



REPORT ON AN INTERNATIONAL SYMPOSIUM, BERLIN (WEST),
31 OCTOBER—4 NOVEMBER 1977

The symposium, held in co-operation with the World Health Organization, was attended by 314 participants from 33 countries and 3 international organizations. Sixty-eight papers were presented in 9 sessions.

Radioimmunoassay and Related Procedures in Medicine

Radioassay procedures for the measurement of substances such as hormones, vitamins and drugs in the body fluids and tissues, above all in the blood, are now in the front rank of medical applications of radioactive materials. These procedures, which are carried out on specimens in the medical laboratory and do not involve the administration of any radioactive material to the patient, are now widely employed in the routine diagnosis and investigation of disease, whilst their use in research has led to important advances in many branches of medicine.

Typical of radioassay methods is radioimmunoassay, which depends on the antigen-antibody reaction between the substance to be measured and the antibodies in an antiserum against that substance produced in a guinea-pig, rabbit, sheep or other animal. The importance of radioimmunoassay was recently underlined by the award of the Nobel Prize in medicine for 1977 to Dr. Rosalyn Yalow of the United States of America for her pioneer work on the method over the past two decades, particularly in relation to the measurement of protein hormones.

This symposium was the third on the subject to have been sponsored by the IAEA. The first took place in Vienna in 1969 and the second in Istanbul in 1973. During the four years from 1973 to 1977, the growing commercial availability of reagents and kits for radioassays brought them into routine use. This in turn led to an increasing awareness of the need for assay standardization and quality control and to an increasing attention to techniques of assay data analysis. The burgeoning demands made on assay services stimulated interest in the possibilities for automation of assay procedures. Promising new methods were developed, notably solid-phase radioassay and radioreceptor assay. At the same time there was a resurgence of interest in alternative assay methods not based on the use of radioactive materials, which made a critical re-examination of the entire subject desirable. The symposium provided opportunities for an exchange of information of all of these topics.

The introductory lecture by Dr. W.D. Odell of the USA, entitled "We Don't Look at Hormones the Way We Used to", drew attention to the very great conceptual changes that have arisen in relation to hormones in recent years, largely as a result of the applications of radioassay procedures in endocrinology. Dr. Odell emphasized that bioassay, radioimmunoassay, radioreceptor assay and the consideration of molecular structure provide four distinct approaches to the quantification of hormones and that it is not to be expected that these approaches will yield comparable results. However, the results taken together may permit an understanding of disease not previously possible.

Individual sessions on assay methodology were devoted to reagents, automation, data analysis, and alternatives to radioassay. Individual sessions on applications were devoted to assays for steroids and other small molecules, assays for thyroid-related hormones and assays for peptides. Each session was introduced by an invited review paper summarizing recent advances in the particular subject field.

The subject of assay standardization and quality control was considered at length in two round-table discussion sessions, one on assay design, standardization and within laboratory quality control and one on external quality control, arranged in co-operation with the World Health Organization Special Programme of Research in Human Reproduction. These sessions evoked much interest and the importance of the concepts and techniques presented therein in the development of effective assay services was recognized.

The proceedings of the symposium, comprising the papers presented and the edited discussions, will be published by the IAEA.



REPORT ON AN INTERNATIONAL SYMPOSIUM, WAGENINGEN,
THE NETHERLANDS, 21–25 NOVEMBER 1977

The meeting was attended by 195 scientists from 39 Member States and 4 international organizations. Seventy-three papers were presented in 8 sessions.

Food Preservation by Irradiation

As shortages of food and energy still continue to constitute the major threats to the well-being of the human race, all actions aiming at overcoming these problems must be assigned vital importance. Of the two complementary ways of solving the food problem (i.e., increasing the production of food and decreasing the spoilage of food) a novel method designed to contribute to the latter purpose has been discussed at this symposium hosted by The Netherlands and held under the aegis of the Food and Agriculture Organization of the United Nations, the International Atomic Energy Agency and the World Health Organization. Progress made since the last symposium of this kind (Bombay, India, 1972: *IAEA Bulletin* Vol. 15 No. 1) was reviewed from the technological, economic and wholesomeness points of view by participants from 39 countries (60% of the latter were of the developing world).

From the reports presented on the use of radiations to control physiological changes in plants, feasibility of radiation preservation of potatoes, onions, garlic, as well as of some tropical and subtropical fruits (mangoes, papayas, litchis and avocado) was confirmed. For potatoes, onions and mangoes, optimal conditions of treatment and storage were established on a larger scale, combined with sizeable consumer trials. Combinations of ionizing radiation