

# DETERMINING ENDOTYPE RESPONSE & STRATIFYING PATIENTS

A client wished to understand the endotype response of drugs in oncology, leveraging public & enterprise data, to identify patients most likely to respond to therapy

## SITUATIONAL ANALYSIS

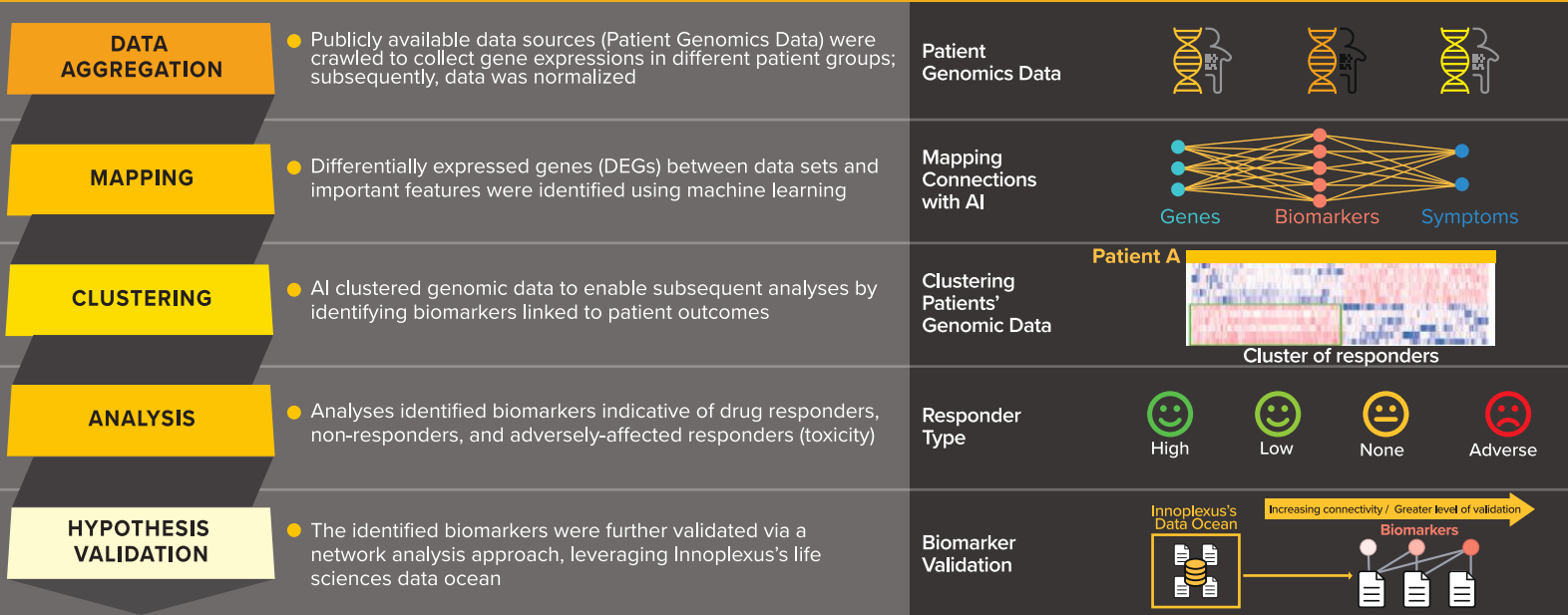
- The client sought to understand the endotype response for three drugs in breast cancer
- The patient endotype criteria used included:
  - Clinical Presentation
  - Symptoms
  - Demographics
  - Lab Values
  - Short Genetic Variations (SNPs<sup>1</sup>)

