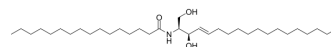


C16-Ceramide

Cat. No.:	HY-100354
CAS No.:	24696-26-2
Molecular Formula:	C ₃₄ H ₆₇ NO ₃
Molecular Weight:	537.9
Target:	Endogenous Metabolite; MDM-2/p53; Apoptosis
Pathway:	Metabolic Enzyme/Protease; Apoptosis
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	DMF : 20 mg/mL (37.18 mM; ultrasonic and warming and heat to 60°C)																	
	Ethanol : 20 mg/mL (37.18 mM; warming and heat to 60°C)																	
	DMSO : < 1 mg/mL (ultrasonic) (insoluble or slightly soluble)																	
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent Concentration</th> <th rowspan="2">Mass</th> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td>1 mM</td> <td>1.8591 mL</td> <td>9.2954 mL</td> <td>18.5908 mL</td> </tr> <tr> <td>5 mM</td> <td>0.3718 mL</td> <td>1.8591 mL</td> <td>3.7182 mL</td> </tr> <tr> <td>10 mM</td> <td>0.1859 mL</td> <td>0.9295 mL</td> <td>1.8591 mL</td> </tr> </tbody> </table>	Solvent Concentration	Mass	1 mg	5 mg	10 mg	1 mM	1.8591 mL	9.2954 mL	18.5908 mL	5 mM	0.3718 mL	1.8591 mL	3.7182 mL	10 mM	0.1859 mL	0.9295 mL	1.8591 mL
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10 mM	0.1859 mL	0.9295 mL	1.8591 mL															
	Please refer to the solubility information to select the appropriate solvent.																	
In Vivo	1. Add each solvent one by one: 10% EtOH >> 90% corn oil Solubility: ≥ 2 mg/mL (3.72 mM); Clear solution																	

BIOLOGICAL ACTIVITY

Description	C16-Ceramide is a natural small molecule activating p53 through the direct and selective binding ^[1] .
IC₅₀ & Target	p53 ^[1] , Apoptosis ^[2]
In Vitro	<p>C16-Ceramide interacts with p53 within its core domain. p53 forms complex with natural C16-Ceramide in the cell^[1]. C16-Ceramide (2.5-50 μM; 0-48 h) strongly decreased HCT116 cell viability in a time- and concentration-dependent manner^[2].</p> <p>C16-Ceramide (12 μM; 48 h) induces apoptosis through Btf (Bcl-2-associated transcription factor) in HCT116 cells^[2]. C16-ceramide (12 μM; 0-6 h) and Btf expression up-regulate p53 and BAX expression. C16-ceramide down-regulates Mdm2 expression via Btf^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay^[2]</p>

Cell Line:	HCT116 cells
Concentration:	2.5, 5, 10, 12, 20, 50 μ M
Incubation Time:	0-48 h
Result:	Strongly decreased cell viability in a time- and concentration-dependent manner.

Western Blot Analysis^[2]

Cell Line:	HCT116 cells
Concentration:	12 μ M
Incubation Time:	1, 3 and 6 h
Result:	Increased PARP cleavage, decreased pro-caspase 3. Decreased the levels of stratifin and stathmin, increased the expression of prohibitin and Btf. RNAi-mediated Btf depletion also partially inhibited BAX expression after the treatment. Significantly decreased luciferase activity and Mdm2 protein expression levels.

CUSTOMER VALIDATION

- ACS Nano. 2023 Jul 13.

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REFERENCES

[1]. Fekry B, et al. C16-ceramide is a natural regulatory ligand of p53 in cellular stress response. Nat Commun. 2018 Oct 8;9(1):4149.

[2]. Rénert AF, et al. The proapoptotic C16-ceramide-dependent pathway requires the death-promoting factor Btf in colon adenocarcinoma cells. J Proteome Res. 2009 Oct;8(10):4810-22.

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

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