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FILE: ■Butterbur (*Petasites hybridus*)
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■Migraine Headaches

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RE: Butterbur Monograph

Monograph: *Petasites hybridus* (Butterbur). <http://www.thorne.com/altmedrev/petasites6-2.html>.

Petasites hybridus (butterbur) is a perennial shrub found throughout Europe and in parts of Asia and North America. Other common names include *pestwurz* (German), bladderdock, bog rhubarb, and butter-dock. The plant can grow up to three feet high and is usually found in wet, marshy ground; damp forests; and areas adjacent to rivers or streams. Its downy leaves can grow as big as three feet in diameter. It has been used throughout history to treat of plague, fever, asthma, and skin wounds. Current uses include prophylactic treatment of migraines, antispasmodic agent for chronic cough or asthma, prevention of gastric ulcers, and treatment of irritable bladder and urinary tract spasms. Extracts of the rhizomes, roots, and leaves are used. The German Commission E approves butterbur leaves for nervous cramp-like states, pain, colic, headaches, and as an appetite stimulant. The Commission E states that the root may be used as "supportive therapy for spastic pain in the urinary tract."

The main active constituents of butterbur extracts are two sesquiterpenes, petasin and isopetasin. Petasin can reduce spasms in smooth muscle and vascular walls and is thought to be responsible for the anti-spasmodic properties. Therefore, butterbur extracts may be useful in treating urinary disorders, menstrual cramps, migraine headaches, kidney stone disorders, obstruction of bile flow, and other liver or gastrointestinal disorders associated with smooth muscle spasm. Petasin can also inhibit leukotriene synthesis. Isopetasin has a positive impact on prostaglandin metabolism; both leukotrienes and prostaglandins are important components of the inflammation cascade. Thus petasin and isopetasin provide an anti-inflammatory effect. Butterbur extracts also contain volatile oils, flavonoids, tannins, and pyrrolizidine alkaloids (PA).

Butterbur extracts may be effective as a prophylactic treatment for migraines. Two double-blind, placebo controlled clinical studies (total of 128 patients) using 50 mg of a standardized *Petasites* extract twice daily for 12 weeks found: (1) a significant reduction (as much as 60%) in the frequency of migraine attacks compared to placebo, (2) a reduction in the number of days with migraines per month, (3) a decrease in migraine-associated symptoms, and (4) diminished duration and intensity of pain. No adverse reactions were reported in either study.

Butterbur extracts may improve lung ventilation in patients with asthma or chronic obstructive bronchitis. A clinical study tested petasites extract in patients suffering from asthma or chronic obstructive bronchitis. One group of patients took 600 mg petasites extract orally and 3 hours later exhibited an improvement in forced expiratory volume (FEV1). A second group of patients took 600 mg petasites extract orally and 2 hours later

experienced a significant decrease in bronchial reactivity. A third group received 600 mg petasites extract three times daily for 14 days and some patients also received corticosteroids due to disease severity. The patients who received no corticosteroids had the most pronounced results.

At the time of the publication of this article, there were no clinical studies examining the effect of butterbur extracts on gastrointestinal disorders.

Reports on the side effects butterbur extracts are limited. Petasin has been shown to inhibit the production of testosterone in rat testicular cells, but it is not known if this treatment is applicable to humans. The pyrrolizidine alkaloids (PA) may be toxic to the liver and carcinogenic in animals. For this reason, butterbur extracts are available without pyrrolizidine alkaloids. (The PAs are usually removed or greatly minimized in commercial products in Germany, according to stipulations in the Commission E monographs. Chronic ingestion of PAs or ingestion of large amounts have been associated with liver disease, particularly hepatic veno-occlusive disease.) There are no known interactions with either pharmaceutical or over-the-counter anti-inflammatory agents. Use of butterbur extracts during pregnancy and lactation is contraindicated.

Some butterbur extracts are standardized to contain a minimum of 7.5 mg of petasin and isopetasin. The adult dosage ranges from 50-100 mg twice daily with meals. For the treatment of migraines, daily prophylactic administration is recommended for four to six months followed by a slow reduction until migraine incidence begins to increase. Dosage regimens for asthma and gastrointestinal disorders are undefined. More research is needed to ensure efficacy and to provide additional dosing regimens.

—Heather S. Oliff, Ph.D.

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