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Zuschläge

- Mindermengenzuschlag
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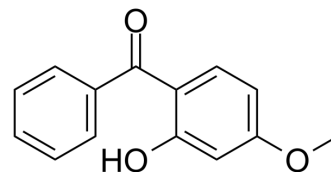
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Oxybenzone

Cat. No.:	HY-A0067
CAS No.:	131-57-7
Molecular Formula:	C ₁₄ H ₁₂ O ₃
Molecular Weight:	228.24
Target:	Apoptosis; Autophagy; RAR/RXR
Pathway:	Apoptosis; Autophagy; Metabolic Enzyme/Protease; Vitamin D Related/Nuclear Receptor
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (438.14 mM; Need ultrasonic) H ₂ O : < 0.1 mg/mL (insoluble)				
	Preparing Stock Solutions	Solvent Concentration Mass	1 mg	5 mg	10 mg
		1 mM	4.3814 mL	21.9068 mL	43.8135 mL
		5 mM	0.8763 mL	4.3814 mL	8.7627 mL
		10 mM	0.4381 mL	2.1907 mL	4.3814 mL
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	1. Add each solvent one by one: PBS Solubility: 5 mg/mL (21.91 mM); Clear solution; Need ultrasonic and warming and heat to 60°C				
	2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (10.95 mM); Clear solution				
	3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (10.95 mM); Clear solution				
	4. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (10.95 mM); Clear solution				

BIOLOGICAL ACTIVITY

Description	Oxybenzone (Benzophenone 3) is a commonly used UV filter in sun tans and skin protectants. Oxybenzone act as endocrine disrupting chemicals (EDCs) and can pass through the placental and blood-brain barriers. Benzophenone-3 impairs autophagy, alters epigenetic status, and disrupts retinoid X receptor signaling in apoptotic neuronal cells ^{[1][2][3]} .
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In Vitro

Oxybenzone (Benzophenone 3) (25 μ M; 24 hours) decreases the relative RXR β and RXR γ protein levels by 61 and 56%, respectively and increases the relative RXR α protein level by 49%^[3].

Oxybenzone (25-100 μ M; 24 hours) induces an increase in caspase-3 levels in primary cultures of mouse neocortical cells at 7 DIV. Oxybenzone-induced apoptosis involves the activation of RXR α signaling and the impairment of RXR β /RXR γ signaling.

Oxybenzone (25 μ M; 24 hours) inhibits global DNA methylation as well as reduced HDAC and HAT activities in mouse embryonic neuronal cells^[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis^[3]

Cell Line:	Mouse neocortical cells at 7 DIV
Concentration:	25 μ M
Incubation Time:	24 hours
Result:	Exposure to Oxybenzone (25 μ M) for 24 h decreased the relative RXR β and RXR γ protein levels by 61 and 56%, respectively. Treatment with Oxybenzone (25 μ M) increased the relative RXR α protein level by 49%.

CUSTOMER VALIDATION

- Chemosphere. 2021, 130670.

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REFERENCES

[1]. Wnuk A, et al. Prenatal exposure to benzophenone-3 (BP-3) induces apoptosis, disrupts estrogen receptor expression and alters the epigenetic status of mouse neurons. J Steroid Biochem Mol Biol. 2018;182:106-118.

[2]. DiNardo JC, et al. Can oxybenzone cause Hirschsprung's disease?. Reprod Toxicol. 2019;86:98-100.

[3]. Wnuk A, et al. Benzophenone-3 Impairs Autophagy, Alters Epigenetic Status, and Disrupts Retinoid X Receptor Signaling in Apoptotic Neuronal Cells. Mol Neurobiol. 2018;55(6):5059-5074.

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

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