

Title: Chapter six - Nanoparticles: implications on proteome

Author: Muhammad Fawad, Khalid Rehman Hakeem

Abstract: Nanoparticles have generally reshaped the advancement of accurate medical care in ongoing many years. In the meantime, mass spectrometry (MS)-based proteomics has grown from just sequencing proteins to a powerful method for finding disease patterns and signatures, figuring out the molecular mechanisms of disease, and making drugs that treat or prevent disease. Several nanotechnology-assisted sample processing strategies have made it easier to conduct in-depth proteome profiling and characterize posttranslational modifications (PTMs). They show that the specific field has significantly enriched and synergized our understanding of human health and disease. This chapter summarizes recent developments in nanoparticle design for improved enrichment of marker proteins and their PTMs from various bio-specimens as well as emerging nanotechnologies utilized in MS-based proteomics for the discovery of precision medicines..

Keywords: Nanoparticles; Precision medicine; Mass spectrometry (MS)-based proteomics; Protein sequencing; Disease biomarkers; Molecular mechanisms

DOI: <https://doi.org/10.1016/B978-0-323-95721-2.00005-1>

<https://www.sciencedirect.com/science/chapter/edited-volume/abs/pii/B9780323957212000051>