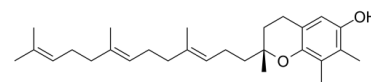


## Data Sheet

<b>Product Name:</b>	γ-Tocotrienol
<b>Cat. No.:</b>	CS-0029988
<b>CAS No.:</b>	14101-61-2
<b>Molecular Formula:</b>	C <sub>28</sub> H <sub>42</sub> O <sub>2</sub>
<b>Molecular Weight:</b>	410.63
<b>Target:</b>	Endogenous Metabolite; NF-κB
<b>Pathway:</b>	Metabolic Enzyme/Protease; NF-κB
<b>Solubility:</b>	DMSO : 100 mg/mL (243.53 mM; Need ultrasonic)



### BIOLOGICAL ACTIVITY:

γ-Tocotrienol is an active form of vitamin E. γ-tocotrienol reverses the multidrug resistance (MDR) of breast cancer cells through the signaling pathway of NF-κB and P-gp. γ-Tocotrienol is also a novel radioprotector agent, can mitigate bone marrow radiation damage during targeted radionuclide treatment<sup>[1][2][3]</sup>. **In Vitro:**γ-Tocotrienol (25 μM; 24 h) effectively inhibits the expression levels of *mdr1* mRNA and P-gp protein, (25 μM and 50 μM; 24 h) suppresses *mdr1* promoter activity and the efflux activity of P-gp as well<sup>[2]</sup>.

γ-Tocotrienol (25 μM and 50 μM; 24 h) reduces the activation of NF-κB signaling pathway and the transcriptional activity of NF-κB<sup>[2]</sup>. γ-tocotrienol (50 μM; 48 h) effectively inhibits the process of nuclear translocation of p65 which was induced by TNFα<sup>[2]</sup>.

**In Vivo:**γ-Tocotrienol's liposomal formulation, GT3-Nano (20 mol% γ-Tocotrienol), (10 mg/kg, 6 mol%; i.v.; single dose, observed for 100 d) is highly effective in mitigating the marrow-suppressive effects of sublethal and lethal TBI in mice<sup>[3]</sup>.

GT3-Nano (50 mg/kg; i.v.; ) can facilitate rapid recovery of hematopoietic components in mice treated with the endoradiotherapeutic agent <sup>153</sup>Sm-EDTMP<sup>[3]</sup>.

### References:

[1]. M A Newaz, et al. Nitric Oxide Synthase Activity in Blood Vessels of Spontaneously Hypertensive Rats: Antioxidant Protection by Gamma-Tocotrienol. *J Physiol Pharmacol.* 2003 Sep;54(3):319-27.

[2]. Ding Y, et al. γ-Tocotrienol reverses multidrug resistance of breast cancer cells through the regulation of the γ-Tocotrienol-NF-κB-P-gp axis. *J Steroid Biochem Mol Biol.* 2021 May;209:105835.

[3]. Lee SG, et al. γ-Tocotrienol-Loaded Liposomes for Radioprotection from Hematopoietic Side Effects Caused by Radiotherapeutic Drugs. *J Nucl Med.* 2021 Apr;62(4):584-590.

### CAIndexNames:

2H-1-Benzopyran-6-ol, 3,4-dihydro-2,7,8-trimethyl-2-[(3E,7E)-4,8,12-trimethyl-3,7,11-tridecatrien-1-yl]-, (2R)-

### SMILES:

OC1=C(C)C(C)=C2C(CC[C@](C)(C/C=C(C)/CC/C=C(C)/CC/C=C(C)/C)(C)O2)=C1

**Caution: Product has not been fully validated for medical applications. For research use only.**

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