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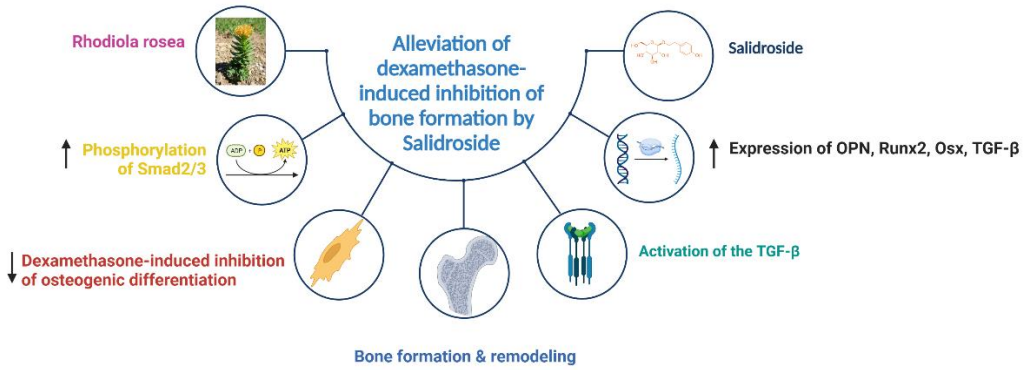
Editor's Choice

Editor's Selection of the Important Research Investigations in the Field of Phytopharmacological Communications from Around the World

Editorial Staff

Alleviation of Dexamethasone-induced Inhibition of Bone Formation by Salidroside

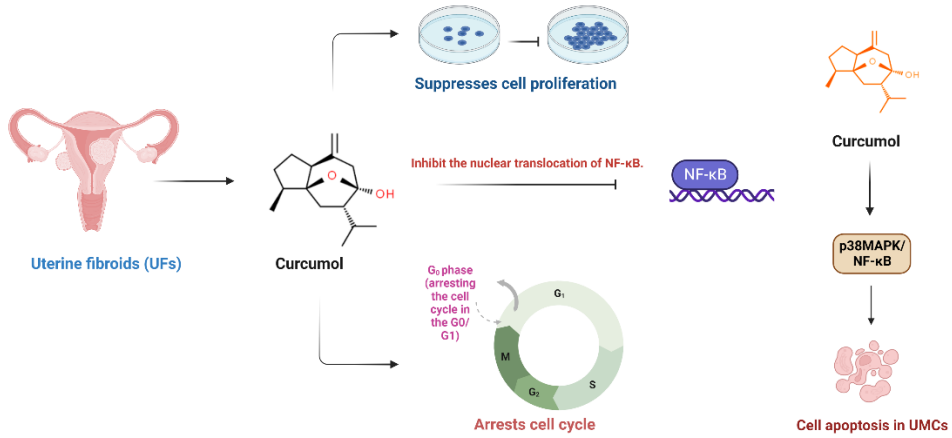
Salidroside is a natural compound found in the plant Rhodiola rosea. It has been the subject of scientific research due to its potential health benefits. Xie and colleagues investigated the effect of salidroside on dexamethasone-induced inhibition of bone formation and found that it may alleviate this inhibition. The study investigated whether salidroside could counteract the inhibitory effects of dexamethasone on bone formation. The researchers focused on the TGF-β/Smad2/3 signaling pathway, which plays a crucial role in regulating bone metabolism. Salidroside increased the expression of osteopontin (OPN), runt-related transcription factor 2 (Runx2), osterix (Osx), transforming growth factor-beta (TGF-β) proteins and promoted the phosphorylation of Smad2/3 in MC3T3-E1 cells treated with dexamethasone. The results of the study demonstrated that salidroside treatment mitigated the dexamethasone-induced inhibition of osteogenic differentiation and bone formation. Salidroside was found to promote the activation of the TGF-β/Smad2/3 signaling pathway, which is involved in bone formation and remodeling processes. ***Phytother Res.*** 2023 May;37(5):1938-1950. doi: 10.1002/ptr.7711.



Curcumol Attenuates Human Uterine Leiomyoma Cell Development

Curcumol is a major terpenoid compound derived from Curcumae Rhizoma, the rhizome of the plant Curcuma wenyujin. It has been studied for its potential therapeutic properties, including its effects on human uterine leiomyoma cell development. Yu and colleagues investigated the impact of curcumol on uterine leiomyoma cells and found that it may attenuate their development. Uterine leiomyomas, also known as uterine fibroids, are benign tumors that develop in

