

1. Record Nr.	UNINA9910779691003321
Titolo	The neutrophils : new outlook for old cells / / editor, Dmitry Gabrilovich, H. Lee Moffitt Cancer Center, USA, University of South Florida, USA
Pubbl/distr/stampa	London, : Imperial College Press Singapore ; ; Hackensack, NJ, : Distributed by World Scientific Pub., c2013 London : , : Imperial College Press, , [2013] 2013
ISBN	1-299-46292-8 1-84816-837-3
Edizione	[3rd ed.]
Descrizione fisica	1 online resource (xxiii, 422 pages) : illustrations (some color)
Collana	Gale eBooks
Disciplina	571.96
Soggetti	Neutrophils
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	List of Contributors; Preface; Contents; Chapter 1: Molecular Regulation of Granulopoiesis Sachin Kumar and Marie-Dominique Filippi; 1.1 Introduction; 1.2 Sequential Steps of PMN Development; 1.2.1 From HSC to granulocytic precursors; 1.2.2 Final stages of granulocytic maturation - Acquisition of granulocyte characteristics; 1.3 Regulation of Steady State Granulopoiesis; 1.3.1 Growth factors; 1.3.1.1 G-CSF: Sources and functions; 1.3.1.2 G-CSFR and downstream signaling pathways; 1.3.1.3 G-CSFR signaling: Instructive or permissive?; 1.3.2 Transcription factors (TF) 1.3.2.1 PU.1 - Generation of CMP from HSC1.3.2.2 C/EBP - Generation of GMP from CMP; 1.3.2.3 C/EBP - Terminal stages of differentiation; 1.3.2.4 Gfi-1 - Terminal stages of differentiation; 1.3.2.5 Other transcription factors important for granulopoiesis; 1.3.2.5.1 Retinoic acid receptors; 1.3.2.5.2 HoxA10; 1.3.2.5.3 LEF-1; 1.3.3 MicroRNA; 1.3.4 Cell cycle regulation; 1.4 Emergency Granulopoiesis; 1.5 Conclusion; References; Chapter 2: The Neutrophil Respiratory Burst Oxidase Mark T. Quinn; 2.1 Introduction; 2.2 NADPH Oxidase Components; 2.2.1 Flavocytochrome b; 2.2.2 p47phox; 2.2.3

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2.2.4 p40phox2.2.5 Rac; 2.2.6 Rap1A; 2.3 Oxidase Protein Binding Interactions; 2.3.1 Flavocytochrome b-p47phox interactions; 2.3.2 p40phox-p47phox-p67phox interactions; 2.3.3 Rac interactions; 2.4 Model of NADPH Oxidase Assembly; 2.5 Oxidant Production; 2.5.1 Superoxide anion ( $O_2^-$ ); 2.5.2 Hydrogen peroxide ( $H_2O_2$ ); 2.5.3 Hypochlorous acid (HOCl); 2.5.4 Hydroxyl radical (HO); 2.5.5 Singlet oxygen ( $1O_2^*$ ); 2.5.6 Nitric oxide (NO) and peroxynitrite ( $ONOO^-$ ); 2.7 Summary; Acknowledgments; References

Chapter 3: Novel Neutrophil Receptors and Their Signal Transduction  
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Chapter 4 Mechanisms of Neutrophil Migration Fong W. Lam, Rolando E. Rumbaut and Alan R. Burns4.1 Introduction; 4.2 Historical Perspective on Leukocyte Adhesion and Emigration (1669-1955); 4.2.1 The first observations; 4.2.2 Mechanistic insight; 4.3 Molecular Adhesive Events Preceding Neutrophil Transendothelial Migration; 4.4 Integrin Regulation of Neutrophil Transendothelial Migration; 4.5 Paracellular Neutrophil Transendothelial Migration; 4.5.1 Endothelial cleft organization; 4.5.2 Tight junctions and preferred transmigration sites; 4.5.3 Adherens junctions; 4.5.4 Gap junctions  
4.5.5 PECAM-1

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### Sommario/riassunto

This is a third edition of the popular book, which presents an overview of the most recent findings in the biology of neutrophils. These cells are critically important for protection against bacterial and viral infections and have been recently demonstrated to be a major contributor to tumor associated immune suppression. In addition, neutrophils represent a unique model for studying fundamental questions of cellular biochemistry and molecular biology. This monograph provides a detailed description of signal transduction, generation of reactive oxygen, and mechanisms of migration and death of

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