

## Schizandrae chinensis

### Description

*Schizandrae chinensis*, a member of the Magnoliaceae family, has an extensive history of medical use in China. It is considered astringent in nature and is indicated in cases of chronic cough and dyspnea, diarrhea, night sweats, wasting disorders, irritability, palpitations, dream-disturbed sleep, and insomnia.<sup>1</sup> This herb's adaptogenic properties increase resistance to a wide range of physical, chemical, and emotional stressors, while promoting improved overall regulation of physiological processes. Experimental evidence suggests *Schizandrae* functions as a potent antioxidant and has hepatoprotective abilities. Research of the active ingredients is primarily focused on the various lignans and essential oils contained in the dried fruits of *Schizandrae*.

### Clinical Indications

#### Hepatitis

Recent studies from China have found *Schizandrae* and its active components to be effective against viral and chemically-induced hepatitis.<sup>2</sup> *Schizandrae* was shown to lower SGPT levels in patients with chronic viral hepatitis and decrease the hepatotoxicity of carbon tetrachloride in animals.<sup>3</sup> Dimethyl-4, 4'-dimethoxy-5, 6, 5'-6'-dimethylenedioxybiphenyl-2, 2'-dicarboxylate (DDB), a synthetic analogue of schizandrin, is widely used in China as a hepatoprotective drug. While being highly effective at normalizing liver function, it has very few side effects.<sup>4</sup> Pharmacological studies on the bioactive lignans in *Schizandrae* found they increased liver protein and glycogen synthesis, inhibited carbon tetrachloride-induced lipid peroxidation, and had an inducing effect on the cytochrome P-450 enzyme system.<sup>4</sup>

In one study, powdered *Schizandrae* was administered to 102 patients with hepatitis. The overall success rate for normalizing liver enzymes was 76 percent, and in cases where SGPT levels were over 300 IU, the success rate was 72 percent. The average time in which liver enzymes returned to normal was 25 days, and no adverse side effects from the treatment were observed.<sup>1</sup>

#### Antioxidant Activity

Seven of the nine lignans from *Schizandrae* were found to inhibit vitamin C/NADPH-induced lipid peroxidation in rat liver microsomes. Of these compounds, schisanhenol and schizandrin were shown to be more effective than vitamin E at the same concentration.

Schizandrins B and C were found to have strongest scavenging effect against active oxygen radicals.<sup>5</sup> When these compounds were given orally to mice at 15 ml/kg, there was significant reduction in ethanol-induced malondialdehyde formation, with increased superoxide dismutase and catalase activity.<sup>6</sup>

## Anti-Bacterial Effect

Decoctions of Schizandrae were found to possess strong *in vitro* inhibitory action on *Bacillus subtilis*, *Bacillus dysenteriae*, *Bacillus typhi*, and *Staphylococcus aureus*.<sup>7</sup>

## Dosage and Toxicity

Therapeutic dosages are 400-450 mg powdered herb in capsules three times daily or 1-2 mL of a 1:3 ethanol tincture of Schizandrae three times daily. Toxic doses when orally administered to mice were approximately 10-15g/kg. Overdose symptoms include restlessness, insomnia and dyspnea.<sup>1</sup>

## References

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