



APS II®
(with White Willow Bark)
Stock #780-8 (100 capsules)

APS II contains a unique combination of herbs that work synergistically to help relieve muscle and joint aches and pain and soothe inflammation. APS II contains herbs that have been proven beneficial for easing symptoms associated with arthritis, back pain, headaches, muscle cramps and even menstrual cramps. The herbs in APS II may also help soothe nerve-related pain and discomfort and help ease stress and nervous tension.

White willow bark (*Salix alba*) is regarded as an effective natural remedy for reducing fevers and relieving pain and inflammation. Willow bark is used as a natural anti-inflammatory for symptomatic relief of arthritis and back pain and as an analgesic for mild neuralgic pains (nerve-related pain), toothaches and headaches. The German Commission E has also approved willow bark for rheumatic ailments, headaches and diseases accompanied by fever. Willow bark contains the active ingredient salicin, which is metabolized in the body into salicylic acid—a chemical relative of acetylsalicylic acid, the active ingredient in aspirin. Salicylic acid helps relieve inflammation and pain by inhibiting the activity of COX-2 (cyclooxygenase-2). COX-2 is an enzyme that stimulates the release of prostaglandins (hormone-like compounds) that cause inflammation and pain. Willow bark also contains flavonoids and polyphenols that contribute to the herb's anti-inflammatory and analgesic effects. Clinical studies have proven the efficacy of willow bark extract in painful inflammatory and degenerative rheumatic diseases, and randomized, double-blind studies have found standardized willow bark extract to be far more effective than placebo for treating chronic low back pain and osteoarthritis. In addition, a randomized, controlled clinical trial comparing the effects of willow bark extract to the prescription drug rofecoxib (a synthetic COX-2-inhibitor) found no significant difference in effectiveness between the two treatments. Evidence indicates that willow bark does not interfere with blood coagulation—it does not prolong bleeding time, nor does it inhibit platelet aggregation. In addition, willow bark's active ingredients are metabolized by the liver, thus by-passing the gastrointestinal tract and avoiding irritation of the gastrointestinal mucosa. However, willow bark is contraindicated in patients with a known allergy to aspirin.¹⁻¹⁶

Valerian (*Valeriana officinalis*) is regarded as an effective antispasmodic (muscle relaxant), mild analgesic (pain-reliever) and sedative. Valerian has also demonstrated anti-inflammatory and antioxidant activity. Valerian is commonly used for anxiety and stress-related conditions, insomnia, muscle cramps, intestinal spasms, and migraine/tension headaches. In vitro tests have shown that valerian extract appears to have a direct inhibitory action on uterine contractions, which would explain the herb's use in treating uterine cramping. Furthermore, a recent study confirmed that valerian decreases symptoms associated with dysmenorrhea (painful menstruation), most likely due to its antispasmodic activity. Valerian should not be used in conjunction with prescription sleep-aids or anxiolytics.^{5,17-26}

Capsicum (*Capsicum annuum*) stimulates the production of mucosal fluids, which helps soothe inflammation of the mucous membranes and enhances the removal of toxins from the body. Capsicum also acts as a circulatory stimulant, promoting blood flow to the extremities, which may help relieve symptoms of peripheral vascular disorders such as pain in the legs and cold hands and feet. In addition, capsicum appears to have a beneficial effect on peptic ulcer disease. Capsicum contains active substances known as capsaicinoids, which exert numerous pharmacological and physiological actions, including analgesic, anti-inflammatory and antioxidant effects.^{1,2,5,17,27-31}

References:

- ¹Herbal Medicine: Expanded Commission E Monographs. Integrative Medicine Communications, 2000.
- ²Presser PharmD, A. *Pharmacist's Guide to Medicinal Herbs*. Petaluma, CA: Smart Publications, 2000.
- ³Pasero, G., Marson P. [A short history of anti-rheumatic therapy. II. Aspirin]. *Reumatismo*; 2010, 62(2):148-156.
- ⁴März, R.W., Kemper, F. [Willow bark extract—effects and effectiveness. Status of current knowledge regarding pharmacology, toxicology and clinical aspects]. *Wiener Medizinische Wochenschrift*; 2002, 152(15-16):354-359.
- ⁵Fetrow PharmD, C. & Avila Pharm D, J. *Professional's Handbook of Complementary & Alternative Medicines*. Springhouse, PA: Springhouse Corp., 1999.
- ⁶Beer, A.M., Wegener, T. "Willow bark extract (Salicis cortex) for gonarthrosis and coxarthrosis - Results of a cohort study with a control group." *Phytotherapy Research*; 2008, Sep. 22. [Epub ahead of print]
- ⁷Schmid, B., et. al. "Efficacy and tolerability of a standardized willow bark extract in patients with osteoarthritis: randomized placebo-controlled, double blind clinical trial." *Phytotherapy Research*; 2001, 15(4):344-350.
- ⁸Nahrstedt, A., et. al. "Willow bark extract: the contribution of polyphenols to the overall effect." *Wiener Medizinische Wochenschrift*; 2007, 157(13-14):348-351.
- ⁹Gagnier, J.J., et. al. "Herbal medicine for low back pain: a Cochrane review." *Spine*; 2007, 32(1):82-92.
- ¹⁰Bogduk, N. "Pharmacological alternatives for the alleviation of back pain." *Expert Opinion on Pharmacotherapy*; 2004, 5(10):2091-2098.
- ¹¹Setty, A.R., Sigal, L.H. "Herbal medications commonly used in the practice of rheumatology: mechanisms of action, efficacy, and

