

# Parasitic Nematodes: Molecular Biology, Biochemistry and Immunology

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**Readership:** Advanced students and researchers in human and veterinary parasitology, plant nematology and immunology.

Currently more than one third of the world's population are infected with parasitic nematodes, and infection of domestic animals and crop plants remains a substantial drain on human wellbeing and economies. An understanding of the structure and function of genes, membranes and antigens of parasitic nematodes will help develop strategies to eliminate them or reduce their impact.

- An up to date summary of this important and rapidly expanding area of research
- No other published titles focus specifically on these aspects

## Contents include:

### Part I: Genetics and phylogeny

- Molecular analysis of nematode evolution
- The *Wolbachia* endosymbionts of filarial nematodes
- Forward genetic analysis of plant-parasitic nematode-host interactions
- Identification of parasitic nematodes and study of genetic variability using PCR approaches
- Diversity in populations of parasitic nematodes and its significance

### Part II: Host modulation and manipulation - making themselves at home

- New insights into the intestinal niche of *Trichinella spiralis*
- Genetic reprogramming of mammalian skeletal muscle cells by *Trichinella spiralis*
- Plant parasitic nematodes

### Part III: Specialist products and activities

- The nematode cuticle: synthesis, modification and mutants
- Chitinases of filarial nematodes
- Acetylcholinesterase secretion by nematodes
- The surface and secreted antigens of *Toxocara canis*: genes, protein structure and function
- Nematode gut peptidases, proteins and vaccination
- Metabolic transitions and the role of the pyruvate dehydrogenase complex during development of *Ascaris suum*
- Novel carbohydrate structures
- Structurally novel lipid binding proteins

### Part IV: Immunology and immunomodulation

- T helper cell cytokine responses during intestinal nematode infection: Induction, regulation, and effector function
- Gut immunopathology in helminth infections - paradigm lost?
- Immunomodulatory properties of a phosphorylcholine-containing filarial nematode secreted glycoprotein

### Part V: Neurobiology

- Nematode neuropeptides
- Neurobiology of nematode muscle: ligand-gated ion channels and anti-parasitic drugs

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