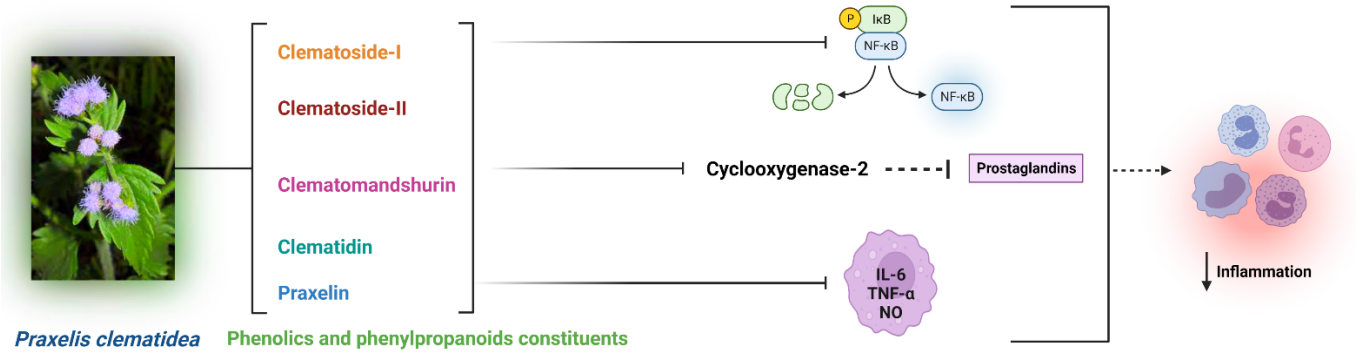
the smooth muscle layer of the uterus. They are the most common type of uterine tumor in women of reproductive age and can cause various symptoms, including heavy menstrual bleeding, pelvic pain, and reproductive issues. The study aimed to explore the effects of curcumol on the development of human uterine leiomyoma cells. Curcumol was selected due to its potential anti-inflammatory and anti-proliferative properties. The results of the study indicated that curcumol treatment attenuated the development of human uterine leiomyoma cells. It achieved this effect by inhibiting the activation of the p38MAPK/NF-κB pathway. The p38MAPK (mitogen-activated protein kinase)/NF-κB (nuclear factor kappa-light-chain-enhancer of activated B cells) pathway is a signaling pathway involved in various cellular processes, including inflammation and cell proliferation. Dysregulation of this pathway has been implicated in the development and progression of various diseases, including uterine leiomyoma. Curcumol was found to suppress the phosphorylation (activation) of p38MAPK and subsequently inhibit the nuclear translocation of NF-κB. These actions resulted in decreased production of pro-inflammatory cytokines and reduced cell proliferation in uterine leiomyoma cells. It's important to note that while these findings suggest a potential therapeutic effect of curcumol on uterine leiomyoma cells, further research, including in vivo studies and clinical trials, is needed to validate these findings and determine the optimal use of curcumol in the management of uterine leiomylomas. ***J Ethnopharmacol.*** 2023 Jun 28;310:116311. doi: 10.1016/j.jep.2023.116311.



Anti-inflammatory Actions of Praxelis Clematidea

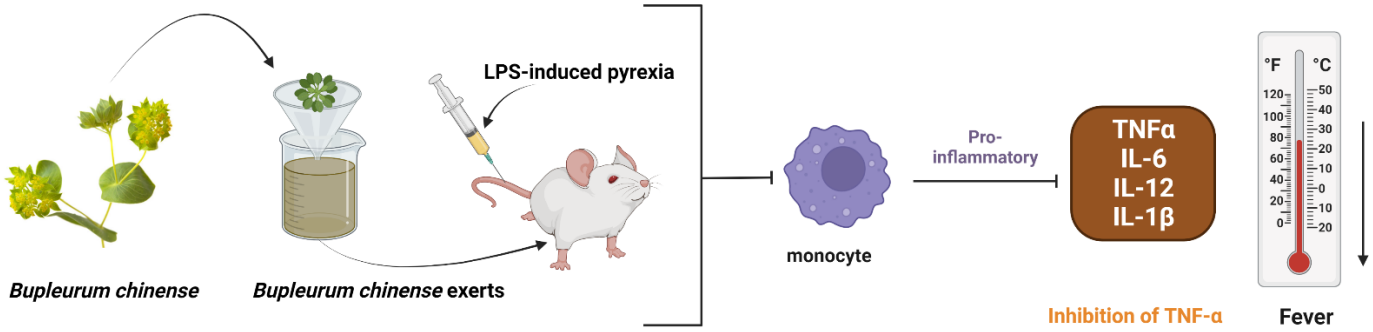
Praxelis clematidea is a plant species that belongs to the Asteraceae family. It is native to South America and has been traditionally used in folk medicine for its medicinal properties. Researchers have investigated the chemical constituents of Praxelis clematidea and identified several anti-inflammatory phenolics and phenylpropanoids. Here is some information about these compounds: The anti-inflammatory properties of Praxelis clematidea phenolics and phenylpropanoids make them of interest for potential therapeutic applications. Studies have identified various phenolics and phenylpropanoids in Praxelis clematidea, including flavonoids, caffeic acid derivatives, coumarins, and lignans. Some of the specific compounds reported include clematidin, clematomandshurin, clematoside-I, clematoside-II, and praxelin. Liang and his colleagues have demonstrated the anti-inflammatory activity of these compounds. They have been shown to inhibit the production of pro-inflammatory molecules, such as nitric oxide (NO), prostaglandin E2 (PGE2), and pro-inflammatory cytokines like interleukin-6 (IL-6) and tumor necrosis factor-alpha (TNF-α). They can inhibit the activation of transcription factors like nuclear

factor-kappa B (NF-κB) and activator protein-1 (AP-1), which are key regulators of inflammatory responses. The authors concluded that given their anti-inflammatory properties, the phenolics and phenylpropanoids from Praxelis clematidea have the potential for use in the development of natural anti-inflammatory agents or as leads for drug discovery targeting inflammation-related conditions. ***Fitoterapia***. 2023 Jun;167:105476. doi: 10.1016/j.fitote.2023.105476.



