

2. N. P. Yuldasheva, D. A. Rakhimov, and E. S. Kondratenko, *Khim. Prir. Soedin.*, 172 (1985).

## PHENOLCARBOXYLIC ACIDS OF THE *Onobrychium* SECTION OF THE GENUS

### *Astragalus*

N. N. Guzhva, M. S. Luk'yanchikov,  
L. I. Dranik

UDC 547.814.5:582.739

We have previously [1, 2] reported that total preparations have been isolated from the epigeal parts of milk vetches of the *Onobrychium* Bunge section of the *Astragalus* genus (*Astragalus sevagensis* Grossh., *A. circassicus* Grossh., *A. levieri* Freyn Ö.B. L., *A. goktschaicus* Grossh., *A. bungeanus* Boiss., *A. interpositus* Boriss., and *A. arguricus* Bunge) and, later, a high antimicrobial activity in relation to pathogenic cocci and coli bacteria was established.

A preliminary investigation (paper chromatography) of the total preparations of the milk vetches under investigation showed the presence in them not only of flavonoid compounds but also of phenolcarboxylic acids.

In view of the high antimicrobial properties of phenolcarboxylic acids [3], it may be assumed that the manifestation of this activity by the total preparations from milk vetches is due just to the presence in them of these acids, and these have now become an object of our study.

The total substances were isolated and purified as described in [4] and were then deposited on a column of polyamide sorbent. Elution was performed with hexane, hexane-ethyl acetate (9:1, 8:1, 7:1, etc.), and individual substances (1-5) were then crystallized from aqueous and aqueous ethanolic solutions.

The fractions were monitored by paper chromatography in the following systems: 1) 2%  $\text{CH}_3\text{COOH}$ , and 2) butan-1-ol- $\text{CH}_3\text{COOH}$ - $\text{H}_2\text{O}$  (4:1:5). A comparison of chromatographic mobilities, differentiating staining with a stabilized diazonium salt, and the results of acid hydrolysis (2 N HCl, 30 min), of elementary analysis, and of UV spectroscopy, and also a comparison with authentic samples enabled the acids isolated to be identified as the known acids p-hydroxybenzoic, caffeic, chlorogenic, ferulic, and 3-feruloylquinic.

### LITERATURE CITED

1. N. N. Guzhva, M. S. Luk'yanchikov, and A. L. Kazakov, *Khim. Prir. Soedin.*, 411 (1985).
2. N. N. Guzhva, M. S. Luk'yanchikov, and A. L. Kazakov, *Khim. Prir. Soedin.*, 529 (1983).
3. S. I. Zelepukha, *The Antimicrobial Properties of Plants Used in Fruits* [in Russian], Kiev (1973).
4. A. L. Kazakov, M. S. Luk'yanchikov, S. F. Dzhumyrko, V. A. Kompansev, *Khim. Prir. Soedin.*, 388 (1981).