- side effects." *Seminars in Arthritis and Rheumatism*; 2005, 34(6):773-784.
- ¹²Vlachojannis, J.E., et. al. "A systematic review on the effectiveness of willow bark for musculoskeletal pain." *Phytotherapy Research*; 2009, 23(7):897-900.
- ¹³Vane, J.R., Botting, R.M. "The mechanism of action of aspirin." *Thrombosis Research*; 2003, 110(5-6):255-258.
- ¹⁴Vlachojannis, J., et. al. "Willow Species and Aspirin: Different Mechanism of Actions." *Phytotherapy Research*; 2011, Jan. 12. [Epub ahead of print]
- ¹⁵Chrubasik, S., et. al. "Willow bark extract, a useful alternative for the treatment of osteoarthritis: comment on the editorial by Marcus and Suarez-Almazor." *Arthritis and Rheumatism*; 2003, 48(1):278-280.
- ¹⁶Boullata, J.I., et. al. "Anaphylactic reaction to a dietary supplement containing willow bark." *The Annals of Pharmacotherapy*; 2003, 37(6):832-835.
- ¹⁷*PDR for Herbal Medicines, 2nd Ed.* Montvale, NJ: Medical Economics Company, 2000.
- ¹⁸Miller PharmD, L. & Murray PhD, W. *Herbal Medicinals: A Clinician's Guide*. NY, NY: Pharmaceutical Products Press, 1998.
- ¹⁹Newall, C., et. al. *Herbal Medicines*. London, England: The Pharmaceutical Press, 1996.
- ²⁰Murray ND, M. *The Healing Power of Herbs*. Rocklin, CA: Prima Publishing, 1995.
- ²¹Monograph. *Valeriana officinalis*. *Alternative Medicine Review*; 2004, 9(4):438-441.
- ²²Jacobo-Herrera, N.J., et. al. "NF-kappaB modulators from *Valeriana officinalis*." *Phytotherapy Research*; 2006, 20(10):917-919.
- ²³Sudati, J.H., et. al. "In vitro antioxidant activity of *Valeriana officinalis* against different neurotoxic agents." *Neurochemical Research*; 2009, 34(8):1372-1379.
- ²⁴Hanrahan, C. "Valerian." *Gale Encyclopedia of Alternative Medicine*; 2001. <<http://tinyurl.com/6cvtlzj>>. Accessed January 2011.
- ²⁵Occhiuto, F., et. al. "Relaxing effects of *Valeriana officinalis* extracts on isolated human non-pregnant uterine muscle." *The Journal of Pharmacy and Pharmacology*; 2009, 61(2):251-256.
- ²⁶Mirabe, P., et. al. "Effects of *Valeriana Officinalis* on the Severity of Dysmenorrheal Symptoms." *Journal of Reproduction & Infertility*; 2010, 10(4):330.
- ²⁷Mills, S. & Bone, K. *Principles and Practice of Phytotherapy*. London: Churchill Livingstone, 2000.
- ²⁸Chevallier, A. *The Encyclopedia of Medicinal Plants*. NY, NY: Dorling Kindersley, 1996.
- ²⁹Oyagbemi, A.A., et. al. "Capsaicin: a novel chemopreventive molecule and its underlying molecular mechanisms of action." *Indian Journal of Cancer*; 2010, 47(1):53-58.
- ³⁰Satyanarayana, M.N. "Capsaicin and gastric ulcers." *Critical Reviews in Food Science and Nutrition*; 2006, 46(4):275-328.
- ³¹Luo, X.J., et. al. "Recent advances in the study on capsaicinoids and capsinoids." *European Journal of Pharmacology*; 2011, 650(1):1-7.