

Oleic Acid

Star 0

NAV Summary

Oleic Acid is a naturally occurring fatty acid with antibacterial properties added to a variety of drug products.

Generic Name Oleic Acid

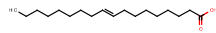
DrugBank Accession Number DB04224

Background An unsaturated fatty acid that is the most widely distributed and abundant fatty acid in nature. It is used commercially in the preparation of oleates and lotions, and as a pharmaceutical solvent. (Stedman, 26th ed)

Type Small Molecule

Groups Approved, Investigational, Vet approved

Structure



3D



Similar Structures

Weight Average: 282.4614
Monoisotopic: 282.255880332

Chemical Formula C₁₈H₃₄O₂

Synonyms Not Available

PHARMACOLOGY

Indication Not Available

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Pharmacodynamics Not Available

Mechanism of action

[\(U\) Peroxisome proliferator-activated receptor alpha](#)

Not Available

[BLOG] Precision Medicine in the Genomic Era. [Read More!](#)

Humans

[\(U\) Retinoic acid receptor RXR-alpha](#)

Not Available

Humans

[\(U\) Peroxisome proliferator-activated receptor gamma](#)

ligand

Humans

[\(U\) Myelin P2 protein](#)

Not Available

Humans

Absorption

Fatty acid uptake by different tissues may be mediated via passive diffusion to facilitated diffusion or a combination of both ². Fatty acids taken up by tissues are then stored in the form of triglycerides or oxidized ². Oleic acid was shown to penetrate rat skin ². Following oral administration of Brucea javanica oil emulsion in rats, the time of oleic acid to reach peak plasma concentration was approximately 15.6 hours ¹.

Volume of distribution

Radio-labelled oleic acid was detected in the heart, liver, lung, spleen, kidney, muscle, intestine, adrenal, blood, and lymph, and adipose, mucosal, and dental tissues ². Oleic acid is primarily transported via the lymphatic system ².

Protein binding

As with other fatty acids originating from adipose tissue stores, oleic acid may bind to serum albumin or remain unesterified in the blood ².

Metabolism

Like most fatty acids, oleic acid may undergo oxidation via beta-oxidation and tricarboxylic acid cycle pathways of catabolism, where an additional isomerization reaction is required for the complete catabolism of oleic acid. Via a series of elongation and desaturation steps, oleic acid may be converted into longer chain eicosatrienoic and nervonic acid ².

Route of elimination

Following oral administration of trace amounts of oleic acid, less than 10% of total oleic acid was found to be eliminated via fecal excretion ².

Half-life

No pharmacokinetic data available.

Clearance

No pharmacokinetic data available.

Adverse Effects

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Toxicity

In rat, oral LD50 74 g/kg and intravenous LD50 is 2.4 mg/kg ². Dermal LD50 in guinea pig was >3000 mg/kg ².

Pathways

Not Available

Pharmacogenomic Effects/ADRs [i](#)

Not Available