

IN-VITRO INHIBITORY EFFECTS OF 337 CHINESE HERBS
ON P450 CYP3A4 ENZYME

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ABSTRACT

Background: Although Chinese herbs have been used for several thousand years, there has been much discussion about herb-drug interactions as individuals taking prescription medicine seek complementary and alternative medical treatment. Very little research has been done to assess herb-drug interactions.

Objective: The objective of this study is to assess the in-vitro effects of Chinese herbs on CYP3A4, the p450 drug metabolic enzyme system.

Methods: Three hundred thirty-seven individual Chinese herbs were pooled into four 96-well test plates with empty control wells in the same plates. The herbs were tested at the same time as the controls with an in-vitro biomedical assay, at different concentrations. Data were collected with Analyst, a fluorescent intensity reader, and presented as calculated percentage of inhibition.

Results: Every herb has been tested in 4-8 serial dilutions in duplicate. Among those 337 individual herbs tested, 108 showed more than 50% inhibition as compared to the controls. Three herbs (0.9%) were identified as potent inhibitors, 22 herbs (6.5%) were identified as moderate inhibitors, and 55 herbs (16.3%) may be potential inhibitors.

Key words: Chinese medicine, Chinese herbs, powdered herbs, herb-drug interaction, P450 CYP3A4, HTS, prevention.