

228°C (from ether), R_f 0.69 in the 1-butanol-acetic acid-water (20:1:20) system, the spots being revealed with 4% alkali. Yield 0.05%, composition $C_9H_{12}O_5$. The IR spectrum in the region of the absorption of active hydrogen had a broad band (3000-3600 cm^{-1}) which can be assigned to hydroxy groups forming a strong hydrogen bond with other functional groups. Bands characteristic for a lactone group in conjugation with a double bond and an aromatic ring ($Ar-C=C-C-O-$) appeared at 1620 and 1690 cm^{-1} .

The substance was readily soluble in alkalis, giving a pink coloration. It is not reported in the literature.

Chromatography of the ethereal extract on alumina yielded 0.1% of a yellow crystalline substance with mp 236-237°C (from ether). The chemical study of these substances is proceeding.

REFERENCES

1. N. P. Kir'yalov, ZhOKh, 8, 740, 1938.
2. N. P. Kir'yalov, ZhOKh, 9, 163, 1941.
3. A. A. Fedorov and N. P. Kir'yalov, Rastitel'noe syr'e SSSR, 1, 1950.
4. Flora UzSSR, 4, 82, 93, 1959.

28 July 1967

Tashkent Pharmaceutical
Institute

SECOND ALL-UNION CONFERENCE ON THE CHEMISTRY OF NUCLEOTIDES

N. I. Sokolova

Khimiya Prirodnykh Soedinenii, Vol. 4, No. 1, pp. 68-69, 1968

The Second All-Union Conference on the Chemistry of Nucleotides, set up on the initiative of Moscow State University, the Institute of the Chemistry of Natural Compounds, the Novosibirsk Institute of Organic Chemistry, the Siberian Division AS, and the Councils on the Problems of Molecular Biology and Bioorganic Chemistry was held at Moscow, 21-23 June 1967.

The Conference was attended by about 70 persons, representing the main scientific centers of the USSR. The object of the conference was the exchange of information on investigations being carried out in the Soviet Union on the chemistry of the nucleotides, the development of coordinated programs, and recommendations on the range of reagents required.

The conference took the form of short informative lectures which were followed by discussions on the subject concerned.

One of the main problems of the chemistry of nucleotides at the present stage is the development of convenient methods for obtaining oligonucleotides, since such synthetic models are now widely used in the study of complex biochemical processes.

In recent years, definite advances have been achieved in the chemical synthesis of the oligonucleotides in several Russian laboratories. For example, methods have been developed for obtaining ApUp, UpUp, UpAp, etc. (Institute of Macromolecular Compounds, Leningrad). Chemical methods for the synthesis of di- and trinucleotides have also been worked out at the Institute of Biological Physics (Pushchino-on-Oka) and at Moscow University.

However, all the lecturers stated that with an increase in the length of the nucleotide chain, even in the synthesis of trinucleotides, the yields of the products fell to 10-15%. Consequently, the search for convenient methods of condensation and of obtaining oligonucleotides with better yields continues to remain one of the most important problems in the chemistry of the nucleotides. In view of this, the participants in the conference showed great interest in reports on the enzymatic synthesis of the oligonucleotides. In the presence of pancreatic ribonuclease it has been possible to obtain the corresponding dinucleotides and dinucleoside phosphates from uridine and cytidine 2',3'-cyclophosphates with yields of 50-60% (Institute of Macromolecular Compounds, Leningrad). A number of di- and trinucleotides has been obtained with the aid of guanyl ribonuclease from actinomycetes (Institute of Molecular Biology, Moscow).

A short communication was heard on the synthesis of oligonucleotides on polymeric substrates (Moscow University). The high yields, the purity of the product, and the rate of the reaction all show that this method is very promising.

A principle of creating modifying agents containing an oligonucleotide grouping which ensures the direction of the action of the modifying groups is interesting (Novosibirsk Institute of Organic Chemistry).

At the conference, methods for obtaining various derivatives of the nucleotides and nucleosides with the object of using them in oligonucleotide synthesis were also widely discussed, in particular the alkoxyalkyl protective groups developed in the Institute of Biological Physics.

In addition, information was given on the influence of the structure of the amino acid moiety on the properties of the phosphoramidate bond in the nucleotidepeptides (Moscow University). At this Second All-Union Conference, great attention was devoted to the chemistry of the nucleotide derivatives: vitamin B₁₂ (All-Union Scientific Research Institute for the Vitamin Industry, Moscow) and nucleoside diphosphate sugars (Institute for the Chemistry of Natural Compounds, Moscow). A considerable increase in the volume of experimental and theoretical investigation in this field was noted. However, in addition to definite advances in the study of the chemistry of nucleotides there has also been some lack of progress. The conference adopted a series of recommendations for the elimination of these defects.

The participants at the conference discussed the proposed nomenclature of the nucleotides and their derivatives the definitive decision of which was taken at the Seventh International Congress of Biochemistry, Tokyo (August 1967). Strict adherence to this nomenclature in future was recommended.