Cytochrome P3A4 inhibitors and other constituents of Fibraurea tinctoria

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Abstract: Four new furanoditerpenoids, fibrauretin A (1), fibrauretinoside A (2), epi-fibrauretinoside 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 IC50 values of 0.9 and 2.1 μM, respectively. © 2007 American Chemical Society and American Society of Pharmacognosy.

Index Keywords: columbamine; cytochrome P450 3A4; cytochrome P450 inhibitor; epi 12 palmatoside g; epifibrauretinoside a; fibleucinoside; Fibraurea tinctoria extract; fibraurecdyside a; fibrauretin a; fibrauretinoside a; fibraurinoside; jatrorrhizine; ketoconazole; makisterone a; palmatine; plant extract; stepharanine; 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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References: