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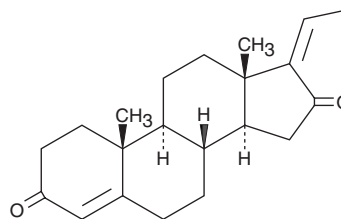
PRODUCT INFORMATION



(Z)-Guggulsterone

Item No. 71800

CAS Registry No.: 39025-23-5
Formal Name: pregna-4, 17Z(20)-diene-3,16-dione
MF: C₂₁H₂₈O₂
FW: 312.5
Purity: ≥95%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that (Z)-guggulsterone be stored as supplied at -20°C. It should be stable for at least two years.

(Z)-Guggulsterone is supplied as a crystalline solid. A stock solution may be made by dissolving the (Z)-guggulsterone in the solvent of choice. (Z)-Guggulsterone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of (Z)-guggulsterone in these solvents is approximately 1, 0.25, and 10 mg/ml, respectively.

(Z)-Guggulsterone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (Z)-guggulsterone should first be dissolved in DMF and then diluted with the aqueous buffer of choice. (Z)-Guggulsterone has a solubility of approximately 0.2 mg/ml in a 1:4 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Bile acids are essential for solubilization and transport of dietary lipids, are the major products of cholesterol catabolism, and are physiological ligands for farnesoid X receptor (FXR), a nuclear receptor that regulates genes involved in lipid metabolism.¹ They are also inherently cytotoxic, as physiological imbalance contributes to increased oxidative stress.^{2,3} Bile acid-controlled signaling pathways are promising novel targets to treat such metabolic diseases as obesity, type II diabetes, hyperlipidemia, and atherosclerosis. Guggulsterone, derived from resin of the guggul tree, is a competitive antagonist of FXR both *in vitro* and *in vivo*.⁴ The *trans* stereoisomer of guggulsterone, (Z)-guggulsterone, decreases chenodeoxycholic acid (CDCA)-induced FXR activation with an IC₅₀ value of 17 μM.^{5,6} By inhibiting CDCA-induced transactivation of FXR, guggulsterone lowers low-density lipoprotein cholesterol and triglyceride levels in rodents fed a high cholesterol diet.⁴ While both *cis* and *trans* stereoisomers have been shown to directly decrease hepatic cholesterol, the Z isomer is the most studied. (Z)-Guggulsterone demonstrates antitumor-promoting effects inhibiting both constitutive and interleukin-6-induced STAT3 activation in human multiple myeloma cells and suppressing the VEGF-VEGF/R2-Akt signaling axis in DU145 human prostate cancer cells.^{7,8}

References

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WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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