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NOTE

STUDY ON THE CHEMICAL CONSTITUENTS OF *EUONYMUS ALATUS(THUNB.) SLEB.*

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Abstract: This phytochemical study on *Euonymus alatus* (*Thunb.*) *Sleb.* (*Celestrceae*) yielded two compounds: a new compound, 2,3-dihydroxypropanyl hentetracosanate and a known compound: neozeaxanthin A. Their structures were elucidated by spectral evidences.

Key words: *Euonymus alatus*, new compound, 2,3-dihydroxypropanyl hentetracosanate, neozeaxanthin A.
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Euonymus alatus (*Thunb.*) *Sleb.* (*Celestrceae*) was registered early in Shengnong Bencao as "guijianyu", and is a Chinese traditional medicine for treatment of stomachache, wound, amenorrhea, dermatitisrhus and asthma (Wu, 1988). Some steroids, flavinoids, triterpenes, enzymes and sesquiterpenes were isolated from this plant(Yamada et al., 1978; Chen et al., 1986; Tazaki et al., 1984; Sigiura et al., 1982). In our study on the constituents of E. Alatus seeds, a new compound and a known compound were obtained and respectively identified as 2,3-dihydroxypropanyl hentetracosanate (1) and neozeaxanthin A(2).

Compound (1) was isolated as a white amorphous powder, m.p.: 92 - 93 ℃. Its IR absorptions at 3430, 3350 cm^{-1}(- OH) and 1735 cm^{-1}(C = O) together with three oxygenated C-atoms at δ 62.2(CH_2), 62.7(CH_2) and 72.8 (CH), one carbonyl group at δ 174.5 and the unique methyl group at δ 14.8 suggested that compound (1) is a 2,3-dihydroxypropanyl ester. Its ^{1}HNMR spectrum showed signals at δ 4.15 - 4.40 (3H, m), 3.72(2H, d, J = 5Hz) for the glycerol moiety. The integration of signals between δ 1.20 and 1.40 showed 74 protons. By combining other signals in ^{1}HNMR at δ 2.30 (10^{-6}m) (2H, m, $-COCH_2-$), 1.63(2H,t, $-COCH_2CH_2-$) and 0.87(3H,t, - Me), the acid moiety with a chain of 42 carbons was postulated. This conclusion could also be derived from the significant ion peak at m/z 680 in EIMS. Thus, compound (1) was assigned as 2, 3-dihydroxypropanyl hentetracontanate. It is a new compound whose detailed spectral data shows as follows: MS m/z: 680 (M^+), 674, 646, 619, 606[$C_{40}H_{81}COOH$]$^+$, 605, 493, 481, 467, 424, 313; ^{1}HNMR δ: 3.72(2H, d, J = 5 Hz, 3' - H], 4.15 - 4.40 (3H, m, 1' - H and 2' - H), 2.30(2H, m, 2 - H), 1.63 (2H, t, J = 7.5 Hz, 3 - H), 1.20 - 1.40 (74H, m), 0.87(3H, t, J = 7 Hz, - Me); ^{13}CNMR δ: 62.2(C - 1',t), 62.7(C - 3',t), 72.8(C - 2,d), 174.5(C = O), 34.8(C - 2', t), 32.2, 29.8 - 30.4(total 34 × CH_2), 27.9, 25.8, 23.3, 14.8(- Me)).

Compound (2) was isolated as a red amorphous powder whose molecular formula was deduced to be $C_{40}H_{56}O_2$ from FABMS (Fast Atom Bombardment Mass Spectrometry) and ^{13}CNMR (DEPT). Because there are only 15 resonant signals in ^{13}CNMR (DEPT), the molecular of (2) must be symmetric with two equal moieties. The signals at δ1.07 (6H, s, 2 × CH_3), 4.00 (1H,m), 1.75 (3H,s, CH_3) and 1.99 (6H, s, 2 × CH_3) indicated the presence of ten methyl groups. On the basis of spectral data, the IR absorption at ~3300 cm^{-1} suggested the presence of the -OH groups in the molecular of this com-

pound, on the basis of ^{13}CNMR and FABMS, two hydroxy groups were inferred. On the basis of spectral data, (1) was deduced as neozeaxanthin A, and it is a known compound(Szabolcs, 1976).

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