

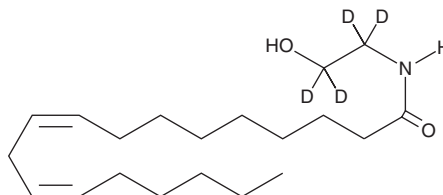
# Product Information



## Linoleoyl Ethanolamide-d<sub>4</sub>

Catalog No. 9000553

**Formal Name:** N-(2-hydroxyethyl-1,1,2,2-d<sub>4</sub>)-9Z,12Z-octadecadienamide  
**MF:** C<sub>20</sub>H<sub>33</sub>D<sub>4</sub>NO<sub>2</sub>  
**FW:** 327.5  
**Chemical Purity:** ≥98%  
**Deuterium Incorporation:** ≤1% d<sub>0</sub>  
**Stability:** ≥1 year at -20°C  
**Supplied as:** A solution in ethanol



### Laboratory Procedures

Linoleoyl ethanolamide-d<sub>4</sub> contains four deuterium atoms at the hydroxyethyl 1, 1', 2, and 2' positions. It is intended for use as an internal standard for the quantification of linoleoyl ethanolamide by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that linoleoyl ethanolamide-d<sub>4</sub> be stored as supplied at -20°C. It should be stable for at least one year.

Linoleoyl ethanolamide-d<sub>4</sub> 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 linoleoyl ethanolamide-d<sub>4</sub> in either of these solvents is approximately 25 mg/ml.

Linoleoyl ethanolamide-d<sub>4</sub> is used as an internal standard for the quantification of linoleoyl ethanolamide by stable isotope dilution 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).

Linoleoyl ethanolamide is an endocannabinoid detected in porcine brain and murine peritoneal macrophages which contains linoleate in place of the arachidonate moiety of arachidonoyl ethanolamide (AEA).<sup>1,2</sup> It has weak affinity for the central cannabinoid (CB<sub>1</sub>) and peripheral cannabinoid (CB<sub>2</sub>) receptors, exhibiting K<sub>i</sub> values of 10 and 25 μM, respectively.<sup>3</sup> However, it is only approximately 4-fold less potent than AEA at causing catalepsy in mice (ED<sub>50</sub> = 26.5 mg/kg).<sup>4</sup> In addition, linoleoyl ethanolamide increases ERK phosphorylation and AP-1-dependent transcription approximately 1.5-fold at 15 μM in a CB-receptor-independent manner.<sup>5</sup> However, cellular toxicity is readily apparent at concentrations of 10-20 μM. Linoleoyl ethanolamide inhibits human fatty acid amide hydrolase-dependent hydrolysis of AEA with a K<sub>i</sub> value of 9.0 μM, but also is hydrolyzed effectively by the enzyme.<sup>6,7</sup>

### References

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### Related Products

Linoleoyl Ethanolamide - Cat. No. 90155 • α-Linolenoyl Ethanolamide - Cat. No. 90215 • Dihomo-γ-Linolenoyl Ethanolamide - Cat. No. 90235 • Docosatraenoyl Ethanolamide - Cat. No. 90385 • 1-Linoleoyl Glycerol - Cat. No. 10008869

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

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