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ADP-Ribosylation in Pathogens

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Message from the Guest Editors

ADP-ribosylation is a reversible post-translational modification defined by the addition of single [mono(ADP-ribosyl)ation] or multiple [poly(ADP-ribosyl)ation] ADP-ribose moieties onto amino acid side chains with nucleophilic oxygen, nitrogen or sulfur.

Since the beginning of the field, ADP-ribosylation is known for its role in microbial pathogenesis through the discovery of the ADP-ribosylating activity of toxins derived from bacteria. Recent data indicate that a group of positive-strand RNA viruses encode a conserved protein domain (macrodomain) that removes ADP-ribosylation. Several PARPs have direct antiviral activities, with some involved in immune regulation. However, it remains unclear how these host and viral enzymes dynamically regulate ADP-ribosylation and associated functions during infection, and it remains to be determined whether PARPs or macrodomains can be targeted for antiviral therapies.

So now, we are calling for the community to submit original research articles or reviews on elucidating the role of ADP-ribosylation in pathogen biology, pathogenesis, and host-pathogen interactions, as well as their potential avenues for drug development.





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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.

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