NEWS:

Time to go to multi-biomarkers and multi-omics in cancer early-drug development and clinical trials.

There is still a huge gap between the number of potential cancer biomarkers discovered (>1000) and the number approved for clinical use (<25), and as most of the FDA-approved biomarkers are proteins, it is now time to speed up the process of using new approaches of the domain (1) (4).
“Omics” approaches provide an opportunity to accelerate drug development in general and clinical development in particular. By providing biomarkers associated with drug response and illness progression, “omics” approaches provide efficient and convenient surrogate endpoints as outcomes of clinical trials (2).
Proteomics play an essential role in the comprehensive understanding of the organism’s functions, interactions, and adaptations that “systems biology”, or “omics” sciences, aim to provide, and lead to better development decisions, and potentially facilitate development of drugs with better efficacy, safety, and tolerability profiles, and accelerate developmental timelines. (2) (3) (4)

Due to the considerable progress during the last decade in mass spectrometry and dedicated bioinformatics, proteomics appears as the pivotal approach for new biomarkers to be integrated in cancer early-drug development.

(1)Srivastava A. and all. – 2018- Discovery and validation of clinical biomarkers of cancer: a review combining metabolomics and proteomics. https://www.ncbi.nlm.nih.gov/pubmed/30353665
(2)Nandal S. and all. -2017- Integrating Pharmacoproteomics into Early-Phase Clinical Development: State-of-the-Art, Challenges, and Recommendations https://www.ncbi.nlm.nih.gov/pubmed/28218733
(3)Faria SS. and all. -2017- A Timely Shift from Shotgun to Targeted Proteomics and How It Can Be Groundbreaking for Cancer Research.
https://www.ncbi.nlm.nih.gov/pubmed/28265552
(4)Goossens N. and all. -2015- Cancer biomarker discovery and validation.
https://www.ncbi.nlm.nih.gov/pubmed/26213686

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