Special Issue

Immunology Insights: How the Immune System Battles Parasitic Infections

Message from the Guest Editors

The immune system is a powerful defense mechanism that protects the body from harmful invaders, including parasites. When a parasitic infection occurs, the immune system launches a multi-layered response. First, the innate immune system, including physical barriers like the skin and mucous membranes, tries to prevent entry. If parasites bypass these defenses, immune cells like macrophages and neutrophils attack them. The adaptive immune system then activates, producing specialized T and B cells. T cells coordinate the response, while B cells produce antibodies which target the parasites. Eosinophils, a type of white blood cells, play a crucial role in combating larger parasites like worms, protozoans, bacteria and fungi. In some cases, the immune system forms granulomas, isolating the parasite to prevent further spread. Despite these defenses, some parasites evade immune detection, leading to chronic infections. Understanding these immune responses helps in developing better treatments and vaccines for parasitic diseases.

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Message from the Editor-in-Chief

The worldwide impact of infectious disease is incalculable. The consequences for human health in terms of morbidity and mortality are obvious and vast but, when infections of animals and plants are also taken into account, it is hard to imagine any other disease that has such a significant impact on our lives—on healthcare systems, on agriculture and on world economics. *Pathogens* is proud to continue to serve the international community by publishing high quality studies that further our understanding of infection and have meaningful consequences for disease intervention.

Editor-in-Chief

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