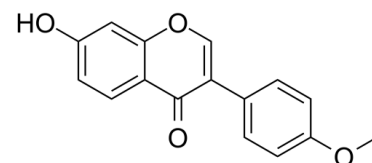


Data Sheet

Product Name:	Formononetin
Cat. No.:	CS-3081
CAS No.:	485-72-3
Molecular Formula:	C ₁₆ H ₁₂ O ₄
Molecular Weight:	268.26
Target:	Apoptosis; FGFR
Pathway:	Apoptosis; Protein Tyrosine Kinase/RTK
Solubility:	DMSO : ≥ 35 mg/mL (130.47 mM); H ₂ O : < 0.1 mg/mL (insoluble)



BIOLOGICAL ACTIVITY:

Formononetin (Formononetol; Flavosil) is a bioactive component extracted from the red clover; inhibits the proliferation of DU-145/PC-3 cells in a dose-dependent manner. IC₅₀ value: Target: anti-cancer in vitro: formononetin inhibited the proliferation of DU-145 cells in a dose-dependent manner. DU-145 cells treated with different concentrations of formononetin displayed obvious morphological changes of apoptosis under fluorescence microscopy. In addition, formononetin increased the proportion of early apoptotic DU-145 cells, down-regulated the protein levels of Bcl-2 and up-regulated those of RASD1 and Bax [1]. Formononetin significantly inhibited the cell growth of PC-3 in a dose-dependent manner, but no such effect was observed in RWPE1 cells. Formononetin treatment contributed to the reduced Bcl-2 protein level and the elevated Bax expression in PC-3 cells, thereby resulting in the increasing Bax/Bcl-2 ratios. Furthermore, the phosphorylated level of p38 in PC-3 cells was activated through the FN treatment, whereas the endogenous Akt phosphorylation was blocked [2]. Compared with the control, formononetin inhibited the proliferation of MCF-7 cells and effectively induced cell cycle arrest. The levels of p-IGF-1 R, p-Akt, cyclin D1 protein expression, and cyclin D1 mRNA expression were also downregulated [3]. in vivo: formononetin also prevented the tumor growth of human breast cancer cells in nude mouse xenografts [3].

References:

- [1]. Liu XJ, et al. Up-regulating of RASD1 and apoptosis of DU-145 human prostate cancer cells induced by formononetin in vitro. *Asian Pac J Cancer Prev*. 2014;15(6):2835-9.
- [2]. Zhang X, et al. Formononetin induces apoptosis in PC-3 prostate cancer cells through enhancing the Bax/Bcl-2 ratios and regulating the p38/Akt pathway. *Nutr Cancer*. 2014;66(4):656-61.
- [3]. Chen J, et al. Formononetin induces cell cycle arrest of human breast cancer cells via IGF1/PI3K/Akt pathways in vitro and in vivo. *Horm Metab Res*. 2011 Sep;43(10):681-6.

CAIndexNames:

4H-1-Benzopyran-4-one, 7-hydroxy-3-(4-methoxyphenyl)-

SMILES:

O=C1C(C2=CC=C(OC)C=C2)=COC3=CC(O)=CC=C13

Caution: Product has not been fully validated for medical applications. For research use only.

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