

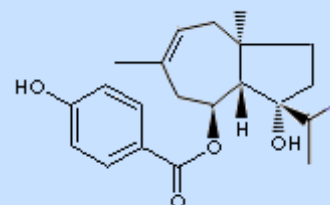
FERUTININ

SYNONYMS

Ferutinine; 4-Oxy-6-(4-oxybenzoyloxy)dauc-8,9-en; Jaeschkeanadiol p-hydroxybenzoate; 4-Hydroxy benzoic acid (3R,3aS,4S,8aR)-1,2,3,3a,4,5,8,8a-octahydro-3-hydroxy-6,8a-dimethyl-3-(1-methylethyl)-4-azulenyl ester; ((3R,3aS,4S,8aR)-3-hydroxy-6,8a-dimethyl-3-propan-2-yl-1,2,3a,4,5,8-hexahydroazulen-4-yl) 4-hydroxybenzoate;

PRODUCT IDENTIFICATION

CAS RN	41743-44-6; 69500-35-2
EINECS RN	
FORMULA	C ₂₂ H ₃₀ O ₄
MOL WEIGHT	358.47



PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	white powder
MELTING POINT	
BOILING POINT	
DENSITY	
SOLUBILITY IN WATER	Insoluble
pH	
VAPOR DENSITY	
REFRACTIVE INDEX	
FLASH POINT	

GENERAL DESCRIPTION

Phytoestrogens are a group of chemicals found in plants that can act like the hormone estrogen. Estrogen is a hormone necessary for childbearing and is involved with bone and heart health in women. However, higher exposure to estrogens over a lifetime is linked with increased breast cancer risk. The major phytoestrogen groups are isoflavones, flavones, coumestans and lignans. The former three are flavonoids. Isoflavones are found in high concentration in soy bean and soy bean products (eg. tofu) where as lignans are mainly found in flax seed. Some studies indicate that phytoestrogens have health benefits including potential reduction in breast cancer, prostate cancer and cardiovascular disease risks, possible protection against osteoporosis (bone loss) and menopausal symptoms. Besides, both flavonoid and lignan phytoestrogens have antioxidant activity. (source: <http://www.dietaryfiberfood.com/>)

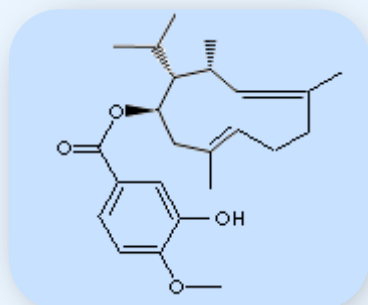
Some naturally occurring compounds present in plants have been found to possess oestrogenic properties, these chemicals have been termed 'phytoestrogens'. The majority of phytoestrogens belong to a large group of substituted phenolic compounds known as flavonoids. Flavonoids are present in many plants and it has been estimated that they can constitute up to 7% of the dry weight of some plants (Kuhnau, 1976). Three classes of flavanoid, the coumestans, prenylated flavonoids and isoflavones, are phytoestrogens that possess the most potent oestrogenic activity. A class of non-flavonoid phytoestrogens, the lignans has also been identified. The relationship between these types of phytoestrogen and the names of the compounds most commonly found in food from these four groups are summarised in Figure 3.1. The Working Group has defined a phytoestrogen as: any plant substance or metabolite that induces biological responses in vertebrates and can mimic or modulate the actions of endogenous oestrogens usually by binding to oestrogen receptors. (source: <http://www.foodstandards.gov.uk/>)

Phytoestrogens are assumed to affect the endocrine system of animal species similarly to other man-made endocrine disrupters and to exert their effects through estrogen receptors, specifically ER(alpha) and ERbeta. However, these molecular mechanisms are not fully understood. In this study, 19

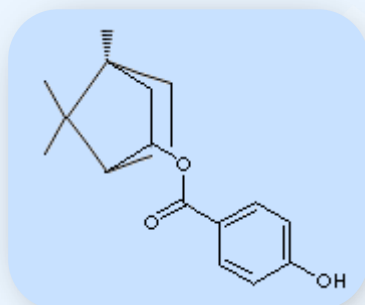


FERUTININ

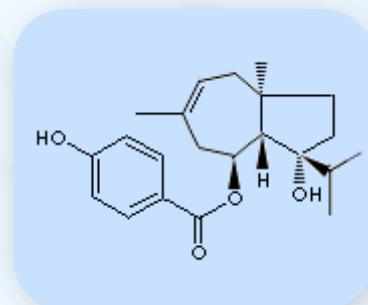
phytochemicals were surveyed for agonist and antagonist activities of ER(alpha) and ERbeta using an ERE-luciferase reporter assay. The results showed that ferutinine is an agonist for ER(alpha) and an agonist/antagonist for ERbeta, tschimgine is an agonist for both ER(alpha) and ERbeta, and tschimganidine is an agonist for only ER(alpha). Ferutinine and tschimganidine are sesquiterpenoids, and tschimgine is a monoterpene derived from the Umbelliferae family. A competitive binding assay showed that ferutinine has higher binding affinities than tamoxifen for both ERs. Co-transfections of coactivators such as SRC-1, TIF2, AIB1, and TRAP220 in 293T cells and use of the luciferase assay revealed that TRAP220 failed to enhance the transcription mediated by ERbeta in the presence of ferutinine. Moreover, a GST pull-down assay showed that TRAP220 marginally bound to ERbeta ligand binding domain in the presence of ferutinine. These results suggest that the conformation of ferutinine-liganded ERbeta is difficult for TRAP220 to recognize. Taken together, this suggests that some terpenoids can modulate estrogen signaling as ER subtype-selective phytoestrogens similar to SERMs (selective estrogen receptor modulators). (source: <http://www.ncbi.nlm.nih.gov/>)



Tschimganin (CAS # 38970-49-9)



Tschimgin (CAS # 38970-50-2)



Ferutinine (CAS # 41743-44-6)

SALES SPECIFICATION

APPEARANCE	white powder
PURITY	85.0% min

PACKING

PRICE

