Rhaponticum carthamoides

Anabolic effect of whole extract is superior to individual Ecdysterones

Treasures of Siberian Phytomedicines:
Rhaponticum carthamoides

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Introduction: Rhaponticum carthamoides (Willd.) Iljin, also know as Leuzea, or Maral root, is plant indigenous to the Lake Baikal region and distributed throughout Eastern Siberia. Traditionally the Siberians consumed the Leuzea tea mixed with Rhodiola rosea root for a long time as a natural stimulant, in cases of tiredness and general weakness after illness and energizing remedy after the long Siberian winter.

After more than 25 years of research and clinical studies *Rhaponticum carthamoides* radix et rhizome has been added to the Official Russian Pharmacopoeia that recommends "the herb for increasing work efficiency, athletic performance and recovery after muscular workloads". *Rhaponticum carthamoides* extract were included to the most popular Russian beverages such as "Baikal" and "Sayan". Elite Russian and Bulgarian athletes have long used Rhaponticum extract to stimulate muscle growth.

Phytochemistry. Key active constituents responsible for specific anabolic effect of *Rhaponticum carthamoides* is a mixture of compounds called, "levsens". Levsens [illegible] ecdysterone, inokosterone, 20-hydroxyecdysone, makisterone A, 24-dehydromakisterone A, carthamosterone, polypodine B and ajugasterone C.

Mechanism of action. Studies on Rodent models have shown that the Levsen extract stimulates muscle protein synthesis by increasing the activity of the polyribosomes. Polyribosomes are the [illegible] extracted and purified various ecdysteroids from Leuzea and found that the ecdysteroids increase proportionally to the ecdysteroids content. It was evident that the presence of [illegible] However it is important to point out that the mixture of ecdysteroides was found to be [illegible] whole extract of *Rhaponticum carthamoides* containing mixture of levsens possess much [illegible] conditions. Overall, results indicated that 0.5mg/kg body weight is the optimal dosage of 20-beta-ecdysterone in this study and performance formula.

RHAPONTICUM CARTHAMOIDES – A POWERFUL NATURAL ANABOLIC

Several scientific discoveries have substances that had profound [illegible] are behind [illegible] is called beta-ecdysterone. The Soviets manufactured a synthetic version of this powerful [illegible] Already circulated on the underground market for a long time. In rock-to-rock studies [illegible] number of muscle circulation and muscle cell growth (Syrov et al. 1976, 1977).

Results revealed that the latter go directly to the nucleus of a cell to tell the difference, the [illegible] beta-ecdysterone, on the other hand, goes directly to the ribosome and increases with its cellular concentration, the rate at which new protein is being made (Syrov et al. 1984).

translation, or direct protein synthesis (Syrov et al. 1984). Ecdysten doubles the rate of translation and is very safe. Aside from increasing the rate of [illegible]

[illegible]

[illegible]

and the developmental cycles of insects and other invertebrates [illegible]

[illegible] identified in certain cases, ecdysteroids are accumulated to high [illegible] plants have been known as medicinal plants for centuries. A [illegible] available as a commercial preparation for its anabolic, tonic and other physiological effects is remained problematic, however, because Leuzea contains a number of other biologically active [illegible]

Левзея

[illegible]

[illegible] was studied (Azizov and Seifulla 1998). Intensive cyclic physical activity [illegible] the complement C3 component on the 10th and 20th days. Leuzea extract contributed to [illegible] Leuzea extract in combination with L-carnitine and Acetyl-L-carnitine when used for [illegible] Carnitine tablet

Leuzea extract considerably increases the working capacity of tired skeletal muscles and [illegible] *Rhodiola rosea* (Seifulla 1999). Several Leuzea based phytomedicines (Levetón) are the most popular among professional athletes including Olympic and World [illegible] the everyday life of healthy persons as a tonic for increasing intellectual and physical [illegible] learning and memory processes without harmful effects on the organism (Petrov et al.

species of plants (Lafont 1998). Among more than dozen plant species containing human clinical trials and phytochemical research. Research pointed out that superior (Leuzea) ecdysterones rather then a single 20-beta-ecdysterone, which is abundant in fungi. The use of 20-beta-ecdysterone content as indication of superiority one extract *Rhaponticum carthamoides* extract with inferior plant extract.

Leuzea extract was shown very safe for humans at even high dosages. The extract did not administration of relatively high doses above 10 g/kg, there occurred some functional an increase of the narcotic effects of chloral hydrate and a tendency towards imbalanced always good for you.

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