

Special Issue

Innate and Adaptive Immunity against Porcine Viruses

Message from the Guest Editors

The porcine innate immune system provides a first line of defense against pathogens and is critical in promoting the development of acquired immunity. Innate immune cells, including macrophages and dendritic cells, are located at portals of pathogen entry where they respond to invading antigens. In addition to secretion of IFNs, these cells are equipped with pathogen-recognition receptors essential for detection and triggering increased uptake, processing and presentation of antigens to the adaptive immune system. NK and gd-T cells contribute to innate immunity through cytotoxic activity. Their activation/inhibition by viruses might be crucial, considering they represent 50% and 10% of the total porcine peripheral blood lymphocyte population, respectively. B and T lymphocytes (CD4–CD8ahigh, CD4+CD8alow, CD4+CD8a–) form the effector cells of the adaptive immune system and contribute to host antiviral responses through secretion of neutralising antibody and cytokines, respectively. Several viruses have developed mechanisms to outpace innate immune defenses, thereby avoiding the adaptive immune system in order to efficiently replicate in the host.

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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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