

The secoiridoids (VI-VIII) are based on methyl oleoside [3]. On saponification (2% NaOH) glycosides (VI), (VII), and (VIII) formed oleoside and the corresponding phenolic fragments - 3,4-dihydroxyphenylethanol (from compound (VI)), 4-hydroxyphenylethanol (tyrosol) [from (VII)], and salidroside (tyrosol 4-O-glucoside) [from (VIII)].

This is the first time that compounds (I-VIII) have been isolated from Amur lailac, but they have been described previously for the bark of common lilac [2, 4, 5].

It must be mentioned that the bark of Amur lilac contained a larger amount of iridoids - oleuropein (VI) and ligustroside (VII) - than common lilac, but no forsythiaside (an isomer of acteoside) was detected.

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#### PHENOLIC COMPOUNDS OF THE BARK OF *Eleutherococcus senticosus*

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There is no information in the literature on the chemical composition of the bark of prickly eleutherococcus, *Eleutherococcus senticosus* Masim, fam. Araliaceae, although the rhizomes with roots of this plant have been studied fairly thoroughly in the chemical respect [1-3]. In view of this, a comparative chemical study of the bark and roots of prickly eleutherococcus appeared of interest.

The air-dry bark of the stems of this plant, gathered in May, 1987, in Maritime Territory, was extracted with aqueous alcohol at the boil, and the evaporated extracts were chromatographed on silica gel L 40/100 using as eluents mixtures of chloroform and methanol in various ratios. The compounds were purified by recrystallization or rechromatography on silica gel, polyamide, and Sephadex SL-20. This led to the isolation of nine phenolic compounds - phenylpropanoids (I-IV), coumarins (V-VII), and phenolic carboxylic acids (VIII and IX).

The substances isolated were identified on the basis of UV, IR, and mass spectra and the results of chemical transformations, and also by direct comparison with authentic specimens of some of the substances.

Coniferin (I). White crystals with the composition  $C_{16}H_{22}O_8$ , mp 184-185°C (alcohol),  $\lambda_{\max}^{\text{MeOH}}$  258, 266 (sh.) nm.

Syringin (II) (eleutheroside B). White acicular crystals with the composition  $C_{17}H_{24}O_9$ , mp 190-192°C (water),  $\lambda_{\max}^{\text{MeOH}}$  266 nm.

Compounds (I) and (II) were cleaved under the action of  $\beta$ -glucosidase with the formation of glucose and the aglycons - coniferyl alcohol ( $M^+$  180) and sinapyl alcohol ( $M^+$  210), respectively.

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Compound (III). White amorphous substance with the composition  $C_{22}H_{32}O_{13}$ ,  $\lambda_{\max}^{\text{EtOH}}$  266 nm. Compound (III) was not cleaved by  $\beta$ -glucosidase, but on acid hydrolysis it gave glucose and apiose.  $^1\text{H}$  NMR and mass spectroscopy enabled this compound to be identified as sinapyl alcohol 4-O-(2'-O- $\alpha$ -L-apioxy- $\beta$ -D-glucopyranoside), which has been isolated previously from mistletoe [4].

Eleutheroside D (IV) (syringaresinol 4,4'-di- $\beta$ -D-glucopyranoside). White acicular crystals with the composition  $C_{33}H_{38}O_{13}$ , mp 255-257°C (aqueous alcohol),  $\lambda_{\max}^{\text{EtOH}}$  234, 271 nm,  $[\alpha]_D^{23}$  -6.1°C (0.4; 50% ethanol).

Scopoletin (V) (7-hydroxy-6-methoxycoumarin). White acicular crystals with the composition  $C_{10}H_8O_4$  ( $M^+$  192) mp 203-205°C (water),  $\lambda_{\max}^{\text{EtOH}}$  229, 260, 298, 346 nm.

Isofraxidin (VI) (7-hydroxy-6,8-dimethoxycoumarin). Light yellow crystals with the composition  $C_{11}H_{10}O_5$  ( $M^+$  222), mp 146-149°C (aqueous alcohol).

Eleutheroside B, (VII) (isofraxidin glucoside). Light yellow acicular crystals with the composition  $C_{17}H_{20}O_{10}$ , mp 211-213°C (aqueous alcohol),  $\lambda_{\max}^{\text{EtOH}}$  230, 298, 340 nm.

Protocatechuic Acid (VIII). White acicular crystals with the composition  $C_7H_6O_4$ , ( $M^+$  154), mp 199-200°C (water).

Protocatechuic Acid 3'-O- $\beta$ -D-Glucopyranoside (IX). Light yellow crystals with the composition  $C_{13}H_{16}O_9$ , mp 187-190°C (aqueous acetone). Compound (IX) was cleaved under the action of  $\beta$ -glucosidase with the formation of protocatechuic acid (VIII) and glucose, the attachment of which to the 3'-OH group of the aglycon (VIII) was shown by UV and IR spectroscopies.

This is the first time that compounds (III), (V), (VIII) and (IX) have been isolated from prickly eleutherococcus, while the other substances (I, II, IV, VI, and VII) have been described previously for the rhizomes of this plant [1-3].

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