## A GOBIOM Case Study

# MicroRNAs as Biomarkers for Drug Resistance and Response to Therapy in Cancers

## The Purpose

- To predict and analyze miRNAs indicative of treatment response and drug resistance in various cancers through heat-map analytics.

- To identify the decisive miRNAs and position them as potential therapeutic targets in the area of oncology.

## About the Client

**Company**
Biotech

**LOCATION**
Europe

**THERAPEUTIC AREA**
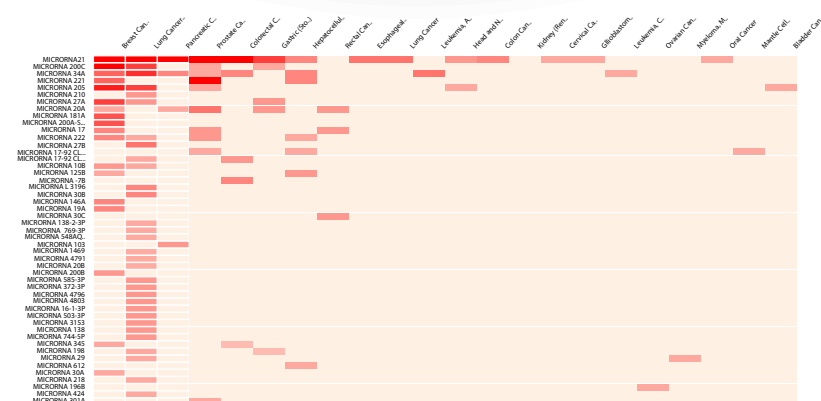Oncology

## Client Specification

To identify miRNAs associated with the sensitivity of two cancers against an IND.

## The Excelra Approach

- To expedite, heat-map analytics was chosen in GOBIOM.

- Heat-map analytics was used to draw forth the list of potential miRNAs indicative of response to the therapy and drug resistance by plotting miRNAs against various oncology related indications.

