Hexylresorcinol

Cat. No.: HY-B0986

CAS No.: 136-77-6

Molecular Formula: $C_{12}H_{18}O_2$

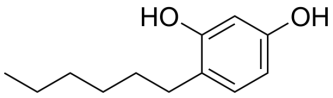
Molecular Weight: 194.27

Target: Parasite; Bacterial; Apoptosis; Glucosidase; Endogenous Metabolite

Pathway: Anti-infection; Apoptosis; Metabolic Enzyme/Protease

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 (514.75 mM; Need ultrasonic)
Ethanol : 100 mg/mL (514.75 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	5.1475 mL	25.7374 mL	51.4748 mL
5 mM	1.0295 mL	5.1475 mL	10.2950 mL
10 mM	0.5147 mL	2.5737 mL	5.1475 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (12.87 mM); Clear solution
2. Add each solvent one by one: 10% EtOH >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (12.87 mM); Clear solution
3. Add each solvent one by one: 10% EtOH >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (12.87 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (10.71 mM); Clear solution
5. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (10.71 mM); Clear solution
6. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (10.71 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Hexylresorcinol (4-Hexylresorcinol) is a natural compound found in plants with antimicrobial, anthelmintic, antiseptic and antitumor activities. Hexylresorcinol can induce apoptosis in squamous carcinoma cells. Hexylresorcinol is a reversible and noncompetitive inhibitor of α-glucosidase. Hexylresorcinol has protective effects against oxidative DNA damage[1][2][3][4][5].
IC_{50} & Target	Human Endogenous Metabolite

In Vitro

Hexylresorcinol potently inhibits Gram positive bacteria, with MICs of 20-50 mg/L for several Gram positive bacteria. Gram negative bacteria, yeasts and fungi are less sensitive to it[1].
Hexylresorcinol inhibits oxidative DNA damage in human lymphocytes by increasing levels of glutathione and modulation of antioxidant enzymes (GPX, GR and GST)[2].
Hexylresorcinol (1-10 μg/mL; 24-72 hours) suppresses squamous carcinoma cell line SCC-9 proliferation[3].
Hexylresorcinol has strong antitumor effects by inhibiting calcium channel oscillation and inducing apoptosis[3].
Hexylresorcinol upregulates TGF-β/SMAD/VEGF signaling in endothelial cells and induces vascular regeneration and remodeling for wound healing[5].

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

Cell Proliferation Assay[3]

Cell Line:	SCC-9 cells
Concentration:	1 μg/mL, 5 μg/mL, 10 μg/mL
Incubation Time:	24 hours, 48 hours, 72 hours
Result:	Inhibited SCC-9 cells proliferation.

Apoptosis Analysis[3]

Cell Line:	SCC-9 cells
Concentration:	10 μg/mL
Incubation Time:	24 hours
Result:	Induced morphological and biochemical changes in SCC-9 cells.

In Vivo

Hexylresorcinol (10 mg/kg; i.p.; daily; for 16 days) inhibits tumor cell proliferation in mouse tumor xenografts and concomitant application of calcium channel blocker partly reverses the antitumor effect of Hexylresorcinol[3].

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

Animal Model:	Male nude mice (BALB/cAnNCrj-nu/nu), with SCC-9 cells xenograft[3]
Dosage:	10 mg/kg
Administration:	Intraperitoneal injection, daily, for 16 days
Result:	Reduced tumor formation in vivo.

REFERENCES

[1]. Y. A. Nikolaev, et al. The use of 4-Hexylresorcinol as antibiotic adjuvant. PLoS One. 2020; 15(9): e0239147.

[2]. Seong-Gon Kim, et al. 4-hexylresorcinol exerts antitumor effects via suppression of calcium oscillation and its antitumor effects are inhibited by calcium channel blockers. Oncol Rep. 2013 May;29(5):1835-40.

[3]. Shuang Song, et al. Inhibitory potential of 4-hexylresorcinol against α-glucosidase and non-enzymatic glycation: Activity and mechanism. J Biosci Bioeng. 2020 Nov 12;S1389-1723(20)30400-X.

[4]. Gow-Chin Yen, et al. Effects of resveratrol and 4-hexylresorcinol on hydrogen peroxide-induced oxidative DNA damage in human lymphocyte. Free Radic Res. 2003 May;37(5):509-14.

[5]. Min-Keun Kim, et al. 4-Hexylresorcinol induced angiogenesis potential in human endothelial cells. Maxillofac Plast Reconstr Surg. 2020 Dec; 42(1): 23.

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