RESONANT THERAPEUTICS

High-throughput antibody identification based on the tumor microenvironment

New strategies for cancer therapeutic discovery are needed

Despite the wealth of data and dramatic increases in our understanding of tumor biology, most cancer therapeutic development programs focus on same few targets. Most candidates will fail after many years of research and development, due to failures in either safety or efficacy.

Resonant Therapeutics combines a biology-forward approach with machine learning to rapidly develop, functionally annotate, and promote novel therapeutic candidates.

The tumor micro-environment induces critical metatastatic functions

Epithelial cells must maintain contact with the basement membrane. Cancer cells only become malignant and activate migration and metastatic programming upon contact with the stroma and matrix factors.
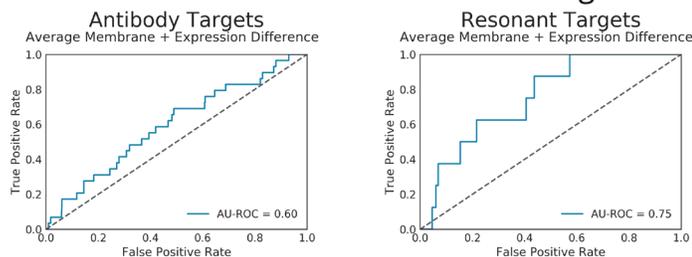
The Resonant approach embeds neoplastic cells in specifically designed 3D hydrogels, accurately reproducing the in vivo malignant tumor physiology. Resonant then generates and screens candidate antibodies against this critical tumor state.

Machine learning platform further prioritizes candidates

The Resonant platform generates unprecedented numbers of functional antibody therapeutic candidates. Standard secondary candidate validation is far too slow and expensive to apply broadly. Therefore, rapid candidate prioritization is essential.

Our machine learning platform enables automated, unbiased candidate selection. We focus on candidates often missed by other groups despite evidence suggesting functional roles in cancer biology.

Resonant targets show better tumor-to-normal state differentiation than clinical targets

Antibody Targets
Average Membrane + Expression Difference
AU-ROC = 0.60

Resonant Targets
Average Membrane + Expression Difference
AU-ROC = 0.75

Resonant utilizes a scalable, high throughput platform for target and candidate selection and prioritization
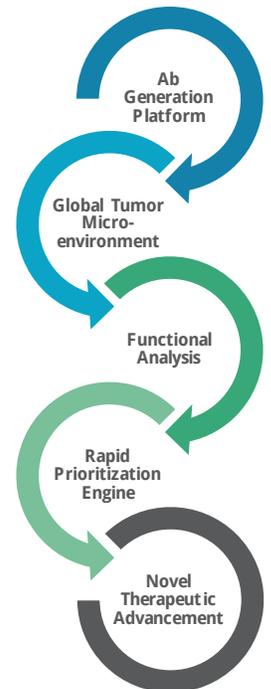
2000 candidates per cycle

Deep microenvironment knowledge-base

Proprietary functional annotation

Machine learning prioritization engine

Intellectual property assessment

25+ high-value candidates

- Ab Generation Platform
- Global Tumor Micro-environment
- Functional Analysis
- Rapid Prioritization Engine
- Novel Therapeutic Advancement

Management Team

John K. Westwick, Ph.D., Co-founder and CEO
Experienced biotech veteran (Signal, Celgene, Odyssey, Vala, others), entrepreneur and expert in phenotypic and high content screening and data analysis.

Stephen Weiss, M.D., Co-founder and CSO
Global leader in tumor microenvironment signaling. Member of the National Academy of Medicine; Director, University of Michigan Comprehensive Cancer Center.

Dan Watkins, Ph.D., Board Member
Managing Director and founder of Mercury Fund. Board and management experience in multiple biotech start-ups

Greg Landes, Ph.D., Antibody Development Advisor
Antibody development; formerly R&D leader at Takeda, Lexicon, Abgenix, Genzyme - multiple biologics in the clinic.

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