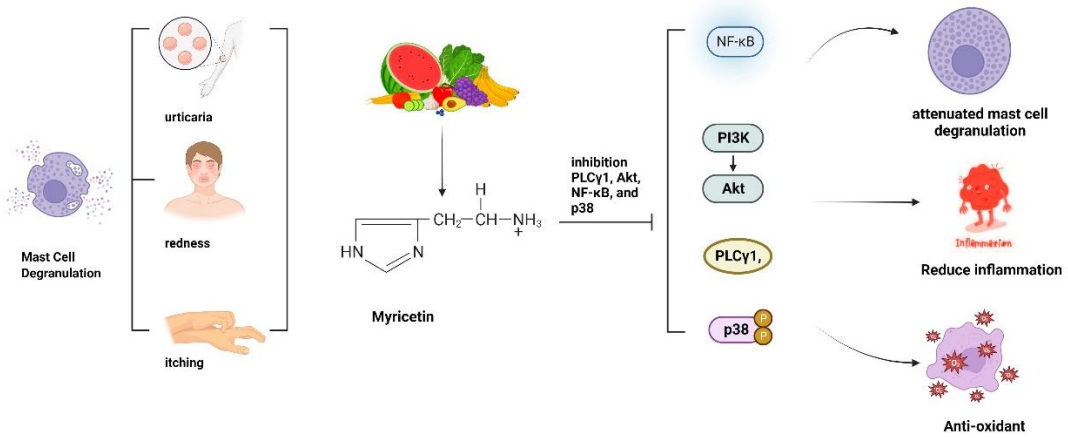
Antipyretic Effect on LPS-Induced Pyrexia in Rats by Bupleurum Chinense

Bupleurum chinense is a medicinal plant commonly used in traditional Chinese medicine. It has been investigated for its potential therapeutic effects, including its antipyretic properties. Kang and colleagues focused on the antipyretic effect of Bupleurum chinense in rats with lipopolysaccharide (LPS)-induced pyrexia and found that it exerted a mild antipyretic effect. Pyrexia refers to an elevated body temperature or fever. LPS, a component of the cell wall of certain bacteria, is commonly used to induce an inflammatory response and fever in experimental animal models. The study investigated the potential antipyretic effect of Bupleurum chinense in LPS-induced pyrexia rats. TNF-α is a pro-inflammatory cytokine involved in the regulation of immune responses. In the study, Bupleurum chinense was found to inhibit the production of TNF-α in the peripheral tissues of LPS-induced pyrexia rats. The inhibition of peripheral TNF-α production by Bupleurum chinense resulted in a mild antipyretic effect, reducing the elevated body temperature in the LPS-induced pyrexia rats. The specific mechanisms by which Bupleurum chinense inhibits peripheral TNF-α production were not described in the study. However, the anti-inflammatory and immunomodulatory properties of Bupleurum chinense compounds may contribute to this effect. ***J Ethnopharmacol***. 2023 Jun 28;310:116375. doi: 10.1016/j.jep.2023.116375.



Alleviated of Immunologic Contact Urticaria and Mast Cell Degranulation by Myricetin

Myricetin is a flavonoid compound found in various plants, such as berries, fruits, vegetables, and medicinal herbs. It has been studied for its potential health benefits, including its effects on immunologic contact urticaria and mast cell degranulation. Hu et al investigated the impact of myricetin and found that it may alleviate immunologic contact urticaria and mast cell. Immunologic contact urticaria is a type of allergic reaction that occurs when the skin comes into contact with certain allergens. It is characterized by the development of hives (urticarial lesions) and symptoms such as itching, redness, and swelling. The study investigated the effect of myricetin on immunologic contact urticaria using in vitro and in vivo models. Myricetin was chosen based on its known anti-inflammatory and antioxidant properties. The PI3K (phosphoinositide 3-kinase)/Akt (protein kinase B)/NF-κB (nuclear factor kappa-light-chain-enhancer of activated B cells) pathway is a signaling pathway involved in various cellular processes, including inflammation.



Activation of this pathway is associated with mast cell degranulation and the release of pro-inflammatory mediators. The results of the study demonstrated that myricetin treatment attenuated immunologic contact urticaria and mast cell degranulation. Myricetin was found to inhibit the activation of the PI3K/Akt/NF-κB pathway, leading to reduced mast cell degranulation and decreased release of inflammatory mediators. Myricetin significantly inhibited PLCγ1, Akt, NF-κB, and p38 phosphorylation. These findings suggest that myricetin may have potential as a therapeutic agent for the management of immunologic contact urticarial and other allergic conditions. ***Phytother Res***. 2023 May;37(5):2024-2035. doi: 10.1002/ptr.7726.

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