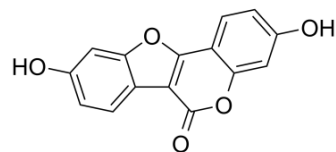


Coumestrol

Cat. No.:	HY-N2335		
CAS No.:	479-13-0		
Molecular Formula:	C ₁₅ H ₈ O ₅		
Molecular Weight:	268.22		
Target:	Estrogen Receptor/ERR		
Pathway:	Others		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



BIOLOGICAL ACTIVITY

Description	Coumestrol, a phytoestrogen present in soybean products, exhibits activities against cancers, neurological disorders, and autoimmune diseases. It suppresses proliferation of ES2 cells with an IC ₅₀ of 50 μM.
IC₅₀ & Target	IC50: 50 μM ^[1]
In Vitro	<p>Coumestrol exerts chemotherapeutic effects via PI3K and ERK1/2 MAPK pathways. Coumestrol inhibits viability and invasion, and induces apoptosis of ES2 (clear cell-/serous carcinoma origin) cells. In addition, immunoreactive PCNA and ERBB2, markers of proliferation of ovarian carcinoma, are attenuated in their expression in coumestrol-induced death of ES2 cells. Phosphorylation of AKT, p70S6K, ERK1/2, JNK1/2 and p90RSK is inactivated by coumestrol treatment in a dose- and time-dependent manner^[1]. Coumestrol inhibits proliferation and induces apoptosis in MCF-7 cells, which is prevented by copper chelator neocuproine and ROS scavengers. Coumestrol treatment induces ROS generation coupled to DNA fragmentation, up-regulation of p53/p21, cell cycle arrest at G1/S phase, mitochondrial membrane depolarization and caspases 9/3 activation^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

PROTOCOL

Cell Assay ^{[1][2]}	<p>To determine dose-dependent effects of coumestrol, ES2 cells are treated with different concentrations (0, 1, 10, 20, 50 or 100 μM) of coumestrol^[1]. Coumestrol is dissolved in DMSO to prepare a 3 mM stock. Breast cancer MCF-7 cells are treated with increasing concentrations of coumestrol for 24, 48 and 72 h. Then, 20 μL of MTT (5 mg/mL) is added each well and re-incubated for additional 3 h. Formazan blue crystals formed are dissolved in 100 μL of DMSO. Absorbance is read at 570 nm using ELISA plate reader^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
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CUSTOMER VALIDATION

- Pharmacol Res. 2019 Sep;147:104366.

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- Food Chem Toxicol. 2019 Nov.

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REFERENCES

- [1]. Lim W, et al. Coumestrol suppresses proliferation of ES2 human epithelial ovarian cancer cells. J Endocrinol. 2016 Mar;228(3):149-60.
- [2]. Zafar A, et al. Cytotoxic activity of soy phytoestrogen coumestrol against human breast cancer MCF-7 cells: Insights into the molecular mechanism. Food Chem Toxicol. 2017 Jan;99:149-161.
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Caution: Product has not been fully validated for medical applications. For research use only.

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