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ANCIENT CHINESE HERBAL REMEDY  
TO BE TESTED AS ARTHRITIS THERAPY

DALLAS --Among 250,000 known species of plants, Western medicine has come to rely on a mere handful in the formulation of drugs. Throughout the developing world, however, several thousand plants are valued by folk practitioners for their medicinal properties. More and more Western physicians have begun to ask themselves, "Are we missing something?"

For arthritis researchers at The University of Texas Southwestern Medical Center at Dallas, that question is no longer idle speculation. They are poised to begin the first clinical trials in the West of the Chinese herbal remedy Lei gong tang ("Thunder God Vine"), known to botanists by its Latin name, Tripterygium wilfordii Hook F.

Over the last 20 years, physicians in the People's Republic of China have reported promising results using the root of the Thunder God Vine to treat rheumatoid arthritis, ankylosing spondylitis, systemic lupus erythematosus, chronic hepatitis and a variety of skin disorders. Currently, however, such treatment is available only in the Far East.

That may be about to change. In March researchers at UT Southwestern's Harold C. Simmons Arthritis Research Center applied to the U.S. Food and Drug Administration for permission to administer an extract of Tripterygium wilfordii Hook F, dubbed "T<sub>2</sub>," to rheumatoid arthritis patients in a placebo-controlled study of both safety and efficacy.

Principal investigator for the T<sub>2</sub> research is Dr. Peter Lipsky, director of the Harold C. Simmons Center for Arthritis Research and

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professor of internal medicine and microbiology. Lipsky also is co-director of the immunology program at Southwestern Graduate School of Biomedical Sciences.

Assisting Lipsky is Dr. Tao Xue-Lian, instructor of internal medicine, who has more than a decade of clinical experience with  $T_2$  in her native China. Others working on the study are Jian Cai, a Chinese-trained pharmacist, and Lisa Nichols, nurse-coordinator for the clinical trials.

Last fall, Lipsky, Tao and Dr. Laurie S. Davis, assistant professor of internal medicine, found that  $T_2$  inhibited the activity of human immune cells in culture. In autoimmune diseases like rheumatoid arthritis, these cells attack healthy tissue, producing inflammation and pain.

Efforts to isolate the active principle of Thunder God Vine have progressed rapidly in the Simmons Center laboratories. "We're down to three or four candidates," said Lipsky. "Structurally, these compounds don't resemble anything else we know about. It would appear they fall into the category of drugs we call immunosuppressants because they block the function of cells that drive the immune response that perpetuates inflammatory diseases like rheumatoid arthritis. We're encouraged by the fact that at least 780 patients have been given  $T_2$  in China without experiencing any of the side effects we associate with classic immunosuppressant drugs. We think the active principle in  $T_2$  may be the prototype of a whole new category of immunosuppressants."

Lipsky has two goals for his research. "The first," he said, "is to stimulate the interest of the U.S. pharmaceutical industry so that a drug based on the pure active ingredient will be developed. That might take seven or eight years. In the meantime, we hope to be able to accomplish our second goal: to treat patients safely and effectively with the crude extract."

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A perennial twining vine belonging to the family Celastraceae, Thunder God Vine grows densely on the hills of southern China. The medicinal use of its root can be traced back 2,000 years, when it was prescribed for fever, chills, edema and carbuncle. Chinese farmers also have used the powdered root to protect their crops against chewing insects.

The root is collected in the summer or early autumn. The bark, which is poisonous, is discarded. The woody, vascular interior of the root is dried and cut into small pieces for further processing. UT Southwestern last year acquired nearly one ton of high-quality, unprocessed root for study purposes.

Lipsky thinks he may even have discovered a Mexican cousin to Thunder God Vine. He purchased samples of it at an herb market in downtown Mexico City and brought them back to Dallas for analysis. "The Mexican root appears to have the same active principle," he says. "Somehow, cultures separated by 10,000 years both know about this type of root, prepare it in a comparable way, and use it for almost the same indications. It suggests quite strongly there's something there."

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NOTE: The University of Texas Southwestern Medical Center at Dallas comprises Southwestern Medical School, Southwestern Graduate School of Biomedical Sciences, Southwestern Allied Health Sciences School, affiliated teaching hospitals and outpatient clinics.