FLAVANS OF THE RHIZOMES OF *Potentilla erecta*

V. B. Omurkamzinova and M. S. Erzhanova

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The rhizomes of *Potentilla erecta* (tormentilla cinquefoil) are used in medicine [1]. Phytochemical and pharmacognostic investigations of other species of cinquefoil (white cinquefoil, silver cinquefoil, creeping cinquefoil) have shown that they may also be of interest for medical practice [2-4].

A chemical study of the epigeal mass of primrose cinquefoil, bush cinquefoil, and tansy-leaved cinquefoil has shown the presence in them of hydrolyzable tanning substances and flaonols and their glycosides [5-7]; flavan-3-ols [7] and leucoanthocyanidins [8] have been detected in some species. The roots of many species of cinquefoil contain condensed tanning substances.

We have investigated for their flavan content the rhizomes of tormentilla cinquefoil (pharmacopoeia raw material) and primrose cinquefoil (*P. chrysantha* Trev.) gathered in the Kurdai region of Dzhambul province. The total extractive substances were obtained by treating the raw material with methanol.

By two-dimensional paper chromatography using specific revealing agents, not less than eight substances of polyphenolic nature were detected in the methanolic extract from tormentilla cinquefoil and 12 from primrose cinquefoil, five of them belonging to the group of mono-, di-, and polymeric flavans.

Substances (I) and (II) were isolated by partition chromatography on silica gel (with ether as the eluent) and by adsorption chromatography on polyamide (with chloroform–methanol, 7:3).

From their physical constants, the results of IR, UV, and PMR spectroscopy, and the products of acid hydrolysis and enzymatic cleavage and a comparison with literature information, substance (I) was identified as 3',4',5,7-tetrahydroxyflavan 3-O-gallate with the 2R, 3S configuration of the asymmetric centers – (+)-catechin gallate [9] – and substance (II) as a dimer based on (+)-catechin with the C_4–C_8 form of the interflavan bond – the B_3 dimer [10].

This is the first time that (+)-catechin gallate and the B_3 dimer have been isolited from plants of the cinquefoil genus.

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