[373] CYTOREASON: A MACHINE LEARNING MODEL OF THE IMMUNE SYSTEM FOR INFORMED DECISION MAKING IN DRUG DEVELOPMENT

Shai Shen-Orr[1], David Harel[2], Orit Shaked[3], Yair Benita[2], [1] Technion-Israel Institute of Technology / Cytoreason, [2] Cytoreason, [3] Cytoreason Ltd

Questions for Biotech/Pharma; Medical Devices and Health IT/Digital Health categories are:
   Answers should not exceed 60 words per question

Investment Rational

CytoReason has developed a machine learning model of the immune system. Our technology builds on public and proprietary sources to generate a broad data model which we leverage to partner with top-pharma and research-institutions, such as Pfizer and the Parker Institute for Cancer-Immunotherapy, de-risking decision-making while training our model. CytoReason management is experienced with strengths in systems-immunology and pharma-commercialization.

Business Strategy

CytoReason is revenue generating and is systematically developing a portfolio of milestones and royalty payments from its collaborations in the immunology field. These collaborations span discovery, development and post-market stages by identifying biomarkers and modeling a compound's mode of action. Our work is supporting patient stratification, companion diagnostics, prediction of adverse events and indication expansion.

Core Technology

CytoReason's technology uses machine learning to integrate multi-omic data and knowledge from literature to reconstruct cellular information and define the relation of cells to one another within and across conditions. Our platform organizes collaborators' data into a single, machine-readable, cell-level view of the immune-system which is then integrated into CytoReason's existing proprietary model (CytoReason's IP) to generate novel insights.

Product Profile/Pipeline

CytoReason has nine ongoing collaborations and is looking to expand its pharma partnerships. A typical collaboration would cover target discovery/validation, understanding disease mechanisms, or identifying clinical markers. We partner in co-development, target spin-off, and joint research on assets owned by CytoReason, by collaborator, or jointly owned.

What's Next?

Over the next two years, CytoReason will expand its model to cover new therapeutic areas and partner with midsize biotech companies. Our predictive power will continuedly grow as we add to our 600 cell-signature database and our 4,700 human trials sets. We expect our team to grow from 18 to over 40, becoming the one of the largest systems-immunology groups worldwide.