Special Issue

Molecular Diagnostics for Tropical Infectious Diseases

Message from the Guest Editors

Tropical infectious diseases occur mainly between the Tropics of Cancer and Capricorn, particularly in developing countries, causing about 15 million deaths annually. They are linked to poor housing, malnutrition, and weak healthcare systems, with pathogens including parasites (e.g., Malaria), viruses (e.g., Dengue, Ebola), bacteria (e.g., Tuberculosis), and fungi (e.g., Histoplasmosis). Global migration and tourism are spreading these diseases beyond endemic regions, complicating early detection due to long incubation periods. There is an urgent need for advanced molecular diagnostic tools with high sensitivity and specificity to identify infections early. Techniques that detect nucleic acids (DNA/RNA) and specific proteins are vital for effective clinical management. While PCR is widely used for nucleic acid detection, new methods like LAMP and RPA offer portability and lower infrastructure costs. Various protein detection methods, including lateral flow assays, are being developed for point-ofcare diagnostics. This Special Issue invites submissions on novel molecular diagnostic techniques for detecting DNA, RNA, or proteins related to tropical diseases and their applications.

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