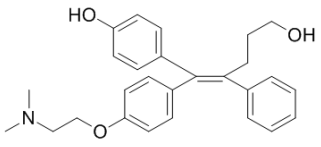
GSK5182

Cat. No.:	HY-111226
CAS No.:	877387-37-6
Molecular Formula:	$C_{27}H_{31}NO_3$
Molecular Weight:	417.54
Target:	Estrogen Receptor/ERR; Reactive Oxygen Species
Pathway:	Others; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
Storage:	Please store the product under the recommended conditions in the COA.



BIOLOGICAL ACTIVITY

Description

GSK5182 is a highly selective inverse agonist of **estrogen-related receptor γ (ERRγ)** with an **IC_{50}** of 79 nM and does not interact with other nuclear receptors, including ERRα or ERα. GSK5182 also induces **Reactive Oxyen Species (ROS)** generation in hepatocellular carcinoma (HCC)[1][2][3].

IC_{50} & Target

ERRγ
79 nM (IC_{50})

In Vitro

GSK5182 (0-20 μM; 0-hours; PLC/PRF/5 cells) treatment leads to a significant and dose-dependent reduction in the number of proliferating PLC/PRF/5 cells[1].
GSK5182 (0-20 μM; 24 hours; PLC/PRF/5 cells) treatment also causes a dose-dependent increase in the expression of p21 and p27 while at the same time reducing the level of phosphorylated retinoblastoma protein (p-pRb)[1].
GSK5182 (10-20 μM; PLC/PRF/5 cells) treatment induces cell cycle arrest at G1 phase, which in turn induces a corresponding dose-dependent reduction in the percentage of cells in S phase[1].

Cell Proliferation Assay[1]

Cell Line:	The human hepatoma cell line PLC/PRF/5
Concentration:	0 μM, 10 μM, 20 μM
Incubation Time:	0 hour, 24 hours, 48 hours, 72 hours
Result:	Led to a significant and dose-dependent reduction in the number of proliferating PLC/PRF/5 cells.

Western Blot Analysis[1]

Cell Line:	The human hepatoma cell line PLC/PRF/5
Concentration:	0 μM, 10 μM, 20 μM
Incubation Time:	24 hours
Result:	Caused a dose-dependent increase in the expression of p21 and p27 while at the same time reducing the level of p-pRb.

Cell Cycle Analysis[1]	
Cell Line:	The human hepatoma cell line PLC/PRF/5
Concentration:	10 μM, 20 μM
Incubation Time:	
Result:	Induced cell cycle arrest.

In Vivo

GSK5182 (40 mg/kg; intraperitoneal injection; every day; 25 or 30 days; db/db mice, diet-induced obesity mice) specifically inhibits the transcriptional activity of ERRγ, and suppresses hepatic glucose production through inhibition of hepatic gluconeogenesis. GSK5182 elicits anti-diabetic effects in mouse models via negative regulation of the hepatic gluconeogenesis program. GSK5182 normalizes hyperglycemia mainly through inhibition of hepatic glucose production[3].

Animal Model:	db/db mice (male, 7-12-week-old), diet-induced obesity (DIO) mice[3]
Dosage:	40 mg/kg
Administration:	Intraperitoneal injection; every day; 30 days for db/db mice, 25 days for DIO mice
Result:	Inhibited the transcriptional activity of ERRγ, suppressed hepatic glucose production through inhibition of hepatic gluconeogenesis.

REFERENCES

[1]. Kim JH, et al. Estrogen-related receptor γ is upregulated in liver cancer and its inhibition suppresses livercancer cell proliferation via induction of p21 and p27. Exp Mol Med. 2016 Mar 4;48:e213.

[2]. Misra J, et al. ERRγ: a Junior Orphan with a Senior Role in Metabolism. Trends Endocrinol Metab. 2017 Apr;28(4):261-272.

[3]. Kim DK, et al. Inverse agonist of nuclear receptor ERRγ mediates antidiabetic effect through inhibition of hepatic gluconeogenesis. Diabetes. 2013 Sep;62(9):3093-102.

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