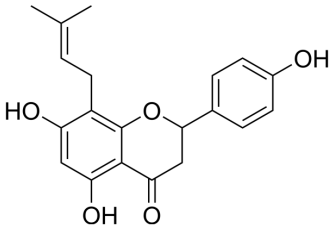
(±)-8-Prenylnaringenin

Cat. No.:	HY-126109
CAS No.:	68682-02-0
Molecular Formula:	$C_{20}H_{20}O_5$
Molecular Weight:	340.37
Target:	Estrogen Receptor/ERR; Apoptosis
Pathway:	Vitamin D Related/Nuclear Receptor; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	(±)-8-Prenylnaringenin, a natural prenylated flavonoid, is a potent phytoestrogen. (±)-8-Prenylnaringenin is an orally active selective estrogen receptor modulator (SERM) (Estrogen Receptor/ERR) that inhibits ERα and ERβ with IC_{50}s of 57 nM and 68 nM, respectively. (±)-8-Prenylnaringenin has anticancer effects, and can be used for osteoporosis research[1][2].

IC_{50} & Target	ERα	ERβ
	57 nM (IC_{50})	68 nM (IC_{50})

In Vitro

In rabbit bone marrow cells, (±)-8-Prenylnaringenin inhibits the formation and induces apoptosis of Osteoclasts to a greater extent than naringenin. (±)-8-Prenylnaringenin is applied to the MC3T3-E1 osteoblast cell line, where it enhances differentiation and maturation, and also inhibits the differentiation of the RAW264.7 osteoclast cell line. (±)-8-Prenylnaringenin inhibits the expression of receptor activator of nuclear factor-κB ligand (RANKL), and leads to increased expression of osteoprotegerin[1].

A significant, dose-dependent inhibition of proliferation is observed in PC-3 human prostate cancer cells and UO.31 human renal carcinoma cells after exposure to (±)-8-Prenylnaringenin. In MCF-10A, a human breast cancer cell line, (±)-8-Prenylnaringenin modulats the metabolic pathways of estradiol conversion into cancer-promoting metabolites, and thereby inhibits malignant transformation[1].

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

In Vivo

(±)-8-Prenylnaringenin (50 mg/kg; orally gavage; once daily; for 12 days) ameliorates impaired glucose homeostasis and islet dysfunction induced by STZ treatment. (±)-8-Prenylnaringenin increases the protein expression levels of ERα in the pancreas and liver and of fibroblast growth factor 21 in the liver[3].

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Animal Model:	Male C57BL/6J mice (Seven-week-old) injected with Streptozotocin (STZ)[3]
Dosage:	50 mg/kg
Administration:	Orally gavage; once daily; for 12 days
Result:	Ameliorated impaired glucose homeostasis and islet dysfunction induced by STZ treatment.

REFERENCES

[1]. Kateřina Štulíková, et al. Therapeutic Perspectives of 8-Prenylnaringenin, a Potent Phytoestrogen from Hops. Molecules. 2018 Mar 15;23(3):660.

[2]. Frederik Roelens, et al. Subtle side-chain modifications of the hop phytoestrogen 8-prenylnaringenin result in distinct agonist/antagonist activity profiles for estrogen receptors alpha and beta. J Med Chem. 2006 Dec 14;49(25):7357-65.

[3]. Song Park, et al. Naringenin and Phytoestrogen 8-Prenylnaringenin Protect against Islet Dysfunction and Inhibit Apoptotic Signaling in Insulin-Deficient Diabetic Mice. Molecules. 2022 Jun 30;27(13):4227.

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