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FILE: · **Pau d'arco (*Tabebuia* spp.)**
· **Lapacho (*Tabebuia* spp.)**

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RE: Monograph on Pau D'arco

Bone, K. and A. Pengelly. Pau D'arco Part 1 and Part 2. *MediHerb Professional Review,* May 1997, (57) and July 1997 (58).

Pau d'arco has been used for at least a thousand years by the Brazilian Indians, but its use over the centuries spread to other parts of South America and eventually to other parts of the world. Pau d'arco or Lapacho refers to several trees in the Bignoniaceae family, which is indigenous to Tropical America (not South America as stated). The most widely used species in western countries is *Tabebuia impetiginosa* also known as *T. avellanedae* and *T. ipe*. The bark is used for treating skin diseases such as eczema, psoriasis, fungal infections and skin cancers. A tea from the bark of the pau d'arco tree is used as a blood purifier, while the inner bark has been used to treat dysentery, fever, sore throats, wounds, snakebites and cancer. More recently, pau d'arco wood extract has become quite popular in the west, particularly as an antifungal agent in the treatment of chronic candidiasis.

Lapachol, a quinone, has been identified as the "signature" compound in pau d'arco and much of the pharmacological research on pau d'arco is based on it, though its significance has recently come into question. The clinical use of pau d'arco for the treatment of cancer was studied in the 1960's at hospitals in Brazil (Santo Andre hospital) and Argentina (Dr. Ruiz at the Concepcion hospital) and was found to have significant activity against some kinds of cancer following daily oral administration. Professor Accorsi, a botanist (not a medical doctor), stated that pau d'arco eliminates the pain (of cancer) and increases the amount of red corpuscles. Lapachol has demonstrated significant antitumor activity both *in vitro* and *in vivo*. However, other compounds found in pau d'arco, particularly the furonaphthoquinones, may possess significant immune-enhancing and antitumor activities. It has been suggested that the immunostimulating properties of both lapachol and furonaphthoquinones are exhibited only in low concentrations. In large amounts, they may actually have cytotoxic or immunosuppresive effects.

In 1994, the Japanese company, Taheebo Japan Co. Ltd., patented one furonaphthoquinone compound isolated from *T. impetigninosa* as an antitumor agent, based on screening protocols from the National Cancer Institute. It has been found to be an excellent antitumor agent against a wide range of cancers

with minimal side effects. Two clinical studies giving doses of either 20-30 mg/kg or 0.25 to 0.5 grams a day, have been conducted. The first study found that lapachol shrunk tumors and reduced pain for nine cancer patients and three had complete remissions; three patients stopped the treatment due to nausea and vomiting. The second study, which involved 21 leukemia patients, was stopped prematurely because of prolonged prothrombin times that resulted at the doses need to test for antitumor activity. Nausea and vomiting were also a problem.

Several studies have investigated other actions of lapachol and found that it has antimalarial, antiulcerogenic, antiviral, antibacterial and antifungal activity as well.

Despite the widespread use of Pau d'arco preparations, often for lengthy periods, there is no evidence of toxicity in humans. While adverse effects have occurred during clinical trials of lapachol, there is no evidence to suggest that pau d'arco would cause similar effects. However, caution should be taken in pregnancy because of possible abortive and teratogenic action. Patients on anticoagulant therapy should not be prescribed pau d'arco because of the warfarin-like action of naphthoquinones at high doses.

The authors suggest for treating most conditions for which pau d'arco may be effective, a dose of 1.5 to 3.5 g/day or 3 to 7 milliliters per day of a 1:2 extract, 45% ethanol. In cancer therapy, however, pau d'arco is often administered in higher doses. Not all Pau d'arco preparations may contain enough active compounds to be effective. The therapeutic effects of the inner bark are likely to be mild and the herb should not be relied upon as a sole treatment for cancer or infections. A review of pau d'arco products on the Canadian market found no or low levels of lapachol in all of the products. In contrast, two Brazilian products contained relatively high amounts of lapachol. Quality assessment should involve the total naphthoquinone content of the bark, rather than just lapachol. More information is needed about the relative levels of naphthoquinones in the various species that are used as medicines. *—Densie Webb, PhD*

[This summary has been peer reviewed by Kenneth Jones, author of *Pau d'arco: Immune Power from the Rain Fores*. Jones claims that Brazilians were the first to discover the constituent xyliodone (not Dr. Meyer as purported) and the lapachol levels are 1-2% for the wood but not for the inner bark (as purported).]

Enclosure: Reprint permission could not be secured from the publisher.

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