Neisseria

Molecular Mechanisms of Pathogenesis

Edited by: Caroline Genco and Lee Wetzler
Boston University School of Medicine, Boston MA 02118, USA

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Neisseria gonorrhoeae and Neisseria meningitidis are Gram-negative diplococci. N. gonorrhoeae is the causative agent of gonorrhoea and is transmitted via sexual contact. N. meningitidis is transmitted via respiratory droplets leading to colonization of the nasopharynx and can cause meningitis and septicemia.

This important reference volume provides research scientists, advanced students, clinicians, and other professionals with a comprehensive update on the current understanding of the molecular mechanisms of pathogenesis in Neisseria. The editors have assembled a team of highly regarded scientists, over 40 contributors, to describe the latest, up-to-date research, theory and clinical significance of molecular mechanisms in meningoococcal disease. Leading authorities have contributed chapters on topics such as gene expression, genomics, biofilms, denitrification, adhesion strategies and mechanisms of cellular invasion. A section on the host response to neisserial infection covers innate immunity, complement, apoptosis, and acquired immunity while a section devoted to clinical correlation deals with vaccine development, epidemiology and antibiotic resistance.

The volume is highly recommended for microbiologists, epidemiologists and clinicians involved with Neisseria research or meningoococcal disease and is a recommended text for all microbiology libraries.

Chapter 1. Gene Expression Strategies of the Pathogenic Neisseria. J.R. Mellin and Stuart Hill
Chapter 3. Genomics and Recombination. John K. Davies
Chapter 4. Gonococcal Biofilms. Michael Apicella, Megan L. Falsetta, Ryan Neil and Christopher Steichen
Chapter 5. Newly Described Surface Structures and Adhesion Strategies of the Pathogenic Neisseria. Rosanna Leuzzi, Laura Serino, Davide Serruto and Mariagrazia Pizza
Chapter 7. Innate Immune Recognition of Neisseria meningitidis and Neisseria gonorrhoeae. Daniel C. Stein, Julia B. Patrone and Samuel Bish
Chapter 8. Interactions of Neisseria with Complement. Lisa A. Lewis, E. Burrowes, Peter A Rice and Sanjay Ram
Chapter 9. Consequences of Pathogenic Neisseria Infection on Cellular Apoptosis. Sarah A. Follows and Paola Massari
Chapter 11. Difficulty in Developing a Neisserial Vaccine. Kate L. Seib and Rino Rappuoli
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