- The list of drugs showing disease resistance was obtained by plotting drugs against various miRNAs across different indications.
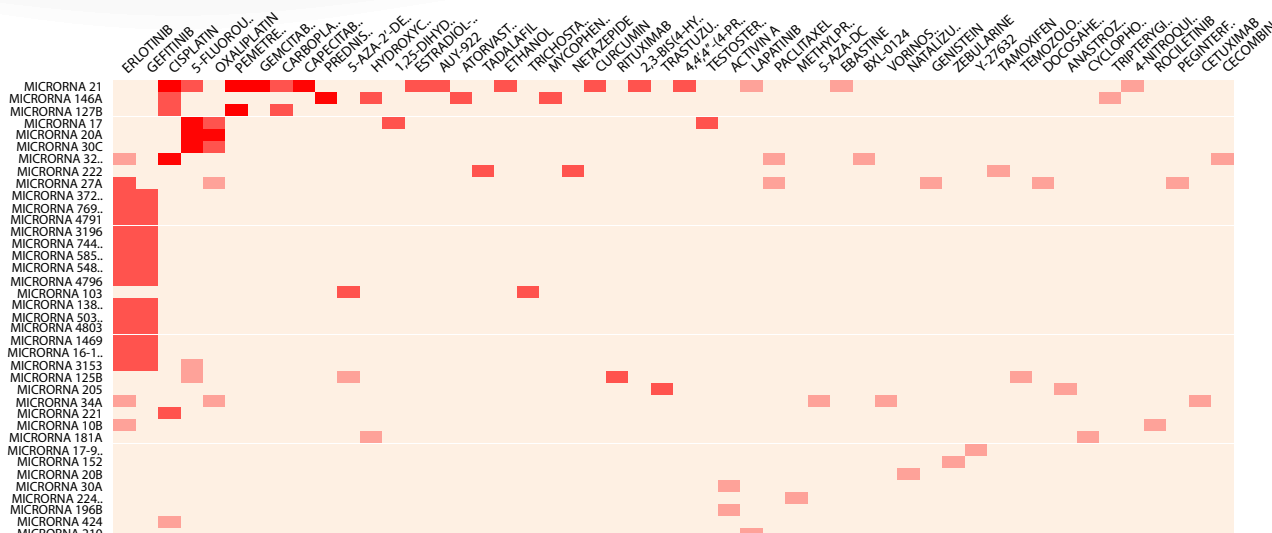
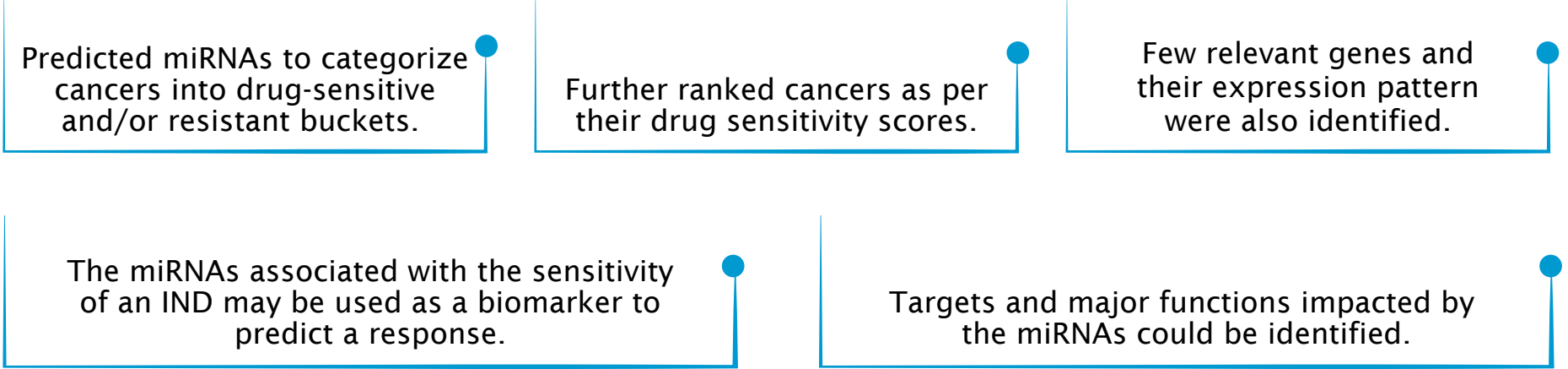miRNAs indicative of drug resistance across various oncology indications



miRNAs indicative of drug response across various oncology indications



miRNAs indicative of drug resistance across various drugs in oncology therapeutics

# Excelra's Contribution

- Predicted miRNAs to categorize cancers into drug-sensitive and/or resistant buckets.

- Further ranked cancers as per their drug sensitivity scores.

- Few relevant genes and their expression pattern were also identified.

- The miRNAs associated with the sensitivity of an IND may be used as a biomarker to predict a response.

- Targets and major functions impacted by the miRNAs could be identified.

# Excelra's Service Portfolio

| | Insights | Data |
|---|---|---|
| **Discovery** | • Data Science Driven Drug Discovery<br>• Target Identification<br>• Target Dossier Services | • Chemistry Curation Services<br>• GOSTAR<br>  Structure Activity Relationship database |
| **Translational** | • Biomarker Discovery<br>• Drug Repositioning<br>• Life Cycle Management<br>• Systems Biology Informatics | • Biology Curation Services<br>• GOBIOM<br>  Biomarker intelligence database |
| **Clinical** | • Precision Oncology Informatics<br>• Clinical Pharmacology | • Clinical Trial Outcomes Database |
| **Value Evidence** | • Outcomes Research<br>• Epidemiology Modelling<br>• Economic Modelling<br>• Value Evidence Communication | • RWE & Big Data Realization<br>• SLR & Meta-analysis |
| **Technology Solutions** | • Enterprise Data Strategy<br>• Enterprise Cloud Ops<br>• Enterprise Digital Transformation | |

For more information, visit https://www.excelra.com/translational/#gobiom

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