide hydrolase and monoacylglycerol lipase by the anandamide uptake inhibitor VDM11: Evidence that VDM11 acts as an FAAH substrate. *Br. J. Pharmacol.* **145**, 885-893 (2005).
5. Kelley, B.G. and Thayer, S.A. Anandamide transport inhibitor AM404 and structurally related compounds inhibit synaptic transmission between rat hippocampal neurons in culture independent of cannabinoid CB_1 receptors. *Eur. J. Pharmacol.* **496**, 33-39 (2004).

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