Crotonkinins A and B and related diterpenoids from Croton tonkinensis as anti-inflammatory and antitumor agents

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Abstract: Cytotoxicity-guided phytochemical investigation of a methanolic extract of Croton tonkinensis afforded two new kaurane diterpenoids (1, 2) and 10 known ent-kaurane-type diterpenoids (3-12). The structures of 1 and 2 were based on analysis of spectroscopic and mass spectral data. Compounds 3-12 were identified by comparison of their spectroscopic and physical data with those reported in the literature. Selected compounds from this plant were examined for cytotoxic and anti-inflammatory activities. Compounds 4 and 9 showed the highest cytotoxic activity against the tested tumor cell lines. Compounds 3, 4, 6, 8, 9, and 11 had IC_{50} values less than 5 ?M and were more potent than the nonspecific NOS inhibitor L-NAME in inhibiting LPS-induced NO production. ?? 2007 American Chemical Society and American Society of Pharmacognosy.

Index Keywords: Croton tonkinensis extract; crotonkinin a; crotonkinin b; diterpenoid; ent 18 acetoxy 7alpha,14beta dihydroxykaur 16 en 15 one; ent 18 acetoxy 7beta hydroxykaur 15 one; ent 18 acetoxykaur 16 en 15 one; ent 18 hydroxykaur 16 en 15 one; ent 1beta acetoxy 7 alpha,14beta dihydroxykaur 16 en 15 one; ent 7 alpha,14beta dihydroxykaur 16 en 15 one; ent 7beta hydroxy 15 oxokaur 16 en 18 ol; ent 7beta hydroxy 15 oxokaur 16 en 18 yl acetate; ent 7beta hydroxy 16 kauren 15 one; ent kaur 16 en 15 one 18 oic acid; kaurane derivative; lipopolysaccharide; methanol; n(g) nitroarginine methyl ester; nitric oxide; plant extract; unclassified drug; animal cell; antiinflammatory activity; antineoplastic activity; article; controlled study; Croton tonkinensis; cytotoxicity; drug isolation; drug structure; Euphorbia; human; human cell; mass spectrometry; medicinal plant; nonhuman; nuclear magnetic resonance spectroscopy; tumor cell; Anti-Inflammatory Agents, Non-Steroidal; Antineoplastic Agents, Phytogenic; Croton; Diterpenes; Drug Screening Assays, Antitumor; Humans; Inhibitory Concentration 50; Lipopolysaccharides; Molecular Structure; NG-Nitroarginine Methyl Ester; Nitric Oxide; Plants, Medicinal; Vietnam; Croton tonkinensis

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