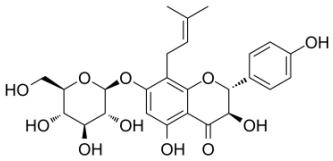
Phellamurin

Cat. No.:	HY-N3085
CAS No.:	52589-11-4
Molecular Formula:	$C_{26}H_{30}O_{11}$
Molecular Weight:	518.51
Target:	P-glycoprotein; Apoptosis
Pathway:	Membrane Transporter/Ion Channel; Apoptosis
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



BIOLOGICAL ACTIVITY

Description

Phellamurin is a plant flavonone glycoside from the leaves of Phellodendron amurense and inhibits intestinal P-glycoprotein . Phellamurin also inhibits egg laying by Papilio protenor. Phellamurin induces cells apoptosis and has anti-tumor activity[1][2][3].

In Vitro

Phellamurin (0-10 μg/mL; 48 hours; U2OS and Saos-2 cells) treatment leads to a repression of cell viability in U2OS and Saos-2 cells in a dose-dependent manner[1].

Phellamurin (0-10 μg/mL; 48 hours; U2OS and Saos-2 cells) treatment concentration-dependently promots the apoptosis of U2OS and Saos-2 cells[1].

Phellamurin (0-10 μg/mL; 48 hours; U2OS and Saos-2 cells) treatment declines the ratios of p-PI3K/PI3K, p-AKT/AKT, and p-mTOR/mTOR in U2OS and Saos-2 cells[1].

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

Cell Viability Assay[1]

Cell Line:	U2OS and Saos-2 cells
Concentration:	0 μg/mL, 2.5 μg/mL, 5 μg/mL, and 10 μg/mL
Incubation Time:	48 hours
Result:	Suppressed the viability of U2OS and Saos-2 cells in a concentration-dependent manner.

Apoptosis Analysis[1]

Cell Line:	U2OS and Saos-2 cells
Concentration:	0 μg/mL, 2.5 μg/mL, 5 μg/mL, and 10 μg/mL
Incubation Time:	48 hours
Result:	Induced apoptosis of U2OS and Saos-2 cells in a concentration-dependent manner.

Western Blot Analysis[1]

Cell Line:	U2OS and Saos-2 cells
Concentration:	0 μg/mL and 10 μg/mL
Incubation Time:	48 hours
Result:	Repressed the PI3K/AKT/mTOR pathway in U2OS and Saos-2 cells.

In Vivo

Phellamurin (50 mg/kg/day; intraperitoneal injection; daily; for 21 days; female BALB/c nude mice) treatment represses osteosarcoma tumor growth in vivo. The ratios of p-PI3K/PI3K, p-AKT/AKT, and p-mTOR/mTOR are decreased in xenograft in Phellamurin-treated mice[1].

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

Animal Model:	Athymic female BALB/c nude mice (6 weeks old) injected with U2OS cells[1]
Dosage:	50 mg/kg/day
Administration:	Intraperitoneal injection; daily; for 21 days
Result:	Repressed osteosarcoma tumor growth in vivo.

REFERENCES

[1]. Hongzhi Zhang, et al. Anti-tumor Efficacy of Phellamurin in Osteosarcoma Cells: Involvement of the PI3K/AKT/mTOR Pathway. Eur J Pharmacol. 2019 Sep 5;858:172477.

[2]. Hung-Yi Chen, et al. Marked Decrease of Cyclosporin Absorption Caused by Phellamurin in Rats. Planta Med. 2002 Feb;68(2):138-41.

[3]. Keiichi Honda, et al. Synergistic or Antagonistic Modulation of Oviposition Response of Two Swallowtail Butterflies, Papilio Maackii and P. Protenor, to Phellodendron Amurense by Its Constitutive Prenylated Flavonoid, Phellamurin. J Chem Ecol. 2011 Jun;37(6):575-81.

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