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## **Editorial**

Molecular genetics has injected a spectacular new lease of life into research in otology. The inner ear is a specialised organ whose malfunction causes misery for many millions of people but it does not make a very accessible experimental preparation for most lines of research. However, the techniques of molecular genetics have allowed us to study it as never before. During the past few years a number of specific genes related to deafness have been identified. The functions of single genes that are essential for both early and very late stages of inner-ear development have been revealed through the use of transgenic animals. The development and differentiation of single cells can be traced both *in vitro* and *in vivo*, and new experimental tools are appearing in the form of immortalised cell lines. The expression of selected genes is being functionally evaluated in both specific tissues and individual cells. Functional maps of neurotransmitter receptors and ion channels are also being constructed with important consequences for our understanding of the function of the mature organ.

The power of molecular techniques is thus clear, but most advances have not been achieved by molecular techniques alone and they have been most impressive where the

problem has been well defined, the experimental design has been carefully constructed and the techniques have been integrated with complementary techniques from other experimental disciplines. The aim of this special issue is to show how and why selected approaches have delivered the goods, and we hope that it will excite a broad audience including clinicians, students and other researchers interested in entering the field. Contributors were asked to describe clearly, without excessive jargon, the techniques that they have employed and the real progress that has been made. The articles are not intended to be exhaustive reviews of the subjects covered, although some of them have covered the ground very thoroughly.

Techniques such as reverse transcription and the polymerase chain reaction have been described in several articles but in each case with a different emphasis and presentation. With deference to the very real contribution that personality makes to successful research we have allowed authors to offer their own view of the future in the last part of their article. Nevertheless, all articles have been thoroughly reviewed.

The timeliness of this issue is reflected by the fact that the Association for Research in

Otolaryngology has organised a short course based upon similar principles for their annual meeting this February 1997. We decided, therefore, that the issue should be published to coincide with the meeting and that it should be available to the participants.

The journal has just completed a very successful first year, maintaining a high standard of paper review and publication quality. We

are confident that in 1997 we will be able to build on the present success and would like to encourage both scientists and clinicians to submit original manuscripts or review articles to the appropriate editor. Prospective contributors should note the high quality of the production and the fact that there is no charge for the colour plates.