BOOK REVIEW

LYMPHOCYTE STIMULATION. N. R. Ling.

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Due to the remarkable advances in immunobiology and cell biology achieved during the past ten years, we have seen a convergence of these two fields followed by the emergence of a new field, cellular immunology. Thus, immunologists as well as cell biologists and cytogeneticists have become intensely interested in lymphoid cell proliferation as a critical factor in the phenomenon of immunity. One of the most exciting and potentially useful developments emanating from these investigations was Nowell's original description of an in vitro technic for provoking small lymphocytes to transform into proliferating blast cells. This technic has made possible direct observation and metabolic analysis of isolated lymphocytes under a variety of experimental conditions. Dr. Ling, one of the foremost investigators in this area, has completed a book entitled Lymphocyte Stimulation representing an in depth review of practically every aspect of lymphocyte culture and lymphocyte proliferation in vitro.

The first two chapters of this book deal with the general background and historical aspects of lymphocyte physiology. This places the subsequent experimental descriptions in good perspective and thereby enables the reader to appreciate the potential significance of a complicated network of often contradictory data. A long, perhaps overly detailed description of experimental technic follows. Neophytes in lymphocyte culture will not need to look elsewhere for the solutions to many of the technical problems. At one point even comparative prices are included for the economically minded investigator with limited grant support.

The most effective chapters deal with activation of lymphocytes by antibodies, the mixed lymphocyte reaction and the immunologic aspects of lymphocyte transformations. Dr. Ling, who himself has made important contributions to the elucidation of these problems, offers considerable insight especially into the importance of the limiting membrane of the small lymphocyte and its role as the receptor or recognition site in immune activation. Metabolic alterations in stimulated lymphocytes are discussed in two chapters dealing with the synthesis of DNA, RNA and proteins. Here the reader must be wary. Attempts to integrate available data into a coherent picture has obscured the fact that many of the experiments quoted are not comparable. Furthermore, reliable documentation does not always follow each statement. The same sort of criticism can be levied against the final chapter concerning the clinical aspects of lymphocyte transformation. Such unresolved variables as definition of precise disease states, characterization of lymphocyte populations, and standardization of technics and reagents render any conclusions most hazardous at the present stage of our knowledge. However, since this book went to press more information has become available and the reader should be aware of the implications provided by the more recent developments.

Any investigator entering into the study of lymphocyte stimulation might well initiate their search of the literature with this book. Its relatively few shortcomings are those inherent in any attempt to review a new and rapidly changing area of investigation. The more casual reader, who is interested in a summary of the more salient features of lymphocyte stimulation, will find some difficulty but probably will gain most from the chapters on immunologic aspects and mechanisms.—Arnold D. Rubin, M.D.
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