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The progress of proteomic approaches in searching for cancer biomarkers

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Abstract

Biomarkers are indicators of a specific biological state. Their detection in pathological conditions, such as cancer, is important for clinical disease management. One of their greatest values could be in early diagnosis and detection of neoplasms when the cancer is more manageable. Protein biomarkers are expected to be reliable predictors of pathological conditions, as they represent the endpoint of biological processes.

The proteomic methodology has rapidly evolved in the past ten years, thus enabling discovery of a vast amount of potential biomarker candidates. However, the majority of novel candidates have not yet reached the integration into clinical environment. To do that, well constructed large population validation studies are necessary as well as development of new algorithms for deciphering complex biological interactions and their involvement in pathological processes.

This review focuses on advances in classical proteomic approaches and emerging high-throughput proteomic technologies for identifying cancer biomarkers.

Keywords: Proteomics, cancer, biomarker

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