

FLOW CYTOMETRY IN CLINICAL DIAGNOSIS

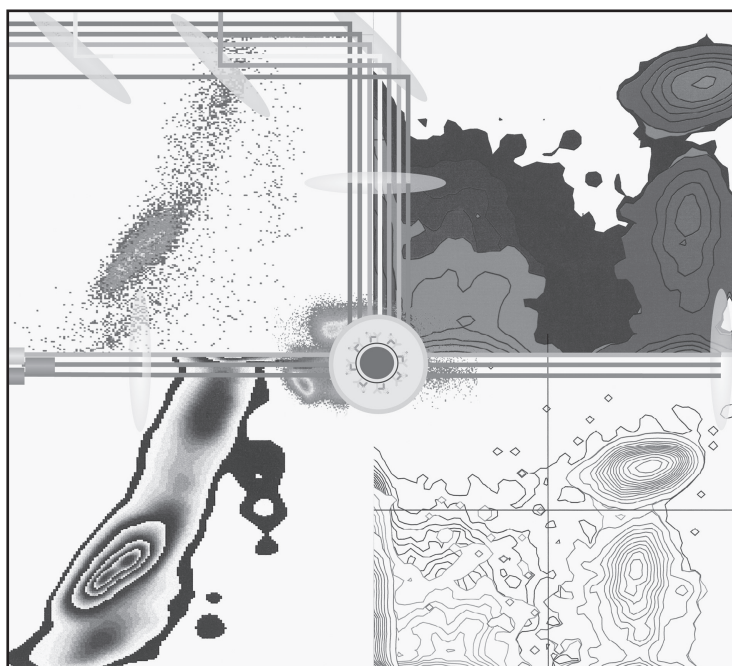
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FLOW CYTOMETRY IN CLINICAL DIAGNOSIS

4th Edition



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PREFACE

This 4th edition of *Flow Cytometry in Clinical Diagnosis* has been extensively revised to reflect recent advances in clinical flow cytometry. These include both technical advances (eg, immunophenotyping with five or more markers and multiplex bead array assays) as well as new applications of existing assays (eg, flow cytometry cross-match in transplantation; immunophenotypic analysis in the diagnosis of myelodysplasia or B CLL prognosis). The emphasis of this text continues to be clinically relevant applications of flow cytometry for the individual patient.

To realize these goals, we have added 10 new authors, in addition to 10 returning contributors from the 3rd edition. The 1st section of the book (chapters 1 through 7) provides basic technical and managerial information about flow cytometry (both traditional cellular assays and newer bead-based assays), monoclonal antibodies, comprehensive quality control, flow cytometry software, and the economics of flow cytometry. The second section in chapters 8 through 10 reviews the general and specific issues regarding flow immunophenotypic evaluation of hematolymphoid neoplasia, in the context of modern classification schemes. In addition to the written material, several dozen cases complete with list mode data files and corresponding expert interpretation are included on a companion CD-ROM.

The remainder of the book discusses the clinical applications of flow cytometry in a wide variety of settings. Chapters 11 and 12 review applications of flow cytometry to the diagnosis of congenital immunodeficiencies of both the adaptive and innate immune systems, while chapter 13 reviews advances in qualitative and quantitative flow analysis of lymphoid cells in HIV-infected individuals. Chapter 14 provides an expert review of the applications of flow cytometry of anti-HLA antibodies and HLA antigens in the evaluation of organ transplant recipients and donors. Closely related is the review of methodologies for stem cell quantitation, and possible new assays in chapter 15. Chapter 16 reviews a mixture of other assays of non-neoplastic hematolymphoid cells (eg, neutrophil activation; platelet function, fetal red cell quantitation), and, chapter 17 presents the clinical state of DNA analysis of tumors. Lastly, we have compiled an extensive appendix of normal ranges for a wide variety of common antigens. These include 95th percentile confidence intervals for the most common markers for cord, neonatal, pediatric and adult peripheral blood samples, pediatric and adult bone marrows, and non-neoplastic (reactive) lymph nodes.

As long-term practitioners of clinical flow cytometry and contributing authors to the previous three editions of this book, we continue to be encouraged by the expansion of flow cytometry into clinical medicine. We hope that this latest edition continues to serve as a practical guide to effective use of this technology in the clinical laboratory.

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*Dr McCoy's chapters were written in a personal capacity and do not represent the opinions of the NIH, DHHS, or the Federal Government.

