



AMERICAN
BOTANICAL
COUNCIL

Now in Our
20th Year

P.O. Box 144345 Austin, TX 78714-4345 ■ 512.926.4900 ■ Fax: 512.926.2345 ■ www.herbalgram.org

HerbClip™

Mariann Garner-Wizard
Jennifer Minigh, PhD

Shari Henson
Heather S Oliff, PhD

Brenda Milot, ELS
Marissa Oppel, MS

Executive Editor – Mark Blumenthal

Managing Editor – Lori Glenn

Consulting Editors – Dennis Awang, PhD, Francis Brinker, ND, Steven Foster, Roberta Lee, MD

Production – Cassandra Johnson, George Solis

FILE: ■ Hibiscus (*Hibiscus sabdariffa*)
■ Uric Acid Excretion
■ Renal Stone Formation

HC 060282-362

Date: October 15, 2008

RE: Effect of Hibiscus on Uric Acid Excretion and Renal Stone Formation

Prasongwatana V, Woottisin S, Sriboonlue P, Kukongviriyapan V. Uricosuric effect of roselle (*Hibiscus sabdariffa*) in normal and renal-stone former subjects. *J Ethnopharmacol.* 2008;117(3):491-495.

Hibiscus (roselle; *Hibiscus sabdariffa*) has been reported to act as a diuretic and a uricosuric substance (one that increases the amount of uric acid in the urine) in patients with urologic disorders. According to Thai traditional medicine, it is used for the treatment and prevention of urinary stones. However, no scientific study has ever reported any anti-lithiasic (stone) and/or uricosuric effects, particularly in subjects with renal stones.

This study was designed to evaluate the effects of hibiscus tea consumption on urinary excretions of uric acid and other compounds related to stone formation in subjects with normal urinary function and those with renal stones. It consisted of 3 periods: baseline (control), tea drinking, and washout. During the tea-drinking period, the subjects were assigned to take a cup of tea twice daily for 15 consecutive days. The tea was prepared from a 1.5-gram tea bag of dried hibiscus calyx (Lampang Medicinal Plant Conservation Assembly, Lampang province, Thailand), steeped in approximately 150 ml of hot water for about 10 minutes. During the washout period, the subjects were without tea for another 15 days. Analysis of the herbal tea infusion for chemical content showed that it contained much less of 4 minerals and 4 organic compounds related to stone formation than found in normal urine.

Eighteen subjects from rural communities in Thailand were divided into 2 groups of 9 subjects each: 1 group of healthy males (non-renal stone, NS) and 1 group with a history of renal stones (RS). There were no significant differences in any of the serum parameters between the 2 groups of subjects or between the baseline and the tea-drinking periods. Most of the urinary baseline parameters were also similar between the 2 groups.

There was no significant difference in serum sodium and urinary volume between the baseline and the tea-drinking periods, thus suggesting that the diuretic effect of this herbal tea was not observed at the dose of 3 g/day.

After the intake of tea, the trend was a non-significant increase in urinary oxalate and citrate in both groups. Furthermore, mean levels of uric acid clearance ($P<0.01$) and uric acid excretion ($P<0.05$) were increased significantly in the RS group. The mean fractional excretion of uric acid was increased significantly in the NS group ($P<0.01$) and the RS group ($P<0.05$). The levels decreased to baseline level at the end of the washout period.

Increased urinary excretion of uric acid is known to be a cause of calcium oxalate stone formation, and this study did not find evidence of any anti-lithiasic effect of hibiscus tea at the dose used such as increases in urinary citrate or magnesium. Therefore, the authors suggest that the intake of hibiscus tea could be a risk leading to urinary stone formation. Yet, they also suggest that the uricosuric effects may be useful as a treatment for hyperuricemia in gout disease, though no lowering of serum uric acid was demonstrated at this dose. This potential stone-inducing effect must be weighed against the positive uricosuric effect that may offer a benefit for subjects with gout.

The intake of hibiscus tea in this study did not cause any toxicity to hepatic and renal tissues. However, because this is a relatively new venue in Western medicine, further studies are warranted to discern potential efficacy and to identify any safety issues.

—*Jennifer Minigh, PhD*

Enclosure: Referenced article reprinted with permission from Elsevier Inc.

The American Botanical Council provides this review as an educational service. By providing this service, ABC does not warrant that the data is accurate and correct, nor does distribution of the article constitute any endorsement of the information contained or of the views of the authors.

ABC does not authorize the copying or use of the original articles. Reproduction of the reviews is allowed on a limited basis for students, colleagues, employees and/or members. Other uses and distribution require prior approval from ABC.