

Table of Contents:

PART I: Platelet Biology

1. The Evolution of Mammalian Platelets

Jack Levin

2. Megakaryocyte Development and Platelet Formation

Kellie R. Machlus and Joseph E. Italiano, Jr

3. The Structure of Resting and Activated Platelets

Steven G. Thomas

4. Platelet Glycobiology and the Control of Platelet Function and Lifespan

Silvia Giannini, Hervé Falet and Karin Hoffmeister

5. Platelet Genomics

Alexander P. Reiner and Andrew D. Johnson

6. Platelet MicroRNAs

Patrick Provost

7. The Platelet Transcriptome in Health and Disease

Jesse W. Rowley, Andrew S. Weyrich and Paul F. Bray

8. The Platelet Proteome

Kathleen Freson

9. Platelet Receptors

Kenneth J. Clemetson and Jeannine M. Clemetson

10. The Glycoprotein Ib-IX-V Complex

Renhao Li

11. GPVI and CLEC-2

Elizabeth J. Haining, Phillip L.R. Nicolson, Marie-Blanche Onselaeer, Natalie S. Poulter, Julie Rayes, Mark R. Thomas and Steve P. Watson

12. Integrin α IIb β 3

Kamila Bledzka, Jun Qin and Edward F. Plow

13. Protease-Activated Receptors

Xu Han, Emma G. Bouck, Elizabeth R. Zunica, Amal Arachiche and Marvin T. Nieman

14. The Platelet P2 Receptors

Marco Cattaneo

15. Platelet Inhibitory Receptors

Zoltan Nagy and Yotis A. Senis

16. Interactions Between Platelets, Leukocytes, and the Endothelium

Zhenyu Li and Susan S. Smyth

17. Inhibition of Platelet Function by the Endothelium

Milka Koupenova and Jane E. Freedman

18. Platelet Signal Transduction

Robert H. Lee, Lucia Stefanini and Wolfgang Bergmeier

19. Platelet Secretion

Robert Flaumenhaft and Anish Sharda

20. Hemostatic Thrombus Formation in Flowing Blood

Lawrence F. Brass, Maurizio Tomaiuolo, John Welsh, Izmarie Poventud- Fuentes, Li Zhu, Scott L. Diamond and Timothy J. Stalker

21. Interactions Between Platelets and the Coagulation System

Stephanie A. Smith and James H. Morrissey

22. Platelet-Derived Extracellular Vesicles

Aleksandra Gasecka, Rienk Nieuwland and Pia R.-M. Siljander

23. Regulation of Fibrinolysis by Platelets

Nicola J. Mutch

24. The Role of Platelets in Angiogenesis

Elisabeth M. Battinelli

25. Platelet Function in the Newborn

Viola Lorenz, Francisca Ferrer-Marin, Sara J. Israels and Martha Sola-Visner

PART II: The Role of Platelets in Disease

26. The Role of Platelets in Atherothrombosis

Meinrad Gawaz and Oliver Borst

27. The Role of Platelets in Diabetes Mellitus

Francesca Santilli, Paola Simeone and Rossella Liani

28. The Role of Platelets in Inflammation

Matthew T. Rondina and Guy A. Zimmerman

29. The Role of Platelets in Antimicrobial Host Defense

Michael R. Yeaman

30. The Role of Platelets in Tumor Growth, Metastasis, and Immune Evasion

Zihai Li, Brian Riesenberg, Alessandra Metelli, Anqi Li and Bill X. Wu

31. The Role of Platelets in Sickle Cell Disease

PART III: Clinical Tests of Platelet Function

32. Platelet Counting

Samuel Kemble, Carol Briggs and Paul Harrison

33. Clinical Tests of Platelet Function

Marie Lordkipanidz_e, Anne-Mette Hvas and Paul Harrison

34. Platelet Aggregation

Catherine P.M. Hayward and Karen A. Moffat

35. Flow Cytometry

Thomas A. Blair, Andrew L. Frelinger, III and Alan D. Michelson

36. Laboratory Monitoring of Antiplatelet Therapy

Thomas Gremmel, Deepak L. Bhatt and Alan D. Michelson

37. Platelet Function Testing in Clinical Research Trials

Andrew L. Frelinger, III

PART IV: Disorders of Platelet Number and/or Function

38. The Clinical Approach to Disorders of Platelet Number and Function

Alan D. Michelson

39. Immune Thrombocytopenia (ITP)

Jenny M. Despotovic and James B. Busse

40. Drug-Induced Thrombocytopenia

Richard H. Aster

41. Heparin-Induced Thrombocytopenia

Andreas Greinacher, Theodore E. Warkentin and Beng H. Chong

42. Thrombotic Thrombocytopenic Purpura and Hemolytic-Uremic Syndromes

Han-Mou Tsai

43. Thrombocytopenia in Pregnancy

Shruti Chaturvedi and Keith McCrae

44. Thrombocytopenia in the Newborn

Irene A.G. Roberts and Subarna Chakravorty

45. Alloimmune Thrombocytopenia

Cecile Kaplan, Gerald Bertrand and Heyu Ni

46. Inherited Thrombocytopenias

Michele P. Lambert and Mortimer Poncz

47. Thrombocytosis and Essential Thrombocythemia

Tiziano Barbui, Guido Finazzi and Ayalew Tefferi

48. Inherited Disorders of Platelet Function

Marco Cattaneo

49. Acquired Disorders of Platelet Function

Reudiger E. Scharf

PART V: Antiplatelet Therapy

50. Aspirin

Carlo Patrono

51. P2Y₁₂ Antagonists

Marco Cattaneo

52. αIIbβ₃ (GPIIb-IIIa) Antagonists

Dhruv Mahatta and Anthony A. Bavry

53. PAR-1 Antagonists

Pierluigi Tricoci

54. Phosphodiesterase Inhibitors

Paul A. Gurbel, Young-Hoon Jeong and Udaya S. Tantry

55. Novel Antiplatelet Therapies

Kumaran Kolandaivelu and Deepak L. Bhatt

56. Antiplatelet Drugs in the Management of Coronary Artery Disease

Jae Youn Moon and Dominick J. Angiolillo

57. Antiplatelet Drugs in the Management of Cerebral Ischemia

Gregory J. del Zoppo and J. Donald Easton

58. Antiplatelet Drugs in the Management of Thrombotic/Ischemic Events in Peripheral Artery Disease

Stefania Basili and Francesco Violi

59. Antiplatelet Drugs in the Management of Venous Thromboembolism, Cardioembolism, Ventricular Assist Devices, and Pregnancy Complications

Noel C. Chan and Jeffrey I. Weitz

60. Antiplatelet Drugs in the Management of Thrombotic/Ischemic Events in Children

Alan D. Michelson

PART VI: Therapy to Increase Platelet Numbers and/or Function

61. Thrombopoietin Receptor Agonists

David J. Kuter

62. Desmopressin (DDAVP)

Marco Cattaneo and Pier Mannuccio Mannucci

63. Factor VIIa

Man-Chiu Poon

64. Platelet Transfusion Medicine

Alexa J. Siddon, Christopher A. Tormey and Edward L. Snyder

65. Therapeutic Platelet-Rich Plasma in Wound Healing

Joseph Alsousou and Paul Harrison

66. Stem Cell-Derived Platelets

Peter Karagiannis, Naoshi Sugimoto and Koji Eto

67. Gene Therapy for Platelet Disorders

David A. Wilcox