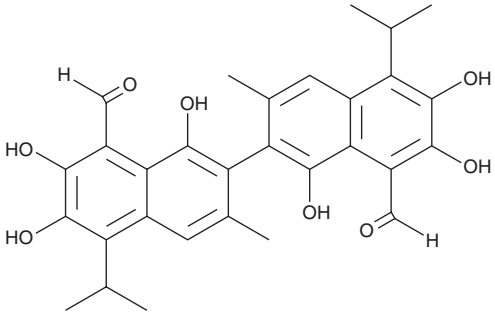
PRODUCT INFORMATION

Gossypol

Item No. 14482

CAS Registry No.:	303-45-7
Formal Name:	1,1',6,6',7,7'-hexahydroxy-3,3'-dimethyl-5,5'-*bis*(1-methylethyl)-[2,2'-binaphthalene]-8,8'-dicarboxaldehyde
Synonyms:	BL 193, (±)-Gossypol, NSC 56817, NSC 624336, Pogosin
MF:	$C_{30}H_{30}O_8$
FW:	518.6
Purity:	≥85%
UV/Vis.:	λ_{max}: 236, 290, 372 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Gossypol is supplied as a crystalline solid. A stock solution may be made by dissolving the gossypol in the solvent of choice, which should be purged with an inert gas. Gossypol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of gossypol in these solvents is approximately 14.3, 16.7, and 20 mg/ml, respectively.

Gossypol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, gossypol should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Gossypol has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Gossypol is a racemic mixture of natural polyphenols isolated from parts of the cotton plant (genus *Gossypium*). It causes infertility in a variety of cotton pests and spermatogenesis arrest in humans.[1] Gossypol also has antimalarial properties, preventing the growth of *P. falciparum* at low micromolar concentrations.[2] It inhibits aldose reductase (K_i = 0.5 µM).[3] Gossypol also acts as an anticancer agent, inhibiting cell growth in various cancer cell lines, in part by blocking the anti-apoptotic functions of Bcl-2 and Bcl-xL, again at low micromolar concentrations.[4]

References

1. Coutinho, E.M. Gossypol: A contraceptive for men. *Contraception* **65(4)**, 259-263 (2002).
2. Royer, R.E., Deck, L.M., Campos, N.M., *et al.* Biologically active derivatives of gossypol: Synthesis and antimalarial activities of peri-acylated gossylic nitriles. *J. Med. Chem.* **29(9)**, 1799-1801 (1986).
3. Deck, L.M., Vander Jagt, D.L., and Royer, R.E. Gossypol and derivatives: A new class of aldose reductase inhibitors. *J. Med. Chem.* **34(11)**, 3301-3305 (1991).
4. Yan, F., Cao, X.X., Jiang, H.X., *et al.* A novel water-soluble gossypol derivative increases chemotherapeutic sensitivity and promotes growth inhibition in colon cancer. *J. Med. Chem.* **53(15)**, 5502-5510 (2010).

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