

BioCentury

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EMERGING COMPANY PROFILE

INTERROGATING IMMUNITY

BY VIRGINIA LI, STAFF WRITER

[OncoResponse Inc.](#) is repurposing [Theraclone Sciences Inc.](#)'s I-STAR discovery platform to identify antibodies produced by exceptional responders to cancer immunotherapy. By tapping patients' natural immune responses, OncoResponse hopes to find novel immune targets and anticancer antibodies that can be engineered into antibody-drug conjugates or bispecific antibodies.

Theraclone and the [University of Texas MD Anderson Cancer Center](#) jointly launched OncoResponse last year. The newco holds exclusive, worldwide rights to the I-STAR platform to discover oncology candidates.

CEO Clifford Stocks told BioCentury, "As immuno-oncology became more and more successful in getting remissions for cancer patients, we saw the opportunity to interrogate the humoral compartment of these elite responders to determine which antibodies that they're making are helpful or responsible for them getting to a complete response or remission."

Through a partnership with MD Anderson, OncoResponse has access to tissue samples and physiologic, prognostic and genotypic data from exceptional responders. The company is also partnered with [Oregon Health & Science University](#), which provides access to blood and tissue samples from patients with prostate cancer or chronic myelogenous leukemia (CML).

OncoResponse cultures memory B cells obtained from blood and tissue samples and then activates the cells to trigger the secretion of antibodies. I-STAR uses a high throughput, multiplex flow cytometry assay to screen antibodies for binding to various tumor cell lines. The company then determines the antibody sequences and inserts them into immortalized mammalian cells to produce antibodies for further study.

Stocks said it takes about three months to culture the B cells and start screening antibodies, and six more months to identify specific antibodies for *in vitro* testing.

OncoResponse has identified one lead compound that will enter *in vitro* and animal testing this year. Stocks declined

ONCORESPONSE INC.

Seattle, Wash.

Technology: I-STAR discovery platform to screen and sequence antibodies produced by memory B cells

Disease focus: Cancer

Clinical status: Discovery

Founded: 2015 by Clifford Stocks, Kristine Swiderek, Steven Gillis

University collaborators: [University of Texas MD Anderson Cancer Center](#), [Oregon Health & Science University](#)

Corporate partners: [Theraclone Sciences Inc.](#)

Number of employees: 18

Funds raised: \$12.5 million

Investors: [Alexandria Real Estate Equities](#), [Arch Venture Partners](#), [Baxalta Inc.](#), [Canaan Partners](#), [Theraclone Sciences Inc.](#), [University of Texas MD Anderson Cancer Center](#), [William Marsh Rice University](#)

CEO: Clifford Stocks

Patents: Undisclosed

to disclose the target, but said it will be tested in models of triple-negative breast cancer (TNBC), gastric cancer and colon cancer.

He said that another antibody has been identified for non-small cell lung cancer (NSCLC), though declined to disclose a development timeline.

[Atreca Inc.](#) has an Immune Repertoire Capture technology that uses next-generation sequencing to identify antibodies produced during an immune response, but it does not require culturing and it sequences cells prior to screening for antitumor activity. The company has access to cancer patient samples from undisclosed institutions, and plans to develop antibody-based therapeutics. President and CEO Tito Serafini declined to disclose a timeline for entering the clinic.

Stocks declined to compare I-STAR to Atreca's platform, but said OncoResponse's broad alliance with MD Anderson gives

it a competitive advantage. Beyond gaining access to patient samples, he said OncoResponse can “collaborate with parties at MD Anderson who have animal models we can use to validate antibodies in different tumor types and further downstream it could be a location where we conduct our clinical studies.”

He added that MD Anderson also provides “access to oncology expertise, including scientists who can help us elucidate mechanisms and determine which mAbs are best suited for taking forward as potential therapeutics.”

OncoResponse has raised \$12.5 million so far in a series A round led by [Arch Venture Partners](#), [Canaan Partners](#) and MD Anderson. Theraclone, which holds a 25% equity stake, is eligible for \$100 million in milestones and low single-digit royalties from the newco.

OncoResponse plans to raise an additional \$20 million before the round’s close. Stocks did not disclose a timeline for fund-raising, but said the total A round should enable the company to advance one candidate to an IND within two years.

The company plans to file patents for novel antibodies and their corresponding targets as they are validated *in vitro* and *in vivo*.

Theraclone previously used I-STAR to generate broadly neutralizing HIV antibodies and its Phase II mAb Human anti-M23 antibody (TCN-032) to treat influenza A.

[Gilead Sciences Inc.](#) licensed the preclinical HIV program in 2014 for an undisclosed sum. Theraclone said it plans to find a partner for Human anti-M23 antibody and for I-STAR to discover infectious disease candidates. 

COMPANIES AND INSTITUTIONS MENTIONED

[Atreca Inc.](#), Redwood City, Calif.
[Gilead Sciences Inc.](#) (NASDAQ:GILD), Foster City, Calif.
[OncoResponse Inc.](#), Seattle, Wash.
[Oregon Health & Science University](#), Portland, Ore.
[Theraclone Sciences Inc.](#), Seattle, Wash.
[University of Texas MD Anderson Cancer Center](#), Houston, Texas

REFERENCES

Cain, Chris. “[Atreca: Sequencing B cells.](#)” *BioCentury* (2012)

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