

# Cytochrome P3A4 inhibitors and other constituents of *Fibraurea tinctoria*

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**Abstract:** Four new furanoditerpenoids, fibrauretin A (1), fibrauretinolide A (2), epi-fibrauretinolide A (3), and epi-2-palmatoside G (4), and a new ecdysteroid glucoside, fibraurecdyside A (5), together with seven known compounds including two furanoditerpenoids (6 and 7), an ecdysteroid (8), and four quaternary protoberberine alkaloids (9-12) were isolated from the stems of *Fibraurea tinctoria*. The structures of 1-5 were established on the basis of spectroscopic evidence. Among these compounds, palmatine (9) and jatrorrhizine (10) showed inhibitory effects against cytochrome P450 3A4 (CYP3A4) with  $IC_{50}$  values of 0.9 and 2.1  $\mu$ M, respectively. © 2007 American Chemical Society and American Society of Pharmacognosy.

**Index Keywords:** columbamine; cytochrome P450 3A4; cytochrome P450 inhibitor; epi 12 palmatoside g; epifibrauretinolide a; fibleucinoside; *Fibraurea tinctoria* extract; fibraurecdyside a; fibrauretin a; fibrauretinolide a; fibraurinoside; jatrorrhizine; ketoconazole; makisterone a; palmatine; plant extract; stephananine; unclassified drug; article; controlled study; drug isolation; drug structure; enzyme inhibition; *Fibraurea tinctoria*; medicinal plant; Menispermaceae; nonhuman; plant stem; Cytochrome P-450 Enzyme System; Diterpenes; Enzyme Inhibitors; Furans; Menispermaceae; Molecular Structure; Plant Stems; Plants, Medicinal; Vietnam; *Fibraurea tinctoria*

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Chemicals/CAS: columbamine, 3621-36-1; cytochrome P450 3A4, 329736-03-0; jatrorrhizine, 3621-38-3; ketoconazole, 65277-42-1; makisterone a, 20137-14-8; palmatine, 3486-67-7; stephananine, 17369-30-1; CYP3A4 protein, human, 1.14.13.67; Cytochrome P-450 Enzyme System, 9035-51-2; Diterpenes; Enzyme Inhibitors; Furans

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