
Platelets in Thrombotic and Non-Thrombotic Disorders is an informative and extensively referenced textbook that is highly recommended to biomedical scientists and clinical hematologists with strong interests in platelet physiology and disease states. The editors have assembled an outstanding group of contributors to provide overviews of platelet physiology, pathologic platelet disorders, and the pharmacology of platelet-dependent disease. This textbook will be most useful to scientists studying the pathophysiology of platelet disorders and the basic science of platelet function; many of the chapters, especially the 29 physiology chapters, include the relevant historical context and hard-to-find seminal references that are essential for methodology, manuscript preparation, and general background. The textbook was published in 2002; therefore, the most up-to-date references are from 2000-2001, including several from 2001 that are listed as in press.

The scope of this textbook encompasses a large number of separate chapters, necessitating relatively concise presentation of data and discussions; this enables the reader to quickly focus on a particular topic, although more cross-referencing between chapters would be helpful for future editions. The chapters on platelet physiology are highly focused to provide the reader with state-of-the-art knowledge on distinct aspects of platelet function. For example, platelet signaling is discussed over four separate chapters, including the roles of cAMP and cGMP, tyrosine kinases, protein kinase C, and calcium. These briefly include important methodological detail that is well referenced for benchwork. There is a strong group of platelet pathology chapters that discuss thrombocytopenia; a more comprehensive background in earlier chapters on platelet circulation kinetics might better serve these chapters. One novel aspect of this textbook is the number of chapters that explore the interactions of platelets with heterotypic cells in both normal physiology and disease. These include vascular control of platelet function, leukocyte-platelet conjugate formation in vascular disease, the role of platelets in tumor invasiveness and metastatic potential, and the interaction of platelets with various pathogens, both in vivo and during storage. Several other chapters are highlighted below to provide a snapshot of some of the specific strengths of this text.

A concise, highly relevant overview of the most critical issues and controversies in platelet storage and transfusion is provided by Scott Murphy. This chapter is valuable for hematologists and transfusion medicine fellows and includes an excellent discussion of platelet preparation and storage methodologies and comprehensive tables for quick reference. The clinical focus also encompasses the relevant indications for platelet transfusion and includes a succinct outline of alloimmunization and strategies for finding compatible platelets. Thomas Kuniczki authors a readable overview of gene regulation of platelet function. This chapter includes details on the regulation of megakaryocyte-specific genes found in hematopoietic-derived cell lines and of transcription factors, including the GATA and Ets families. Recent studies that have examined platelet polymorphisms as risk factors for clinically relevant atherothrombosis are also discussed, including clearly presented tables on α2β1 density and polymorphisms of GPIbα, VNTR, and αIIbβ3.

The chapter on platelet procoagulant function by Hemker is broadly written to give a concise overview of the interactions between platelets and soluble/plasma coagulation factors. There has been an explosion of new information in this field since this chapter was prepared, but the general principles related to platelet-associated thrombin generation are clearly written and serve as a firm background for further reading and research. Several chapters are included on the evaluation of trials of antiplatelet therapy for cardiovascular, cerebrovascular, and peripheral vascular disease. All of these include comprehensive tables and detailed analyses of antiplatelet efficacy and outcomes, as well as summary recommendations on current therapeutic regimens.

Future scenarios for antiplatelet therapy are discussed in the chapter on pharmacogenetics. This chapter highlights some of the possible targets of
pharmacogenomic therapy, including those that are applicable to general risk, e.g., high C-reactive protein population subsets, and platelet-derived risk factors, including polymorphisms of GPIIIa (PIA1/2), differential thienopyridine metabolism, and the novel P2Y12 receptor; the latter two are relevant to platelet ADP-receptor antagonist therapy. There is also an interesting discussion of the possibilities for future screening of atherothrombotic risk factors, and the subsequent use of targeted antiplatelet therapy.

Platelets in Thrombotic and Non-thrombotic Disorders emphasizes strongly focused chapters and comprehensive referencing on platelet physiology and function; this extensive framework for up-to-date platelet knowledge makes this text essential for hematologists and blood bankers in training, and for researchers and veteran clinicians with an interest in hemostasis.

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Masters (MSc) in Transfusion and Transplantation Sciences
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