#### **Case Study**





Identification of Predictive Biomarkers and Applications in Patient Enrichment Strategies

## The 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.

## About the Client



INDUSTRY Small Pharma





THERAPEUTIC AREA 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.

# The Excelra 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)



## Excelra's Contribution

![](_page_1_Figure_1.jpeg)

## Excelra's Service Portfolio

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

For more information, visit https://www.excelra.com/clinical/#precision\_oncology

![](_page_1_Picture_5.jpeg)

#### About Excelra

Excelra's data and analytics solutions empower innovation in life sciences across the value chain from discovery to market. The Excelra Edge comes from a seamless amalgamation of proprietary curated data assets, deep domain expertise and data science. The company's multifaceted teams harmonize and analyse large volumes of disparate unstructured data using cutting-edge technologies. We galvanize data-driven decisions to unlock operational efficiencies to accelerate drug discovery and development. Over the past 18 years, Excelra has been the preferred data and analytics partner to over 90 global clients, including 15 of the top 20 large Pharma.

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