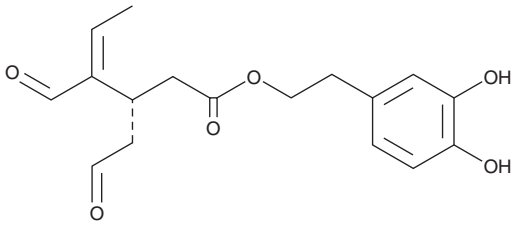
PRODUCT INFORMATION

Oleacein

Item No. 40719

CAS Registry No.:	149183-75-5
Formal Name:	(3S,4E)-4-formyl-3-(2-oxoethyl)-4-hexenoic acid, 2-(3,4-dihydroxyphenyl) ethyl ester
MF:	$C_{17}H_{20}O_6$
FW:	320.3
Purity:	≥95%
Supplied as:	A neat oil
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Plant/*Olea europaea*



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

Laboratory Procedures

Oleacein is supplied as a neat oil. A stock solution may be made by dissolving the oleacein in the solvent of choice, which should be purged with an inert gas. Oleacein is soluble in DMSO and acetonitrile.

Description

Oleacein is a secoiridoid polyphenol that has been found in *O. europea* and has diverse biological activities.[1-4] It inhibits 5-lipoxygenase (5-LO; IC_{50} = 2 µM for the human enzyme).[1] Oleacein (20 and 50 µM) reduces lipid accumulation and inhibits the transition into foam cells in human monocyte-derived macrophages.[2] It decreases lipid accumulation and levels of peroxisome proliferator-activated receptor γ (PPARγ) and fatty acid synthase (FASN), as well as increases adiponectin levels, in 3T3-L1 adipocytes.[3] *In vivo*, oleacein (20 mg/kg) reduces macrophage and lymphocyte infiltration in abdominal fat tissue and adipocyte size in a mouse model of high-fat diet-induced obesity. Oleacein also delays disease onset and progression in a mouse model of experimental autoimmune encephalomyelitis (EAE).[4]

References

1. Vougogiannopoulou, K., Lemus, C., Halabalaki, M., *et al.* One-step semisynthesis of oleacein and the determination as a 5-lipoxygenase inhibitor. *J. Nat. Prod.* **77(3)**, 441-445 (2014).
2. Filipek, A., Mikołajczyk, T.P., Guzik, T.J., *et al.* Oleacein and foam cell formation in human monocyte-derived macrophages: A potential strategy against early and advanced atherosclerotic lesions. *Pharmaceuticals (Basel)* **13(4)**, 64 (2020).
3. Lepore, S.M., Maggisano, V., Bulotta, S., *et al.* Oleacein prevents high fat diet-induced adiposity and ameliorates some biochemical parameters of insulin sensitivity in mice. *Nutrients* **11(8)**, 1829 (2019).
4. Gutiérrez-Miranda, B., Gallardo, I., Melliou, E., *et al.* Oleacein attenuates the pathogenesis of experimental autoimmune encephalomyelitis through both antioxidant and anti-inflammatory effects. *Antioxidants (Basel)* **9(11)**, 1161 (2020).

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