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FILE: ▪Saw Palmetto (*Serenoa repens*)
▪Benign Prostatic Hyperplasia (BPH)
▪Prostate

HC 120448-276

Date: March 15, 2005

RE: Research on Saw Palmetto Extract's Mechanisms of Action in BPH

Wadsworth TL, Carroll JM, Mallinson RA, Roberts CT Jr, Roselli CE. Saw palmetto extract suppresses insulin-like growth factor-I signaling and induces stress-activated protein kinase/c-Jun N-terminal kinase phosphorylation in human prostate epithelial cells. *Endocrinology*. July 2004;145(7):3205-3214.

Benign prostatic hyperplasia (BPH) is a noncancerous growth of the prostate gland. Induction of apoptosis (programmed cell death) and suppression of cell growth are treatment goals. Insulin-like growth factor-I (IGF-I) is partially responsible for the pathogenesis and progression of BPH. In addition, anti-apoptotic events are stimulated by the activation of the protein kinase Akt. Apoptosis can be activated by inhibiting the effects of growth factors or by activating the stress-activated protein kinase/c-Jun N-terminal kinase (SAPK/JNK). This study tests the hypothesis that saw palmetto extract (*Serenoa repens*) suppresses prostate epithelial cell growth and induces apoptosis by inhibiting IGF-I signaling. The effects of saw palmetto on SAPK/JNK activity were also assessed.

In vitro prostate epithelial cells (cell line P-69) were treated with saw palmetto extract (Sabalselect, Indena s.a., Tours, France). Akt activity was monitored. Cell viability and cell proliferation were assessed.

Saw palmetto decreases P-69 cell viability and inhibits IGF-I-induced cell proliferation. Saw palmetto induces apoptosis of the P-69 cells. It also decreases IGF-I activation of Akt, thereby enabling apoptosis. Saw palmetto increases the activation of JNK, which would promote apoptosis. Rapidly growing P-69 cells were more susceptible to saw palmetto extract-induced toxicity compared to slowly growing cells.

The authors conclude that saw palmetto relieves the symptoms of BPH, in part, by inhibiting the IGF-I signaling pathway and inducing JNK activation. This activity would

stimulate apoptosis and inhibit cell proliferation of prostate epithelial cells. These results help explain the efficacy of saw palmetto in the treatment of BPH symptoms.

—Heather S. Oliff, PhD

Enclosure: Referenced article reprinted with permission from The Endocrine Society.