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Genetic Characteristics and Pathogenesis of Zoonotic Diseases

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Message from the Guest Editors

The genetic characteristics of zoonotic pathogens play a pivotal role in their transmission dynamics and their ability to jump between species. However, susceptibility to infection and pathogenicity is a multifaceted interplay between host–pathogen interactions and the genetic diversity within host populations. This Special Issue explores how the genetic characteristics of zoonotic pathogens drive their evolution, impacting the emergence and adaptation of diseases to new hosts. It emphasizes genetic markers associated with virulence, drug resistance, and pathogenic properties in zoonotic diseases to better understand mechanisms governing disease pathogenesis. Furthermore, this Special Issue examines host–pathogen interactions, scrutinizing genetic factors influencing host susceptibility and resistance. It highlights co-evolutionary dynamics between zoonotic pathogens and animal hosts, underscoring how genetic diversity in both shapes disease outcomes. Additionally, this Special Issue embraces the One Health approach, emphasizing human, animal, and environmental health interconnections through case studies and research initiatives.



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