Accolades and Addenda for "Use of Botanicals in Osteoarthritis and Rheumatoid Arthritis" 13 December 2005

To the Editor,

The recent review article "Biological Basis for the Use of Botanicals in Osteoarthritis and Rheumatoid arthritis" by Ahmed and colleagues[1] is a truly remarkable document that will contribute to the understanding and appropriate clinical utilization of natural and botanical medicines in the treatment of musculoskeletal disorders. We sincerely congratulate the authors and this Journal for such a fine publication. In this letter, we would like to offer two addenda to enhance the scope of their review.

First, while providing a thorough review of Curcuma longa, the authors might have also discussed the issue concerning the systemic bioavailability of curcumin, the major constituent of turmeric, to humans. In fact, while curcumin is indeed bioavailable to rats from oral supplementation, it is not bioavailable to humans from oral dosing as high as 2 grams. Shoba et al[2] have shown that in humans given 2-gram doses of curcumin alone, the levels of curcumin in serum were undetectable to very low one hour post-administration. However, concomitant administration of 20 mg of piperine was found to significantly increase absorption and bioavailability of curcumin by 2000%, due to the ability of piperine to enhance gastrointestinal absorption and reduce intestinal and hepatic clearance. Piperine is the major pungent alkaloid found in the Asian vine Piper nigrum L, commonly known as black pepper. There are in vitro animal and human studies demonstrating the bioavailability-enhancing property of piperine for numerous drugs and nutritional supplements in addition to curcumin, including coenzyme Q10[3,4]

Second, in addition to the five plants reviewed, we feel that the white willow tree (Salix alba) would be another botanical of interest to be included in the review. Indeed, the bark of the white willow tree has been used in China for centuries as a medicine because of its ability to relieve pain and lower fever, and it is one of the better researched botanical medicines for the treatment of back pain and osteoarthritis. In a recent double-blind placebo-controlled clinical trial in 210 patients with moderate/severe low-back pain (20% of patients had positive straight-leg raising test), extract of willow bark showed a dose-dependent analgesic effect with benefits beginning in the first week of treatment.[5] In another head-to-head study of 228 patients comparing willow bark (standardized for 240 mg salicin) with Vioxx (rofecoxib), Chrubasik et al[6] showed that treatments were equally effective, yet willow bark was safer and 40% less expensive. It appears that one of the main mechanisms of action of willow bark is the inhibition of cyclooxygenase-2 (COX-2) gene transcription following its conversion to salicylates.[7] Except for possible allergic reactions in patients previously sensitized to aspirin (one single case report[8]), there is no evidence of aspirin-like adverse effects with the use of willow bark extracts.[9] Salicylates are widely present in fruits, vegetables, herbs and spices and are partly responsible for the anti-cancer, anti-inflammatory, and health-promoting benefits of plant consumption.[10,11]

Again, we congratulate authors Ahmed, Anuntiyo, Malemud, and Haqqi for their excellent review. Their paper will clearly contribute to an accurate understanding of the value of natural and botanical medicines in the clinical treatment of musculoskeletal disorders.[12]

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Conflict of Interest: Drs. Vasquez and Muanza are researchers at Biotics Research Corporation, an FDA-licensed drug manufacturing facility in the USA that evaluates and manufactures botanical extracts.