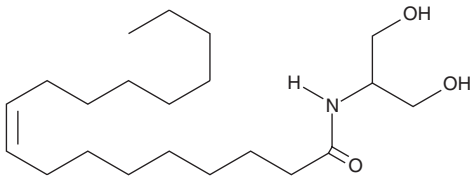
PRODUCT INFORMATION

Oleoyl Serinol

Item No. 13637

CAS Registry No.:	72809-08-6
Formal Name:	N-[2-hydroxy-1-(hydroxymethyl)ethyl]-9Z-octadecenamide
Synonyms:	N-Oleoyl Serinol, S-18
MF:	$C_{21}H_{41}NO_3$
FW:	355.6
Purity:	≥98%
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

Oleoyl serinol is supplied as a crystalline solid. A stock solution may be made by dissolving the oleoyl serinol in the solvent of choice, which should be purged with an inert gas. Oleoyl serinol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of oleoyl serinol in ethanol and DMF is approximately 30 mg/ml and approximately 15 mg/ml in DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of oleoyl serinol can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of oleoyl serinol in PBS (pH 7.2) is approximately 0.29 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Oleoyl serinol is an analog of ceramide and an agonist of the cannabinoid receptor GPR119 that has an EC_{50} value of 12 µM for stimulating secretion of GLP-1 in mouse endocrine GLUTag cells.[1] It has been found in *E. coli* that express human microbiota N-acyl synthase (hmNAS) genes. It induces cell death of F-11 murine neuroblastoma and apoptosis in U-87 human astrocytoma cells when used at a concentration of 100 µM.[2] Oleoyl serinol (80 µM) induces formation of a complex including PAR-4 and PKCζ in embryoid body-derived cells, decreases the levels of the pluripotency marker Oct-4 and prostate apoptosis response-4 (PAR-4), which mediates ceramide-induced apoptosis in embryonic stem cells.[3] It induces apoptosis selectively in rapidly dividing cells over differentiated cells as well as prevents teratoma formation and promotes neural differentiation in a neonatal mouse engraftment model of teratoma formation.

References

1. Cohen, L.J., Esterhazy, D., Kim, S.H., *et al.* Commensal bacteria make GPCR ligands that mimic human signalling molecules. *Nature* **549(7670)**, 48-53 (2017).
2. Bieberich, E., Hu, B., Silva, J., *et al.* Synthesis and characterization of novel ceramide analogs for induction of apoptosis in human cancer cells. *Cancer Lett.* **181(1)**, 55-64 (2002).
3. Bieberich, E., Silva, J., Wang, G., *et al.* Selective apoptosis of pluripotent mouse and human stem cells by novel ceramide analogues prevents teratoma formation and enriches for neural precursors in ES cell-derived neural transplants. *J. Cell. Biol.* **167(4)**, 723-734 (2004).

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