

Certificate of Analysis

Product Name: Z-Guggulsterone

Catalog No.: 3570

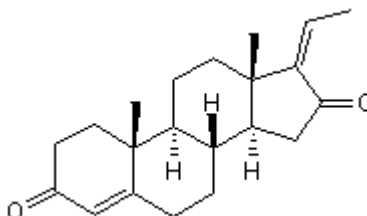
Batch No.: 2

CAS Number: 39025-23-5

IUPAC Name: (Z)-Pregna-4,17(20)-diene-3,16-dione

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₁H₂₈O₂
Batch Molecular Weight: 312.45
Physical Appearance: Off-white solid
Solubility: DMSO to 20 mM with gentle warming
 ethanol to 10 mM with gentle warming
Storage: Store at RT
Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 98% purity
¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	80.73	9.03	
Found	80.68	9.12	

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

Broad spectrum steroid receptor ligand; mineralocorticoid, progesterone and glucocorticoid receptor antagonist (K_i values are 37, 224 and 252 nM respectively) and weak androgen receptor agonist ($K_i = 315$ nM). Induces apoptosis in prostate cancer cells and inhibits angiogenesis via suppression of the VEGF-VEGFR2-Akt signaling pathway. Exhibits antilipidemic activity via antagonism of the farnesoid X receptor (FXR) and displays antiseptic, antirheumatic and anti-inflammatory activity *in vivo*. More active isomer of guggulsterone (Cat. No. 2013).

Physical and Chemical Properties:

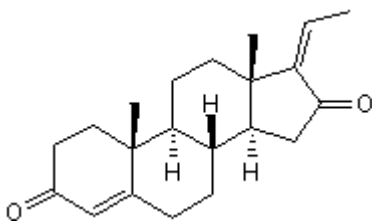
Batch Molecular Formula: $C_{21}H_{28}O_2$

Batch Molecular Weight: 312.45

Physical Appearance: Off-white solid

Minimum Purity: >98%

Batch Molecular Structure:



References:

Meyer et al (2005) Is antagonism of E/Z-guggulsterone at the farnesoid X receptor mediated by a noncanonical binding site? A molecular modeling study. *J.Med.Chem.* **48** 6955.

Singh et al (2007) Guggulsterone-induced apoptosis in human prostate cancer cells is caused by reactive oxygen intermediate-dependent activation of c-Jun NH₂-terminal kinase. *Cancer Res.* **67** 7439. PMID: 17671214.

Xiao and Singh (2008) z-Guggulsterone, a constituent of Ayurvedic medicinal plant *Commiphora mukul*, inhibits angiogenesis *in vitro* and *in vivo*. *Mol.Cancer Ther.* **7** 171. PMID: 18202020.

Storage: Store at RT

Solubility & Usage Info:

DMSO to 20 mM with gentle warming
ethanol to 10 mM with gentle warming

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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