

MOSCOW MEETING REPORT

AUTOMATED CHEMICAL SYNTHESIS OF PEPTIDES AND DNA FRAGMENTS

A two day seminar on the automated chemical synthesis of peptides and DNA fragments was scheduled for 14 and 15 February at the Institute of Molecular Biology of the Academy of Sciences of the U.S.S.R. in Moscow. The original plan called for lectures and workshops on DNA and peptide synthesis. However, because of the funeral of Yuri Andropov, one session was cancelled. The lectures on DNA and peptide synthesis were given on 15 February and the workshops were incorporated into the HOSPITALMED Exhibition held later in February.

N. Gnuchev (Institute of Molecular Biology, Moscow) was the host for the foreign attendees and opened the meeting. H. G. Gassen (Institute for Organic Chemistry and Biochemistry, Technical University Darmstadt, W. Germany) gave an extensive presentation on the chemical synthesis of DNA fragments and their use in genetic engineering. He described a new approach for identifying and sequencing genes utilizing a micro protein sequencing technique developed in his laboratory, and discussed new, rapid methods for DNA synthesis.

L. E. Barstow (Vega Biotechnologies, Inc., Tucson, AZ) described new methods for automation of DNA chemical synthesis and, in a later presentation, spoke on automated methods for polypeptide synthesis. K. Fisher (Biotronik, Inc., Frankfurt, W. Germany) completed the session with a lecture on automated methods for peptide and amino acid separations and determinations.

Approximately 80 scientists from about 20 different institutes of the Academy of Sciences attended the seminar. Representatives from institutions outside the Moscow region were expected to attend, but did not because of the uncertainty of scheduling. It was obvious from the question-and-answer periods and from informal discussions that the Soviet scientists are accomplished protein and DNA chemists. They were enthusiastic about their work and had obviously read the recent literature in their field.

The guests were treated to a tour of the Institute of Molecular Biology and the Institute for Bioorganic Chemistry. The scientists in the laboratories were very open about their work and were proud of their generally well equipped facilities. I was particularly surprised to see the number and variety of instruments in the

laboratories. Most instrumentation was from the U.S. or Western Europe, with a few very simple devices manufactured in the U.S.S.R. or Eastern Bloc countries.

The research programs focus on plant viruses and preparing the calcitonin gene in hope of manufacturing human calcitonin by fermentation techniques, and a number of the laboratories use DNA sequencing and DNA synthesis technologies. The DNA and peptide synthesis is currently being done by tedious manual methods and the Soviet scientists were proud of their dedication, describing many 16–20 hour days spent on a synthesis.

Being a Westerner in the Soviet Union is truly a unique experience. Even though the meetings were very friendly, conversations were very one-sided: the Soviet scientists primarily asked questions and the Westerners answered them. Even the information presented in discussions of their work had obviously been approved in advance. The foreigners doing business in the U.S.S.R. con-

gregate in the bars of the few major Moscow hotels in the evening. If the bar population is representative of the level of business activity of each country in Russia, I would rank them in order of importance as the Finns, Japanese, Swedes, Dutch, other Western Europeans, then Americans.

Biotechnology is as popular with the press in the Soviet Union as it is in the U.S. English newspapers printed in Moscow were available in the hotels; each day there were several scientific articles, and they were predominantly about biotechnology. The emphasis was on health care, plant sciences, and methods for improving the environment. The Soviets have made a strong commitment to biotechnology because it offers a means for providing an abundant supply of food as well as new, low-cost manufacturing processes in the heavy chemical and energy industries.

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