1. SNP: Single-nucleotide polymorphism

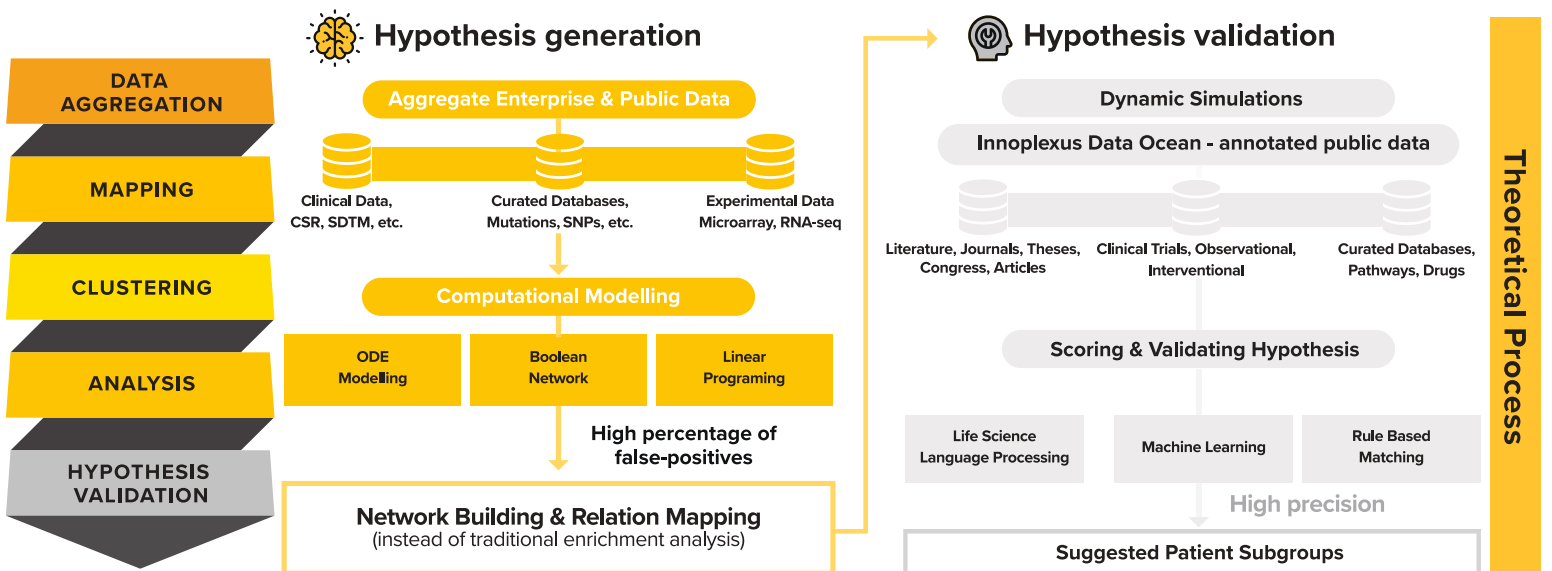
## SOLUTION

- Customized Genomic Marker Dashboard**
  - To assist the client in optimizing clinical trial patient stratification, by level of response to therapy, Innoplexus identified patient endotypes using public and the client data
- Innoplexus developed a dashboard capable of:**
  - Connecting endotype responses to published literature and the client's internal clinical trial data
  - Continually integrating new data streams (e.g., from additional clinical trials) to update endotype response predictions

