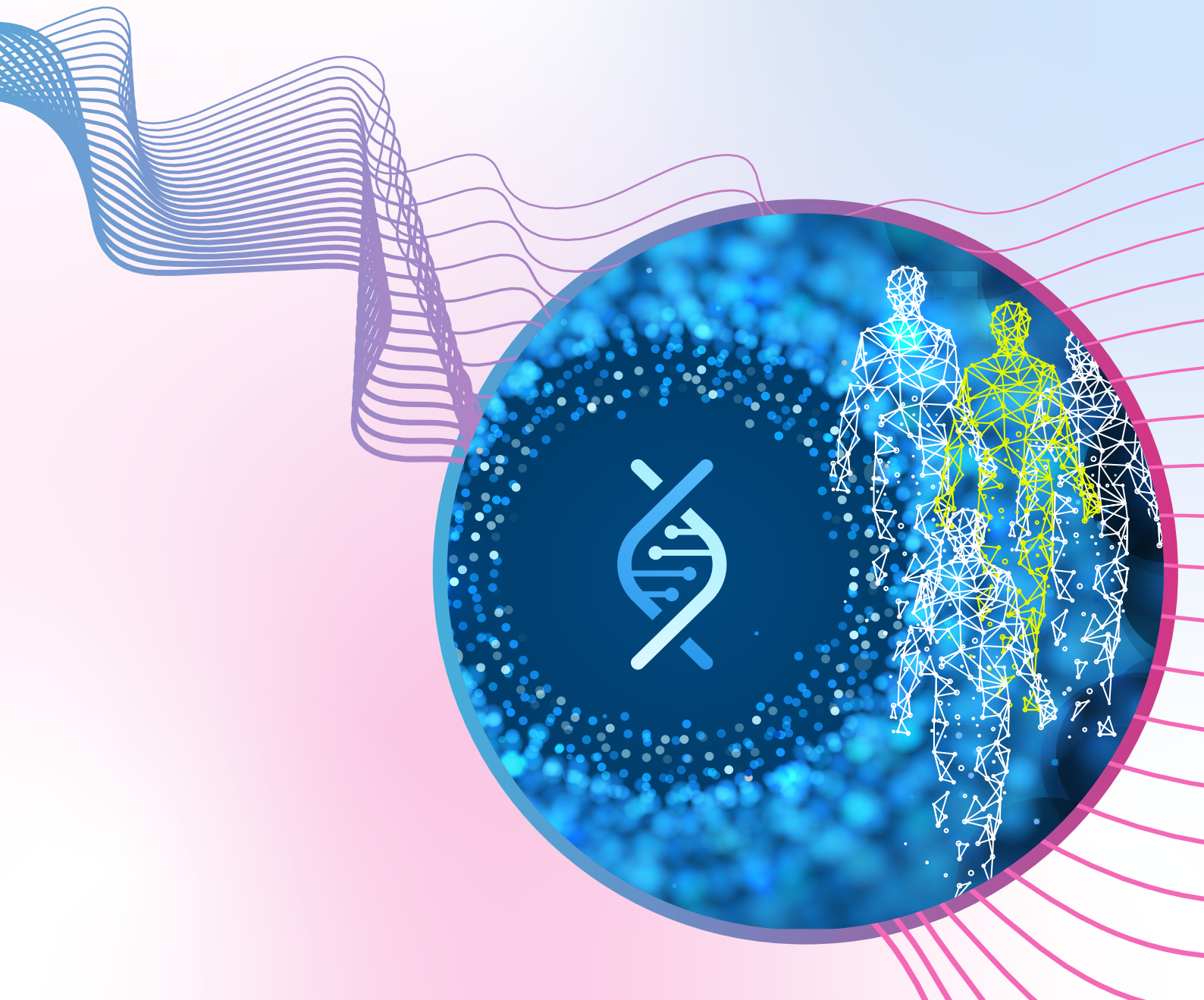


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Identification of predictive biomarkers and applications in patient enrichment strategies

CASE STUDY



Purpose

The partner had a pipeline molecule that was under clinical development. The interest area was to identify biomarkers indicative of drug-response in patients and further utilize the biomarkers for patient stratification in clinical trials.

