

# Proteomics Novel Prospects in Target Therapy for Infectious Diseases



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**Abstract** RNA viruses that undergo continuous evolution can cause infectious diseases, leading to considerable harm to public health, individual well-being, and economic growth. The virus transmission can be through human-to-human, animals to humans and insects or vectors. The viruses involved are Middle East respiratory syndrome coronavirus, human immunodeficiency virus, severe acute respiratory syndrome coronavirus, Crimean Congo virus, flaviviruses such as zika and dengue Virus. The viral protein involves with host organism proteins plays a significant part in pathogenesis and infection by avoiding the host defense mechanisms. As proteins have a huge range of functions, proteomics approaches can offer significant prudence in analyzing disease pathogenesis, etiology and discovery of potential antiretroviral pharmaceutical drug target sites and improving diagnostics. Two-dimensional gel electrophoresis, liquid chromatography, Isotope-coded affinity tag labeling-based protein profiling and Mass spectrometry are utilized for defining the structural arrangement of viral pathogens, virus and host protein interactions, conduct sensitive, high-throughput analyses of them enormously and the development of therapy strategies and improving the diagnostics. This approach also made considerable contributions to the finding of signaling cascades, the information of disease mechanisms regarding proteome changes and posttranslational modifications at some point in infection, the unfolding of viral–host protein interactions and its novel mechanisms against viral proteins. This chapter is centered on describing the usefulness of proteomics techniques that provides large set of information regarding protein interaction and new drug target could be developed for infectious disease.

**Keywords** Proteomics approach · Infectious disease · Protein interaction · Mass spectroscopy · Coronavirus · Biosystem

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