A115 Cytotoxic and chemical principles from Formosan *Casearia membranacea*

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The MeOH extract of over 700 species of Formosan plants have been screened, and the stem of *Casearia mem - branacea* Hance (Flacourtiaceae) showed cytotoxicity against P-388 and A549 cancer cell lines *in vitro*. *C. mem - branacea* is a small evergreen tree distributed in southern Taiwan and Hainan (1). Only one paper had reported containing pentosan, lignin, holocellulose and γ-cellulose that were previously studied from 200 kinds of Formosan hardwoods including *C. membranacea* (2). In the investigation of cytotoxic $CHCl_3$-soluble part led to the isolation of four new compounds, including one butanolide, casealactone (**1**), one chroman, caseamemin (**2**), two diterpenoids, casearimene A (**3**) and casearimene B (**4**), together with 15 know compounds. Among these isolates, casealactone (**1**) showed cytotoxicities against HT-29 and P-388 cancer cell lines *in vitro*. *N-trans*-feruloytyramine (**5**) and *N-cis*-feruloytyramine (**6**) showed cytotoxicity against P-388 cancer cell line. The structures of these compounds were elucidated by spectroscopic analysis.

References: 1. Li H. L., Lo H. C. (1993) Flacourtiaceae in Flora of Taiwan, Editorial Committee of the Flora of Taiwan, Taipei, Taiwan, 2nd. ed., Vol. Ill, pp. 794-796. **2.** Chao, S. C. et a (1971) Tai-Wan Sheng Lin Yeh Shih Yen So Lin Wu Chu Ho Tso Shin Yen Pao Kao 14, 26.

A116 The essential oil of *Matricaria chamomilla* protects against *in vivo* chromosome damage

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Matricaria chamomilla (chamomile) has been used for a long time in the therapy of different diseases including inflammation processes and cancer. However, no studies have been made on its antigenotoxic potential. This work was mainly designed to determine the inhibitory effect of the essential oil of the plant (EO) on the rate of sister chromatid exchanges (SCEs) induced by daunorrubicin in mouse. The EO was mainly constituted by (E)-farnesene, germacrene-D, bisabolol oxides, chamazulene, and other sesquiterpenes. The first step in the research was to evaluate the acute toxicity and the genotoxicity of the EO. No mortality was found with up to 5000 mg/kg and no increase of SCEs was observed with up to 1000 mg/kg. With respect to the antigenotoxic effect in bone marrow cells, we found a dose-dependent inhibitory response of the EO on the mutagen, with a maximum SCE decrease of 76.9% with 500 mg/kg of the mixture; however, no protection was found against the cytotoxicity induced by daunorubicin, according to the measurements of the cellular proliferation kinetics and the mitotic index. With respect to the effect on spermatogonial cells, we also found a dose-response inhibitory activity of the EO, with a maximum effect of 94.7 % with 500 mg/kg. Our study suggests that the EO contains substances (probably antioxidants) that would explain its potent antigenotoxic capacity in both somatic and germ cells of mouse.