

# Pharmacodynamic Biomarkers

## COMPANY

Mid-sized pharma

## PROBLEM

Unmasking potential pharmacodynamic biomarkers to confirm mechanism of action and drive drug development in clinical trials.

## BACKGROUND

Pharmacodynamic (PD) biomarkers are measurable indicators of the effect of therapeutics on targets in organisms. A PD biomarker can play a critical role in selecting rational combinations of targeted therapeutics and guiding the dosing and schedule of treatment to maximize the efficacy and minimize the toxicity of the targeted therapy. Furthermore, while mechanism of action (MOA) remains the guiding principal in pre-clinical discovery, PD tools can be used to confirm it in patients and enhance the overall drug development process. However, while developing accurate PD assays remains a critical challenge, combing through existing data to find potential candidates remains equally problematic. The challenge is at its highest when trying to find PD candidates for first-in-class drugs and/or therapies against MOA in novel indications.

## SOLUTION

Scientific data and evidence documented from years of clinical trials, pre-clinical research and other more reliable biomedical research is dispersed across decades of published research papers, with each piece of knowledge a vital link in a chain that can unravel the potential impact of modulating MOA against particular indications. Galactic AI™ automatically captures high value systems biological data, present within

published research, in-context, to allow high precision models of indications to be constructed, revealing the effect of therapeutics and their likely PD biomarkers. PD biomarkers are ranked through a complex combination of both statistical and clinical weighting criteria, with context, such as medium (serum, urine, tissue etc.) captured.