

## EDITORIAL

### THE LATEST ACHIEVEMENTS IN DIAGNOSTICS AND THERAPY – THE ERA OF GLOBAL ANALYTICAL METHODS

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The symposium entitled *The Latest Achievements in Diagnostics and Therapy – The Era of Global Analytical Methods* was organised on the occasion of the 40<sup>th</sup> anniversary since the founding of the Cabinet for the Research and Standardization of Immunological Substances, which was established four decades ago by Drago Ikić, Fellow of the Croatian Academy (F.C.A.), and is currently active within the Department of Medical Sciences of the Croatian Academy of Sciences and Arts. Apart from the Academy Department of Medical Sciences, co-organisers of the symposium were the Division of Molecular Medicine of the Ruđer Bošković Institute from Zagreb and the Department of Biotechnology of the University of Rijeka, which emphasises both the importance of the Cabinet and the long and successful co-operation among several Croatian scientific and educational institutions active in the field of immunological research.

As early as over forty years ago, Prof. Dr. Drago Ikić recognised the importance of immunology. In 1970, wishing to further strengthen the already existing co-operation between the Department of Medical Sciences of the Croatian Academy of Sciences and Arts and the Institute of Immunology, then headed by him, Prof. Dr. Ikić initiated the forming of, first, the Section, and later, the Committee for Biological Substances.

The Institute for the Research and Standardization of Immunological Substances was founded within the Research Centre of the Croatian Academy of Sciences and Arts in 1982; in the same year, it became the Inter-Academic Committee for Biological Substances. The same Inter-Academic Committee ceased to be active as the Croatian War of Independence broke out in 1991; three years later, the Institute was transformed into the Cabinet for the Research and Standardization of Immunological Substances within the Department of Medical Sciences of the Croatian Academy of Sciences and Arts. The very existence of the Cabinet should primarily be credited to Drago Ikić, F.C.A.

As early as in the late 1970s, Drago Ikić, F.C.A., as the head of the Institute of Immunology, was among the first scientists in Europe to begin both producing the Interferon and successfully conducting the projects of its application in the adjuvant treatment of skin tumours. This activity was facilitated thanks to the fruitful co-operation between the Cabinet and the Department of Oncology and Nuclear Medicine of the *Sestre milosrdnice* University Hospital, headed by Šime Spaventi, F.C.A., and it served to lay the groundwork for applying immunotherapy in the treatment of the said diseases. As a result of this co-operation, other types of immunotherapy in the treatment of malignant diseases were applied simultaneously at the Department of Oncology and Nuclear Medicine and worldwide; these were the non-specific immuno-therapeutic agents: BCG, Levamisol and *Corynebacterium parvum*. In 1982, within the said projects, the Centre for Clinical and Experimental Immunology, with Dragan Dekaris and Vlatko Silobrić from the Institute of Immunology, both Fellows of the Croatian Academy, as advisers, was established as a part of the Department of Oncology and Nuclear Medicine. The result thereof was the realisation of successful co-operation with relevant European organisations, under the patronage of which immunotherapy-related projects (particularly those dealing with melanoma treatment) are conducted. The current Reference Centre for Melanoma of the Department of Oncology and Nuclear Medicine and the Dermatovenerological Department of the *Sestre milosrdnice* University Hospital is partly based on the work of Drago Ikić, F.C.A., and his Cabinet.

Thanks to the vision and the activity of Drago Ikić, F.C.A., which were recognised and accepted by his associates, it was made possible for the immunological substances – following the research and the standardization – to be applied, first in medical research, and subsequently in standard clinical practice, within the shortest possible period of time.

In the period between 1968 and 1979, Prof. Dr. Ikić had organised twelve international symposia in Zagreb in co-operation between the then Yugoslav Academy of Sciences and Arts and the Institute of Immunology, which addressed immunological topics: several symposia on the Interferon; a symposium on vaccines against morbilli, poliomyelitis and pertussis; a symposium on combination vaccines; a symposium on the vaccine against influenza; etc. Together with the World Health Organization experts, many distinguished international professionals participated in the work of the said symposia as well. In the early days of discovering and researching the vaccines that are today applied routinely, the Zagreb symposia had significantly contributed to improving scientific knowledge in the field of immunology.

The topic addressed at the first international symposium held in 1963, as well as the one held in 1968 and the fifth held in 1970, were human diploid cells, WI-38

(Hayflick Moorhead 1961), as a new viral vaccines production substrate. The viral vaccines production substrate is as important as the vaccinal virus itself. Following the conduct of versatile laboratory and epidemiological research, Croatia was the first country in the world to adopt, in 1963, human diploid cells for routine, mass production and application of live attenuated oral vaccine against poliomyelitis (Koprowski strain). Slovenia adopted the said vaccine against poliomyelitis in 1966. Subsequent long-lasting and versatile research done regarding the live attenuated vaccine against morbilli for parenteral application confirmed that human diploid cells contain no latent, concealed, hazardous agents, and that they facilitate the multiplication of stabile vaccinal anti-morbilli viruses of high concentration. This led to the introduction of attenuated vaccine against morbilli, (Edmonston-Zagreb strain 1968), intended for mass parenteral application in Croatia; subsequently, other live attenuated viral vaccines were introduced as well. Thereby, Croatia adopted, recognised and levelled human diploid cells (serially multiplied) with animal primary cells (not serially multiplied) in the production and the application of live attenuated vaccines, both orally and parenterally.

Several years later, the World Health Organization adopted and recognised both substrates used for the production and application of viral vaccines.

The greatness of Prof. Dr. Ikić in the field of immunology was recognised and saluted by numerous international leading figures. For instance, Hilary Koprowski, the director of the Wistar Institute from Philadelphia – the first institute for biomedical research in the USA, one of the most prominent scientists in biomedicine and the founder of the peroral vaccine against poliomyelitis, gives tribute and acknowledgement to Prof. Dr. Ikić for having worked for years on human diploid cells and the viruses multiplied in this substrate, and for having gathered all the results relevant for basing our confidence in these cells upon (1968).

The World Health Organization recognised the Edmonston-Zagreb vaccine against morbilli, in the creation of which Prof. Dr. Ikić had participated, and widely recommended it as superior to other vaccines for children under eight months of age.

June K. Robinson, one of the most distinguished American scientists in the field of melanoma, points out the pioneer role of Prof. Dr. Ikić and his associates in the clinical application of the Interferon in the treatment of skin tumours (1998).

We have decided to mark the 40<sup>th</sup> anniversary since the founding of the Cabinet for the Research and Standardization of Immunological Substances and its entering new premises by organising a symposium addressing two topics, which are currently probably the ones of the most topical interest in medical science: the possibilities of high-throughput genome and proteome analyses in the diagnostics of today; and the achievements of cell- and regenerative medicine. The European

Medical Research Council – ESF, rather intensively deals with these two topics, which are moreover included in the programme of the strategic development of biomedicine in the next ten-year period (White Paper *Present Status and Future Strategy of Medical Research in Europe*). Some of the lecturers at the symposium also participate in the co-ordination and realisation of the following two European projects: *Stem Cells and Regenerative Medicine* and *Preventive Medicine and Global Methods of Genome and Proteome Analysis*.

We sincerely hope to have managed both to mark this rather significant anniversary of the Cabinet for the Research and Standardization of Immunological Substances in a worthily manner by having held this Symposium, and to continue – by choosing discussing points of topical interest – the activities of the Department of Medical Sciences of the Croatian Academy of Sciences and Arts, which place this body directly into the focus of the state-of-the-art biomedical research.