

Letter from the Editor

The explosive advances of the Molecular Sciences during the last decades show no signs of ebbing, due, to a great extent, to the remarkably innovative technics introduced, opening experimental possibilities inconceivable some years ago. In this issue of EPITHEORESE KLINIKES FARMAKOLOGIAS AND FARMAKOKINETIKES, INTERNATIONAL EDITION we present three articles describing such technics.

To be able to characterize a single gene among the tens of thousands in small cell samples, to determine its sequence and detect point mutations or other abnormalities in its structure, with a truly phenomenal ease, has opened new horizons both in basic research and in applications. The Polymerase Chain Reaction, described by A. Haliassos, T. Liloglou, M. Ergazaki and D.A. Spandidos, does exactly that. Knowing the flanking sequences of a gene, it is possible, using the appropriate oligonucleotide primers, a thermostable DNA polymerase and suitable conditions, to produce, in a completely automated way, large quantities of the gene, amenable to further analysis. How this is exploited for medical and forensic applications is thoroughly discussed by the authors.

The introduction of foreign genes in procaryotic or eucaryotic cells is now a routine matter. Remarkable results have been obtained with genetically manipulated cells in the fields of Biomedicine and Biotechnology. There are, however, limitations to the use of such systems, most pronounced in cases where cell-cell interaction is of crucial importance, e.g. in the developing embryo. C.E. Sekeris describes the use of Transgenic Animals, in which a foreign gene has been stably incorporated into the fertilized egg, leading, after implantation in the oviduct of foster mothers, to offspring carrying the foreign gene in a mendelian fashion. These animals, suitable for studies of embryogenesis, are widely applied in the field of Biotechnology and have furthered research in the pathogenesis of human disease, as well as in therapy.

Concerning the problem of therapy, a Rational Design of Drugs is now emerging, combining knowledge of mechanisms of action of drugs on cell metabolism, particularly on enzyme systems, with the advances in the determination of protein structures at almost atomic resolution.

A.C. Papageorgiou, N.G. Oikonomakos and D.D. Leonidas explore this approach and describe recent advances in the design of, among others, antitumor drugs and drugs controlling blood pressure.

The three articles devoted to methodology will surely convey to the reader their tremendous potential. One can assume, without reservations, that the application of these technics in solving basic and applied problems, will, in turn, lead to the generation of new ideas and concepts.

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