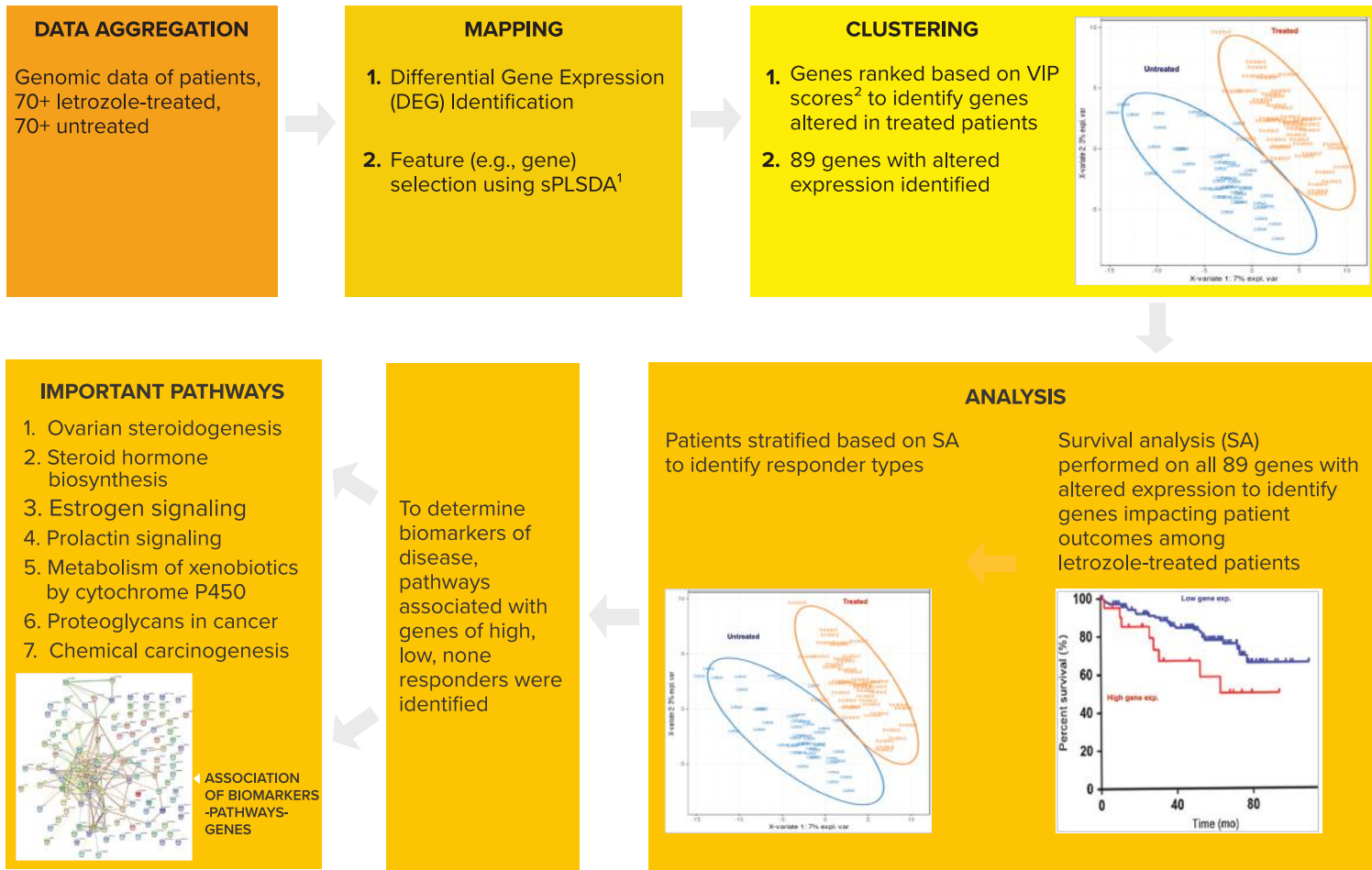
Innoplexus identified endotype responses in five steps: patient data aggregation, mapping, clustering, analysis, and hypothesis validation



Patient level data from public & enterprise data was passed through AI-powered computational algorithms to generate initial set of potential biomarkers and patient responsiveness



# Innoplexus generated hypothesis by examining data from 100+ patients, identifying 89 genes with altered expression, analyzing survival outcomes, and connecting outcomes to biomarkers



Actual Process

1. sparse Partial Least Squares Discriminant Analysis

2. A VIP score is a measure of a variable's importance in the PLS-DA model. It summarizes the contribution a variable makes to the model

## The identified biomarkers were validated statistically by assessing their implications in the Innoplexus life sciences data ocean

