Species	Site and date of collection	Vegetation period	Epigeal part	Leaves	Roots
H. ramosissimum	Ustyurt, Shurukh meteorological station, KK ASSR* 13–19 July 1966	End of vegetation period	0.008	0.12	0.19
H. bungei	Ravshan state farm, KK ASSR 12 June 1963, 9–12 August 1966	Flowering period, end of vegetation period	0.04 0.1	0.01 0.03	0.13 0.09
H. versicolor	Ustyurt, Shurukh meteorological station, KK ASSR 15 July 1963	Flowering period	0.02	0.05	0.03

*Kara-Kalpakskaya Autonomous Socialist Soviet Republic.

The alkaloids were isolated by extraction with chloroform. The roots of H. ramosissimum collected at the end of the vegetation period yielded not only dictamnine and skimmianine but also evoxine, which was identified by its IR and UV spectra and by a mixed melting point with an authentic sample from H. perforatum [2].

When the total alkaloids from H. bungei were separated on alumina, four bases were obtained: skimmianine, dictamnine, robustinine with mp 231–232° C, identified by its IR and UV spectra and a mixed melting point with an authentic sample from H. foliosum [3], and a base with mp 83° C which has not been studied because of the small amounts available.

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SYNTHESIS OF A NUCLEOTIDO (P→N) PHENYLALANINE AND ITS PEPTIDES

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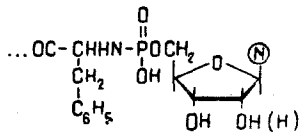
In order to study the chemical and biochemical properties of amino acid (peptide) derivatives of nucleotides of the phosphoramide type, we have synthesized a number of compounds of this class in which the nucleotide moiety is represented by ribo- and deoxyribonucleotides and the amino acid moiety by phenylalanine and its peptides with the general structure



N = uracil, adenine, guanine

Compound*	Yield %	R_f value in the following systems***					Rel. mobility on electrophoresis, g		Nucleotide: amino acid ratio
		1	2	3	4	5	pH4.5	pH8.9	
Deoxyuridylyl(5'→N) phenylalanine	50	0.58	0.45	0.80	0.40	—	0.80	0.50	1 : 0.96 : 0.89**
Deoxyadenylyl(5'→N) phenylalanine	60	0.60	0.44	0.76	0.36	—	0.80	0.45	1 : 0.98 : 0.95**
Uridylyl(5'→N) phenylalanylglycine	65	0.27	0.17	0.50	0.11	—	0.75	0.48	1:0.98 : 0.77 : 0.74**
Uridylyl(5'→N) phenylalanylvaline	65	0.63	0.43	0.84	0.40	—	0.70	0.48	1 : 0.98 : 0.83 : 0.75**
Guanylyl(5'→N) phenylalanylglycine	44	0.30	—	0.37	—	0.42	—	0.30	1:0.95 : 0.92
Guanylyl(5'→N) phenylalanylvaline	52	0.23	—	0.33	—	0.29	—	0.30	1 : 0.93 : 0.88
Guanylyl(5'→N) phenylalanylvalylalanine	55	0.27	—	0.35	—	0.40	—	0.32	1:0.97 : 0.96 : 0.93

*In all compounds the carboxy group of the terminal amino acid was methylated.

**The nucleotide: phosphorus: amino acid ratio was determined.

***Solvent systems: 1) iso-$C_3H_7OH-NH_4OH-H_2O$ (7:1:2); 2) n-$C_4H_9OH-H_2O-CH_3COOH$ (4:5:1); 3) C_2H_5OH – 1M. CH_3COONH_4 (5:2); 4) tert-C_4H_9OH – 1N. NH_4OH-H_2O (7:0.1:3); 5) iso-C_3H_7OH – 1% $(NH_4)_2SO_4$ solution (2:1).

The synthesis was carried out by the pyrophosphate method which, as has been shown [1–4] is the most effective, particularly for the synthesis of peptide derivatives. In the production of derivatives of guanosine 5'-phosphate, the solvent used was dimethylformamide. To neutralize the hydrochlorides of the di- and tripeptides, Dowex-1 (OH) was used for the first time instead of tri-n-butylamine. The use of an ion exchange resin enables an undesirable excess of amine in the reaction mixture to be avoided and the yield of product to be somewhat improved. The characteristics of the compounds obtained are given in the table.

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HYDROLYSIS OF FLAVONOID GLYCOSIDES BY FUNGUS ENZYMES

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Hydrolytic enzymes are used fairly frequently to split flavonoid glycosides in determining their structure. Nevertheless, enzymes are sometimes used without account being taken of their substrate specificity or the optimum conditions for their action. Only isolated studies have been devoted to these questions. Thus, for example, Harborne [1] studied