(Z)-Guggulsterone

Cat. No.: HY-110066

CAS No.: 39025-23-5

Molecular Formula: $C_{21}H_{28}O_2$

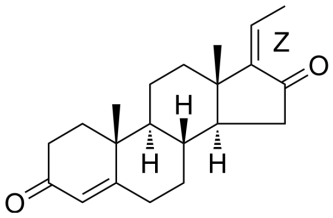
Molecular Weight: 312.45

Target: Apoptosis; VEGFR; Akt; Angiotensin-converting Enzyme (ACE); SARS-CoV; FXR

Pathway: Apoptosis; Protein Tyrosine Kinase/RTK; PI3K/Akt/mTOR; Metabolic Enzyme/Protease; Anti-infection

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 10 mg/mL (32.01 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.2005 mL	16.0026 mL	32.0051 mL
5 mM	0.6401 mL	3.2005 mL	6.4010 mL
10 mM	0.3201 mL	1.6003 mL	3.2005 mL

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

In Vivo

1. Add each solvent one by one: 50% PEG300 >> 50% saline
   Solubility: 10 mg/mL (32.01 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1 mg/mL (3.20 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

(Z)-Guggulsterone, a constituent of Indian Ayurvedic medicinal plant Commiphora mukul, inhibits the growth of human prostate cancer cells by causing apoptosis. (Z)-Guggulsterone inhibits angiogenesis by suppressing the VEGF–VEGF-R2–Akt signaling axis[1]. (Z)-Guggulsterone is also a potent FXR antagonist. (Z)-Guggulsterone reduces ACE2 expression and SARS-CoV-2 infection[2].

IC_{50} & Target

VEGF-R2

In Vitro

(Z)-Guggulsterone (10, 20 μM; 24 or 48 hours) causes a decrease in the level of VEGF-R2 protein in HUVEC[1].
(Z)-Guggulsterone (10 μM; 24 h) reduces ACE2 and SHP levels in primary airway and intestinal organoids, and reduces SARS-

CoV-2 infection in multiple cell types via FXR-mediated ACE2 regulation[2].

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

Western Blot Analysis[1]

Cell Line:	Vascular endothelial growth factor (VEGF)
Concentration:	10, 20 μM
Incubation Time:	24 or 48 hours
Result:	Caused a decrease in the level of VEGF-R2 protein in HUVEC.

In Vivo

Z-guggulsterone (oral; 1 mg; 5 times/week) results in a statistically significantly decrease in tumor volume and wet tumor weight[1].

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

Animal Model:	Male nude mice (5–6 weeks old) s.c. implanted with DU145 cell-containing Matrigel plugs
Dosage:	1 mg
Administration:	Oral; 5 times/week
Result:	Resulted in a statistically significantly decrease in tumor volume and wet tumor weight.

CUSTOMER VALIDATION

- Research (Wash D C). 2022 Nov 2;2022:9784081.
- Preprints. 2020, 2020090120.

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REFERENCES

[1]. Brevini T, et al. FXR inhibition may protect from SARS-CoV-2 infection by reducing ACE2. Nature. 2022 Dec 5.

[2]. Xiao D, et al. z-Guggulsterone, a constituent of Ayurvedic medicinal plant Commiphora mukul, inhibits angiogenesis in vitro and in vivo. Mol Cancer Ther. 2008 Jan;7(1):171-80.

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