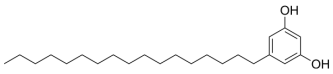
5-Heptadecylresorcinol

Cat. No.:	HY-N2673
CAS No.:	41442-57-3
Molecular Formula:	$C_{23}H_{40}O_2$
Molecular Weight:	348.56
Target:	Sirtuin
Pathway:	Cell Cycle/DNA Damage; Epigenetics
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

5-Heptadecylresorcinol (AR-C17), a phenolic lipid component, is also an orally active mitochondrial protector. 5-Heptadecylresorcinol improves mitochondrial function via sirtuin3 signaling pathway, thus alleviates endothelial cell damage and apoptosis. 5-Heptadecylresorcinol induces sirtuin3-mediated autophagy. 5-Heptadecylresorcinol reduces the atherosclerotic plaques in the aortic root region of mice heart. 5-Heptadecylresorcinol can be used for research of atherosclerosis prevention and obesity[1][2].

IC_{50} & Target

SIRT3

In Vitro

5-Heptadecylresorcinol (0, 0.5, 1, and 2 μM; 24 h) alleviates mitochondrial dysfunction through upregulation of SIRT3 in HUVECs[1].

5-Heptadecylresorcinol alleviates inflammatory conditioned medium (CM) induced adipocyte lipolysis and mitochondrial damage, accompanied by attenuated mitochondrial reactive oxygen species production and mitochondrial membrane depolarization[2].

5-Heptadecylresorcinol (5, 10 and 15 μM; 24 h) significantly prevents CM-induced adipocyte lipolysis by decreasing the release of glycerol in 3T3-L1 adipocytes[2].

5-Heptadecylresorcinol (5, 10 and 15 μM; 24 h) ameliorates mitochondrial dysfunction in adipocytes induced by CM[2].

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

Western Blot Analysis[2]

Cell Line:	3T3-L1 adipocytes
Concentration:	5, 10 and 15 μM
Incubation Time:	24 hours
Result:	Increased the expression of UCP1, COX IV, PGC-1α, DRP1 and MFN2 proteins.

In Vivo

5-Heptadecylresorcinol (30 mg/kg, 150 mg/kg; po daily for 16 weeks) improves the lipid metabolism in HFD-fed $ApoE^{-/-}$ mice[1].

5-Heptadecylresorcinol (30 mg/kg, 150 mg/kg; po daily for 16 weeks) increases the body weight of mouse, and alleviates adipose tissue macrophage infiltration and mitochondrial dysfunction[2].

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

Animal Model:	C57BL/6J mice[1][2]
Dosage:	30 mg/kg, 150 mg/kg
Administration:	PO; daily for 16 weeks
Result:	Lowered serum total cholesterol, triglyceride, VLDL-C, and LDL-C levels[1]. Reduced adipose tissue macrophage infiltration from high-fat diet induced obese C57BL/6J mice[2].

REFERENCES

[1]. Rakshit D, et al. The Pharmacological Activity of Garlic (Allium sativum) in Parkinson's Disease: From Molecular Mechanisms to the Therapeutic Potential. ACS Chem Neurosci. 2023 Mar 15;14(6):1033-1044.

[2]. Yoo DY, et al. Neuroprotective effects of Z-ajoene, an organosulfur compound derived from oil-macerated garlic, in the gerbil hippocampal CA1 region after transient forebrain ischemia. Food Chem Toxicol. 2014 Oct;72:1-7.

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