TURKESTERONE

Aumento do desempenho físico e da massa magra

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DESCRIÇÃO

*Ajuga turkestanaica extract*, erva originaria da Ásia Central, quimicamente classificado como **phytoecdysteroides** (triterpenóides que incluem saponinas triterpeno e fitoesterois), tendo como seu principal ativo a **turkesterone 2%**, e tendo como outros elementos 20-hidroxicisatona, ciasterona, ciasterona 22-acetato, ajugalactone, ajugasterone B, a-eclidisona 2, 3 – monoacetonide, além de harpagide iridóides e harpagide 8 – acetato.

MECANISMO DE AÇÃO

A **Turkesterone** ativa os receptores de membranas ligados à proteína G e os canais de cálcio. A proteína G ativada promove a ativação da fosfolipase C (PCL) que produz Fosfatidilinositol 3 (IP3), o IP3 atua nos receptores de Fosfatidilinositol 3 (IP3R) liberando os estoques de cálcio do retículo endoplasmático rugoso. Isto somado ao cálcio que entra na célula através dos canais de cálcio promove a ativação de quinases PI3K (Fosfatidilinositolquinase), PDK-1 (Piruvato desidrogenase quinase-1) e AKT (Proteína quinase B) que aumentam a síntese proteica (efeito anabolizante).

INDICAÇÕES

- Aumentar massa muscular; elevar desempenho físico;
- Incrementar assimilação de proteínas;
- Melhorar a função cardiovascular;
- Prevenir a ruptura muscular pós-treino.

DOSE USUAL

Recomendação de 500 a 2000 mg ao dia de **Turkesterone 2% (Ajuga turkestanaica extract)** via oral.

SUGESTÕES DE FÓRMULAS

<table>
<thead>
<tr>
<th>Turkesterone 2% (Ajuga turkestanaica extract) ..... 500 mg</th>
<th>Turkesterone 2% (Ajuga turkestanaica extract) ..... 750 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tribullus terrestres ES (40% saponinas) ........ 750 mg</td>
<td>Cyanotis vaga (70% ß-ecdisterona) ................. 250 mg</td>
</tr>
<tr>
<td>Cyanotis vaga (70% ß-ecdisterona) .................. 250 mg</td>
<td>Rhodiola rosea ES (1% rosavina e 3% salidrosideo) 150 mg</td>
</tr>
</tbody>
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**Modo de uso:** 01 dose 2 vezes ao dia.
**Indicação:** aumento de massa muscular e melhora no desempenho físico.

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PRINCIPAIS REFERÊNCIAS


Ajuga turkestanica increases Notch and Wnt signaling in aged skeletal muscle

BACKGROUND: The declining myogenic potential of aged skeletal muscle is multifactorial. Insufficient satellite cell activity is one factor in this process. Notch and Wnt signaling are involved in various biological processes including orchestrating satellite cell activity within skeletal muscle. These pathways become dysfunctional during the aging process and may contribute to the poor skeletal muscle competency. Phytoecdysteroids are natural adaptogenic compounds with demonstrated benefit on skeletal muscle. AIM: To determine the extent to which a phytoecdysteroid enriched extract from Ajuga turkestanica (ATE) affects Notch and Wnt signaling in aged skeletal muscle.

MATERIALS AND METHODS: Male C57BL/6 mice (20 months) were randomly assigned to Control (CT) or ATE treatment groups. Chow was supplemented with either vehicle (CT) or ATE (50 mg/kg/day) for 28 days. Following supplementation, the triceps brachii muscles were harvested and immunohistochemical analyses performed. Components of Notch or Wnt signaling were co-labelled with Pax7, a quiescent satellite cell marker. RESULTS: ATE supplementation significantly increased the percent of active Notch/Pax7+ nuclei (p = 0.005), Hes1/Pax7+ nuclei (p = 0.038), active B-catenin/Pax7+ nuclei (p = 0.011), and Lef1/Pax7+ nuclei (p = 0.022), compared to CT. ATE supplementation did not change the resting satellite cell number.

CONCLUSIONS: ATE supplementation in aged mice increases Notch and Wnt signaling in triceps brachii muscle. If Notch and Wnt benefit skeletal muscle, then phytoecdysteroids may provide a protective effect and maintain the integrity of aged skeletal muscle.

Effect of Turkesterone and nero bol on the activity of the protein synthesizing system of mouse liver

Protein biosynthesis was stimulated in liver tissue in vivo and in vitro after administration into mice of either phytoecdizone of turkesterone (0.5 mg/100 g) or of anabolic steroid compound nero bol (1 mg/100 g). Stimulation of protein biosynthesis was due to an increase in functional activity of polyribosomes and to elevation in the synthesis of protein molecules. Actinomycin D, which inhibited the stimulation of protein biosynthesis in liver tissue of mice treated with nero bol, did not affect the phenomenon in mice treated with Turkesterone.

Phytoecdysteroids - From Isolation to Their Effects on Humans

An overview is given on both well-known and recently discovered phytoecdysteroids including a sophisticated isolation scheme and notable physiological and pharmacological effects of ecdysteroids on vertebrates. The isolation of pure ecdysteroids has been improved by the use of low-pressure reversed-phase chromatography. An optimized combination of preliminary purification and chromatographic separations results in pure ecdysteroids. Structural elucidation has been done using spectroscopic methods, however, the final proof of the steric structure is rendered using x-ray crystallography. Ecdysteroid containing preparations show a boom and both OTC products and numerous preparation techniques can be found using the Internet. This paper will give a review on the kaleidoscope of pharmacological effects attributed to the ecdysteroids, such as: An increase of protein synthesis (for body-building, AIDS, patients with neoplasm disease, etc.), and other body functions; Antidepressant effect; Shielding the body from stress, and improve the physical and sexual performance; Prevention from infections and certain diseases. A list of recent offers of ecdysteroid-containing products will also be given. The perspective use of ecdysteroids is promising in genetics. Steroid regulation of programmed cell death during development and differentiation has recently come to the limelight. Murine model of human diseases and its influencing with ecdysteroids are detailed.
In Vitro Characterization of the Efficacy and Safety Profile of a Proprietary Ajuga turkestanica Extract

Ajuga turkestanica, an herbaceous flowering species in the mint family, has been traditionally used in Turkey and Uzbekistan for heart disease, muscle aches and stomach problems. Due to its high levels of phytoecdysteroids (particularly the characteristic C-11-hydroxylated Turkesterone), anabolic properties have also been reported. The aim of our study was to screen for early signs of efficacy and safety of a proprietary Ajuga turkestanica extract (ATE) using in vitro models. C2C12 mouse myotube cell line was used to study potential effects on viability and gene modulation. Cell viability was evaluated with different concentrations [0.2 - 200 ppm (mg/L)] of ATE. Gene modulation was assessed by quantitative polymerase chain reaction (qRT-PCR) after 6 h incubation (ATE vs. the androgenic anabolic steroid methandienone). Total androgenic activity was measured using the A-SCREEN bioassay. Ultra-high performance liquid chromatography analysis showed good correlation between the phytochemical profile of the native plant and our ATE. C2C12 mouse myotube cells treated with ATE experienced no significant loss of viability (concentrations 0.2 - 200 ppm, 1 - 24 hs, p > 0.05). qRT-PCR array analysis showed significant (p < 0.05) downregulation of Caspase-3 (2-fold) and Myostatin (4-fold). The extract showed no androgenic activity within the dose range used. Our results indicate the potential for an ATE to support muscle mass without typical androgenic side effects of synthetic anabolic drugs.

REFERÊNCIAS


