Gene expression and bioinformatics tools to optimize cancer therapy

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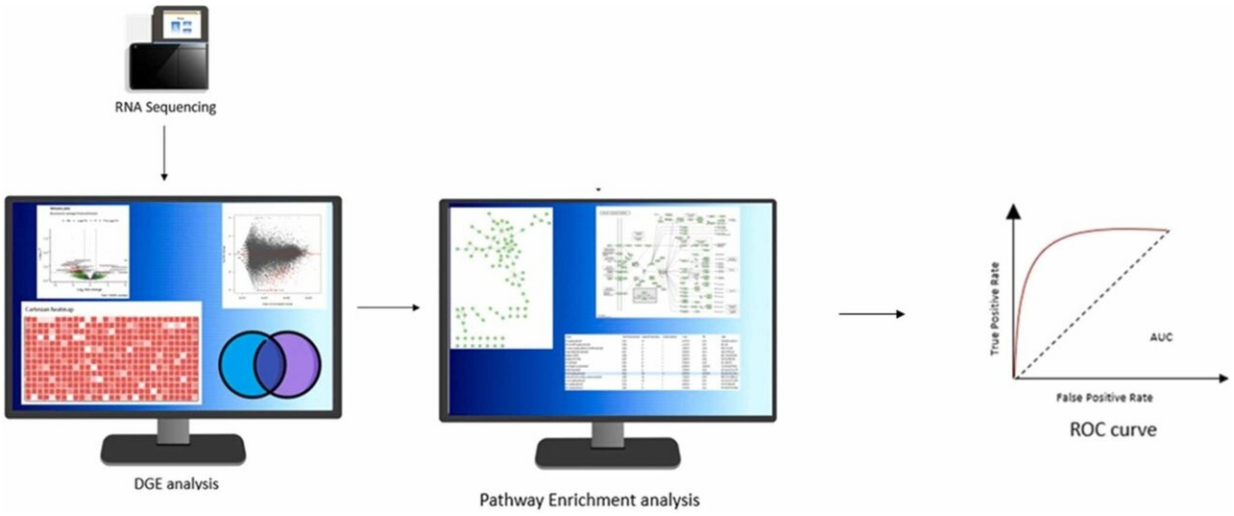

Credit: *Computational and Structural Biotechnology Journal* (2024). DOI: 10.1016/j.csbj.2024.02.018

In the field of biomedical research and genomics, the advancement of bioinformatics technologies and tools is opening new frontiers in the understanding of diseases and their diagnosis and treatment. In particular, differential gene expression analysis (DGE) is emerging as a crucial technique to investigate the molecular mechanisms underlying diseases.

The most significant results were collected and discussed in the review

"Differential gene expression analysis pipelines and bioinformatic tools for the identification of specific biomarkers: A review" by Diletta Rosati, Maria Palmieri, Giulia Brunelli, Andrea Morrione, Francesco Iannelli, Elisa Frullanti and Antonio Giordano.

This comprehensive review is the result of a joint effort between the teams of Prof. Antonio Giordano and Prof. Elisa Frullanti, within the Med Biotech Hub and Competence Center, Department of Medical Biotechnologies, University of Siena and the Sbarro Health Research Organization together with the Sbarro Institute for Molecular Medicine and Cancer Research at Temple University in Philadelphia.

The review was published in March 2024 in the *Computational and Structural Biotechnology Journal*.

The review explores the analysis of differential gene expression, focusing on the identification of specific biomarkers for advances in precision medicine. It aggregates and analyzes findings from relevant studies in the field, offering a holistic view of recent developments and their potential impact on disease treatment.

The article discusses the challenges and opportunities in this field, emphasizing the importance of such methodologies for the future of biomedical research. With its comprehensive approach, it serves as a valuable resource for anyone interested in advances in genetic analysis techniques and their practical application in health care.

More information: Diletta Rosati et al, Differential gene expression analysis pipelines and bioinformatic tools for the identification of specific biomarkers: A review, *Computational and Structural Biotechnology Journal* (2024). DOI: 10.1016/j.csbj.2024.02.018

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