Client



Industry
Small pharma



Location
US



Sector
Non-hodgkin's lymphoma

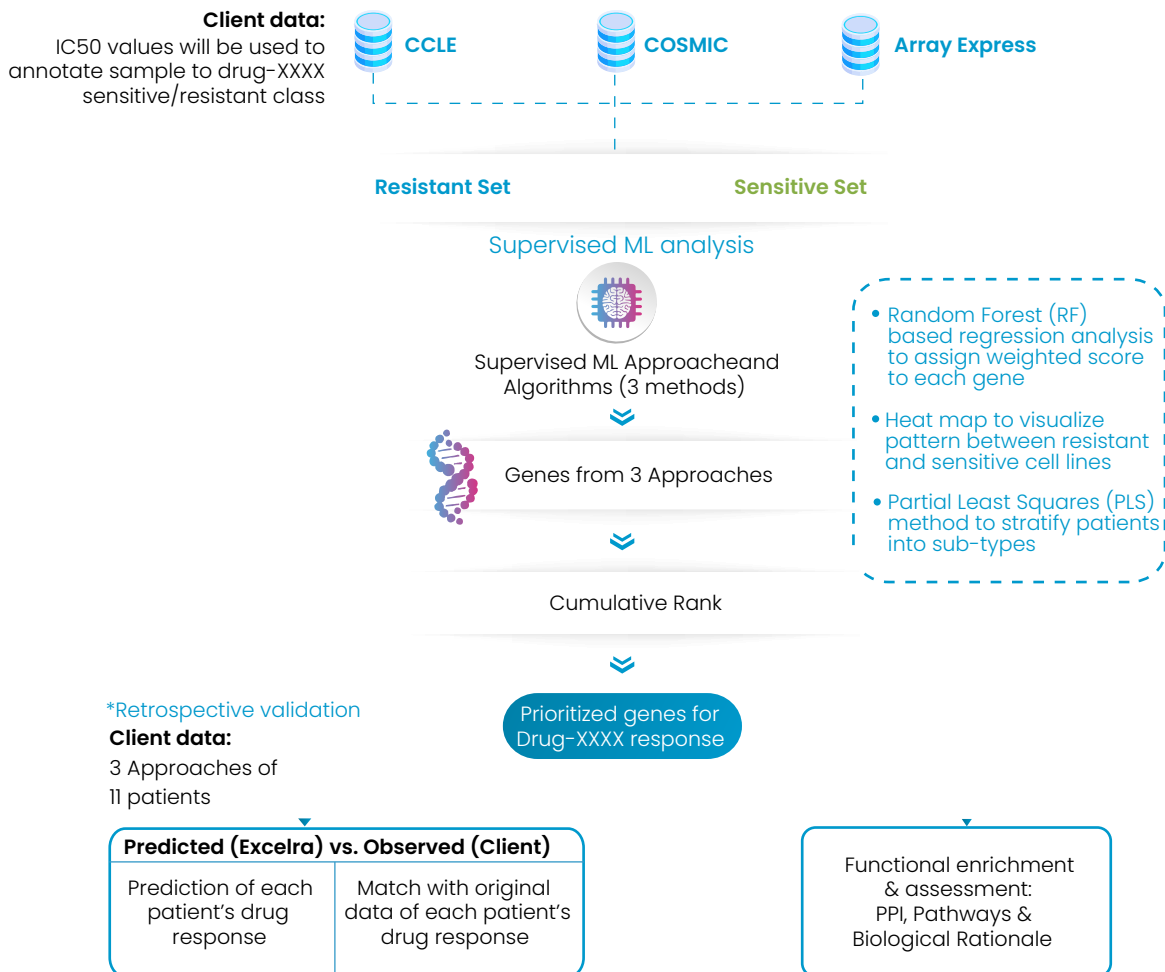
Client requirement

The focus was on analysing the proprietary gene-expression data of 118 cell-lines that were treated with the drug. Furthermore, after prediction of drug-response biomarkers, gene expression profiles of 11 patients was shared by the partner to retrospectively classify them into responders and non-responders.

Our approach

Machine learning models were built using three different methods to prioritize biomarkers associated with drug-response. Pathway enrichment analysis was performed to understand the role of the biomarkers in disease pathophysiology. Stratification of patients based on these biomarkers resulted in correct prediction of drug response in 8 out of 11 patients.




For 118 cell Lines: Data collection & Normalization (expression, mutation, response class)



Our contribution

- ✓ 8 biomarkers identified for drug response.
- ✓ 9 patients' data were predicted correctly out of 11.
- ✓ 82% prediction accuracy.
- ✓ Transition from NHL to other tumor types.
- ✓ Gene signatures used to perform sub type-level analysis and patient stratification.
- ✓ Establish the immune-modulatory role and defined MOA.
- ✓ Opened possibilities for combinations with IO agents.

Our service portfolio

 <p>Data</p>	<p>Data curation Filter out the noise, focus your attention</p> <p>Clinical data Analysis-ready data for informed clinical decision-making</p> <p>Semantic data Refine your decisions, find your value</p>
 <p>Insights</p>	<p>Bioinformatics Illuminating the path to faster discoveries</p> <p>Data science Unlock the power of data</p> <p>Visualization Pictures paint a thousand words</p>
 <p>R&D technology</p>	<p>Product design and development Unlock your potential with data-driven design and development</p> <p>Cloud enablement Optimize your output on the cloud</p> <p>Data engineering Mitigate risks, protect your data, and rationalize your portfolio and processes.</p>



Where data means more

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