

HERBCLIP

FILE: Pumpkin (*Cucurbita pepo*)
BPH (Benign Prostatic Hypertrophy)

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RE: **Pumpkin Seed Monograph**

Bombardelli, E. and P. Morazzoni. *Cucurbita pepo* L. *Fitoterapia*, Vol. LXVIII No. 4, 1997, pp. 291-302.

This lengthy review of *Cucurbita pepo* (*Cucurbita aurantia* Willd., *Cucurbita melopepo* L., *Pepo vulgaris* Moench.), also known as summer pumpkin, includes extensive discussions of the plant's botany and its chemistry, the latter of which identifies the seed's lipid and steroidal components. In addition, the review incorporates a brief summary of pharmacology studies, both in vitro and in vivo, and clinical studies that have been performed using the lipid-steroidal extracts obtained from *C. pepo* seeds.

Squalene is a characteristic chemical constituent of the seeds that accumulates mostly in the non-saponifiable fraction (39-46%). The authors write that squalene "can be used as a marker for the differentiation of the oils obtained from other seeds."

C. pepo seed extracts inhibited the conversion of testosterone into dihydrotestosterone (DHT) in cultures of human fibroblasts. The mechanism for this inhibition, however, was characterized as different from other herbal extracts used for the treatment of benign prostatic hyperplasia (BPH) (e.g. saw palmetto berry and Pygeum bark *Prunus africana*); i.e. the pumpkin seed extract did not appear to strongly inhibit 5-alpha-reductase activity, as do the two other botanicals cited. The extract acted as a dose-related antagonist to the development of the prostate and related target organs. Details of other studies were provided, emphasizing that, in spite of large clinical use of beta-sitosterol (an active component), the pharmacological activity of the phytosterols is still not well documented.

Nevertheless, in double-blind studies significant improvements in patients receiving the herb were noted in the following: urinary flow rate, voiding time, and residual volume. An association of the extract of *C. pepo* seeds in combination with other botanical derivatives given to 20 patients suffering from BPH, resulted in improved subjective symptomatology.

Final notes refer to the application of pumpkin seed oil in the dietetic field. Because of the presence of protochlorophyll and carotenoids and the high

content of polyunsaturated fatty acids (approximately 54%) and tocopherols, the oil is an adjuvant in the treatment of diet-related hyperlipoproteinemia and in the prophylaxis of atherosclerosis.

Of particular interest are comments by the authors about deficiencies in other studies reporting the chemical composition of pumpkin seeds, leading to contradictory findings. They comment that, in most cases, the experimental procedure does not state the full botanical name of the materials from which the extract was prepared, and in many cases, information regarding the variety and cultivar is also missing. Pumpkin seeds and preparations thereof are approved by the German Commission E for use in BPH.

The authors are research scientists at Indena SpA, a large Milan, Italy-based manufacturer of botanical extracts, including pumpkin seed extract. ³/₄*Anne Tarleton, PhD*

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