



Springer

1st  
edition2009, XXXI, 1693 p. In 2  
volumes, not available  
separately.**Printed book**

Hardcover

**Printed book**

Hardcover

ISBN 978-1-4020-9062-2

£ 349,99 | CHF 551,00 | 467,28 € |

514,01 € (A) | 499,99 € (D)

Out of stock

**Discount group**

Science (SC)

**Product category**

Contributed volume

**Other renditions**

Softcover

ISBN 978-94-017-7721-6

**Biomedicine : Biomedicine (general)**

Fulop, T., Franceschi, C., Hirokawa, K., Pawelec, G. (Eds.)

# Handbook on Immunosenescence

basic understanding and clinical applications

- The first comprehensive handbook on immunosenescence
- First to treat in one volume all the aspects of immunosenescence
- Bridging bench research and clinical applications
- Written by internationally recognised people in the field of immunosenescence
- Useful for anti-aging research and clinic

"Immunosenescence" is an imprecise term used to describe deleterious age-associated changes to immune parameters observed in all mammals studied so far. It represents a rapidly progressing science in the aging field, with a vertiginous volume of new data, knowledge and concepts concerning these changes. We are poised to be in a position to translate these accumulated data into the clinical setting via better understanding of the contribution of immunosenescence to age-associated pathologies, and their prevention by appropriate interventions. This authoritative handbook seeks to encompass the current state of our knowledge on the multitude of those changes to immunity related to aging, with contributions from experts in the research and clinical areas. This book therefore considers methods and models for studying immunosenescence; cellular immunosenescence of T cells, B cells, neutrophils, antigen presenting cells, NK, NKT and stem cells; genetics; mechanisms including receptors and signal transduction; mitochondria; proteasome; cytokines; neuro-endocrine-immune networks; inflammation; thymus; clinical relevance in disease states including infections, autoimmunity, cancer, metabolic syndrome, neurodegenerative diseases, frailty and osteoporosis; modulation by nutrition, lipids, vaccination and the question "can interventions to influence immunosenescence be realistically proposed based on our current state of knowledge?"

**Order online at [springer.com/booksellers](http://springer.com/booksellers)****Springer Nature Customer Service Center GmbH**

Customer Service

Tiergartenstrasse 15-17

69121 Heidelberg

Germany

T: +49 (0)6221 345-4301

[row-booksellers@springernature.com](mailto:row-booksellers@springernature.com)

ISBN 978-1-4020-9062-2 / BIC: MBGR / SPRINGER NATURE: SCB0000X

Prices and other details are subject to change without notice. All errors and omissions excepted. Americas: Tax will be added where applicable. Canadian residents please add PST, QST or GST. Please add \$5.00 for shipping one book and \$ 1.00 for each additional book. Outside the US and Canada add \$ 10.00 for first book, \$5.00 for each additional book. If an order cannot be fulfilled within 90 days, payment will be refunded upon request. Prices are payable in US currency or its equivalent.

Part of **SPRINGER NATURE**