

CHAPTER V

CONCLUSION AND RECOMMENDATION

Blumea balsamifera DC. is used in traditional medicine of some oriental cultures. Its constituents which had been reported were Ngai-camphor oil which consisted of 1-borneol, 1-camphor, a little cineol, limonene, sesquiterpene alcohol and phenol-phloracetophenone-diethyl ether (Bose and Dutt, 1940). In this present investigation, the occurrence of two dihydroflavonols, (2R : 3R)-dihydroquercetin-4'-methyl ether, (2R : 3R)-dihydroquercetin-4',7-dimethyl ether was reported. These two dihydroflavonols have never been known as occurring elsewhere either naturally or synthetically. Full characterisation of these two novel dihydroflavonols have been performed and discussed. Further interesting point is to study for some compounds in fraction B.

Concerning chemotaxonomic study, the presence of the novel dihydroflavonols in *Blumea balsamifera* DC. is another available information for further conclusion about chemical constituents in tribe Inuleae of Compositae. From this point, it is recommended to study other *Blumea* species or other genera in tribe Inuleae for the presence of dihydroflavonols.

The pharmacological study is one of the points strongly recommended. Silybin and silydianin from *Silybum marianum* (L.) Gaertn. were found to be antihepatotoxic dihydroflavonols (Wagner et al., 1968).

Other types of flavonoids also have various pharmacological actions. Some cytotoxic principles have been found in flavone and flavonol di and trimethyl ethers of *Eupatorium perfoliatum* L., *E. semiserratum* DC., and *Baccharis sarothroides* A. Gray (Kupchan et al., 1965; Kupchan and Bauerschmidt, 1970). The cytotoxic flavonols are derived from quercetagetin, 6-hydroxyluteolin or 6-hydroxy apigenin and they have methoxyl group in 6-position. Eupatorin, 5,3'-dihydroxy-6,7,4'-trimethoxy flavone, is active against nasopharynx carcinoma. This activity is also shown by 3,4'-dimethoxy-5,7,3'-trihydroxyflavone and centaureidin, 3,6,4'-trimethoxy-5,7,3'-trihydroxyflavone. Flavonol glycoside from *Salidago virgaures* L. has diuretic activity (Heywood, Harborne and Turner, 1977). The particular dihydroflavonols isolated from *Blumea balsamifera* DC. have not been subjected to any investigations from which interesting results might be revealed.