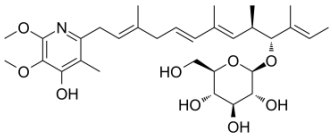
Glucopiericidin A

Cat. No.:	HY-133541
CAS No.:	108073-65-0
Molecular Formula:	$C_{31}H_{47}NO_9$
Molecular Weight:	577.71
Target:	GLUT; ADC Cytotoxin; Apoptosis
Pathway:	Membrane Transporter/Ion Channel; Antibody-drug Conjugate/ADC Related; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Glucopiericidin A is a natural piericidin compound obtained from a marine-derived Streptomyces strain. Glucopiericidin A serves as a glucose transporter (GLUT) chemical probe and suppresses glycolysis. Glucopiericidin A inhibits ATP-dependent filopodia protrusion with Piericidin A (PA; HY-114936) and has no effect alone. Glucopiericidin A induces cell apoptosis through reducing the reactive oxygen species (ROS) level by increasing PRDX1 and exhibits potent antitumor efficacy in ACHN mice xenografts[1][2].

In Vitro

Glucopiericidin A has cytotoxicities against three renal carcinoma cell lines, ACHN (IC_{50}=0.21 μM), OS-RC-2 (IC_{50}>100 μM), and 786-O (IC_{50}>100 μM), as well as a normal renal cell line, HK-2 (IC_{50}>100 μM)[2].
Glucopiericidin A (25, 50 nM; 24 h) causes the upregulation of PRDX1 in ACHN cells[2].
Glucopiericidin A (25, 50 nM; 24 h) not only raises the expression of mRNA and protein of PRDX1 but also forces it into the nucleus[2].
Glucopiericidin A (25, 50 nM; 24 h) reduces ROS in normal ACHN cells[2].
Neither Glucopiericidin A (GPA) nor Piericidin A (PA) alone, at concentrations up to 500 nM and 2.3 mM, respectively, shows inhibitory activity. When combined, much lower concentrations of GPA (17 nM) and PA (0.68 nM) produces inhibition of filopodia protrusion[1].

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

Western Blot Analysis[2]

Cell Line:	ACHN cells
Concentration:	25 and 50 nM
Incubation Time:	24 hours
Result:	Caused the upregulation of PRDX1 in ACHN cells.

RT-PCR[2]

Cell Line:	ACHN cells
Concentration:	25 and 50 nM
Incubation Time:	24 hours

Result:	Not only raised the expression of mRNA and protein of PRDX1 but also forced it into the nucleus

In Vivo

Glucopiericidin A (0.8 mg/kg/day; IP; for three weeks) significantly reduces the final tumor weight of the mice[2].

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

Animal Model:	Nude mice bearing ACHN tumor xenografts[2]
Dosage:	0.8 mg/kg
Administration:	IP; daily; for three weeks
Result:	Significantly reduced the final tumor weight of the mice. Increased the mRNA and protein expression of PRDX1 in tumor tissues.

REFERENCES

[1]. Mitsuhiro Kitagawa, et al. Metabolomic identification of the target of the filopodia protrusion inhibitor glucopiericidin A. Chem Biol. 2010 Sep 24;17(9):989-98.

[2]. Xuefeng Zhou, et al. Exploring the Natural Piericidins as Anti-Renal Cell Carcinoma Agents Targeting Peroxiredoxin 1. J Med Chem. 2019 Aug 8;62(15):7058-7069.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA