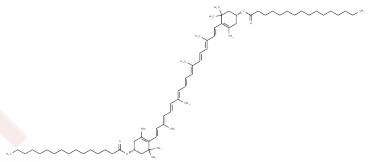
Data Sheet (Cat.No.TN4773)

TargetMol

Zeaxanthin dipalmitate

Chemical Properties



CAS No. : 144-67-2

Formula: C72H116O4

Molecular Weight: 1045.69

Storage: Store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Zeaxanthin dipalmitate (Physalien) is a lutein carotenoid found in fruits with anti-inflammatory, hepatoprotective, and anti-oxidative stress activity that attenuates ethanol-induced liver injury.Zeaxanthin dipalmitate restores mitochondrial autophagy, a function that has been inhibited by ethanol intoxication. Zeaxanthin dipalmitate protects degenerated photoreceptors in the retina of mice and improves visual acuity in a mouse model of photoreceptor degeneration, and may be used in studies of alcoholic fatty liver disease (AFLD) and retinitis pigmentosa (RP).
Targets(IC50)	Adiponectin Receptor,Autophagy,P2X Receptor
In vitro	Zeaxanthin dipalmitate directly interacted with P2X7 receptor (Kd=81.2 nM) and lipocalin receptor 1 (AdipoR1; Kd=533 nM) in a positive dose-dependent manner. Zeaxanthin dipalmitate (1 μM; 2 h) was able to completely or partially reverse the down-regulation of Atg5, beclin-1, and LC3A/B by ethanol (250 mM) in BRL-3A cells, as well as up-regulation of p62 by ethanol, and partially restored ethanol-suppressed LC3B expression in BRL-3A cells. It also partially restored the viability and ethanol-induced caspase-3/7 activity of ethanol-inhibited BRL-3A cells, and restored the ethanol-induced inhibition of mitochondrial autophagy in BRL-3A cells. [1][2]
In vivo	Zeaxanthin dipalmitate (10 mg/kg orally once daily for two weeks) effectively reduced serum ALT and AST levels due to prolonged ethanol challenge in an AFLD model. In addition, this dose of Zeaxanthin dipalmitate was able to significantly attenuate tissue damage and slow down the extent of hepatocyte apoptosis (as assessed by caspase-3/7 activity) and inflammation (TNF-alpha) due to AFLD. In rd10 mice, a single intravitreal injection of Zeaxanthin dipalmitate (~4 μM) was able to improve their visual behavior and delay the degeneration of retinal photoreceptors. Also, this dose enhanced the light response of photoreceptors, bipolar cells, and retinal ganglion cells, and reduced the expression of genes associated with inflammation, apoptosis, and oxidative stress in rd10 mice. [1][2]

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.9563 mL	4.7815 mL	9.5631 mL
5 mM	0.1913 mL	0.9563 mL	1.9126 mL
10 mM	0.0956 mL	0.4782 mL	0.9563 mL
50 mM	0.0191 mL	0.0956 mL	0.1913 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Gao H, et al. Wolfberry-Derived Zeaxanthin Dipalmitate Attenuates Ethanol-Induced Hepatic Damage. Mol Nutr Food Res. 2019 Jun;63(11):e1801339.
Liu F, et al. Wolfberry-derived zeaxanthin dipalmitate delays retinal degeneration in a mouse model of retinitis pigmentosa through modulating STAT3, CCL2 and MAPK pathways. J Neurochem. 2021 Sep;158(5):1131-1150