



SECTORAL ASSET MANAGEMENT

EDITORIAL: A Healthy Environment for Biotech Venture Investments

MAY 2017



Maha Katabi, Ph.D., CFA
expansion in exits.

Over the last decade, the universe of biotech venture investments has both expanded in size and demonstrated resilience in its ability to deliver a steady stream of happy exits. It is a stark contrast to the technology venture segment, where the explosion in funding has not been mirrored by an

increasing 15% to 40 per quarter since 2013. More important, there was a marked increase in venture funding available to these companies: from a yearly average USD 4.6bn in the 2007-2012 period, the amount of capital invested climbed steadily to USD 7.9bn in 2016, peaking a USD 9.9bn in 2015 (Data source: NVCA-Pitchbook 1Q 2017, funding to BioPharma). In addition, the exit market in this seg-

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ment of VC backed biotech witnessed over 80 IPOs per year during the 2013-2015 time period. Over the past two years, the rate is returning to a steady 25-30 IPOs per year (Data source: BioCentury, Sectoral (2017)). Finally, M&A transactions have remained stable throughout.

If one considers the universe of private companies to be a closed system, defined by the number of new startups, the funding provided to such emerging companies, and the number

of exits via IPO or M&A, then clearly this universe has steadily expanded. Indeed, it now represents a vast array of investment opportunities to capture value in medical innovation. This is a healthy environment, compared with the technology sector, where the explosion has been exponential in private-company formation and funding, yet has not been supported by a parallel expansion in the exit market.

The balance between company formation, capital available to support growth and development, and liquidity is favorable to rational capital deployment and the formation of investment portfolios with tailored risk profiles that suit investors' preferences. At Sectoral, we focus on venture growth investments in private healthcare companies. We look for companies that have built a solid foundation, want to expand their capabilities in product development, and are looking to secure access to fresh pools of capital from knowledgeable investors.

Maha Katabi, Ph.D., CFA
Partner, Private Equity

RECENT NEWS



May'17 Shockwave announced the appointment of Doug Godshall as president and CEO. Godshall was most recently the CEO and a director of HeartWare International (NASDAQ:HTWR), a leader in the left-ventricular assist-device market, where he served for 10 years until the company was acquired by Medtronic in August 2016 for \$1.1 billion.

May'17 The company also reported CE Mark for the company's Coronary Lithoplasty® System for the treatment of calcified plaque in conjunction with stenting in patients with coronary artery disease.

www.shockwavemedical.com



Mar'17 Aprea announced a collaboration with Memorial Sloan-Kettering Cancer Center to evaluate and characterize preclinical efficacy of APR-246 in combination with multiple anti-cancer agents and in multiple tumor types.

May'17 The first patient was enrolled in the Phase Ib/II clinical study of APR-246 in myelodysplastic syndrome. The study is sponsored by the Moffitt Cancer Center, with financial support from the Evans MDS Clinical Research Consortium and the MDS foundation.

www.aprea.com



Mar'17 eFFECTOR's lead product candidate, eFT508, has been granted orphan drug designation by the FDA for the treatment of diffuse large B-cell lymphoma. eFFECTOR also announced dosing of the first subject in a Phase 1/2 clinical trial of eFT508 in patients with B-cell hematological malignancies.

Apr'17 Positive preclinical data presented at the American Association for Cancer Research annual meeting suggest an important role for eFT508 in promoting an anti-tumor immune response.

www.effector.com



May'17 Unum delivered two presentations on its Antibody-Coupled T-cell Receptor (ACTR) platform at the 2017 American Society of Gene & Cell Therapy annual meeting. The oral presentation described a systematic Design-of-Experiments approach to identifying manufacturing processes for T-cell products that exhibit persistent activity and reduced propensity for exhaustion. The poster presentation provided data exploring the activity landscape of ACTR, identifying variants with optimized function for use in challenging therapeutic environments.

www.unumrx.com

COMPANY FOCUS: eFFECTOR Therapeutics

Q&A with President & CEO
Steve Worland, Ph.D.



Oncology represents the leading therapeutics category both in terms of licensing interest and drug approvals. How does eFFECTOR position its lead selective translation regulator, eFT508, in this space?

eFFECTOR's lead program, eFT508, is positioned to be the checkpoint inhibitor combination agent of choice. The eFT508 has the potential to enhance and extend the durability of response of checkpoint inhibitors in poor responder patient populations. eFT508, is a novel, potent and highly selective oral small molecule inhibitor of MNK1/2 and is currently completing dose escalation in Phase 1 portion of the Phase 1/2 clinical development targeting multiple solid tumors and lymphoma. eFT508 is an immuno-oncology agent that has demonstrated intrinsic effect on the tumor cell and extrinsic effects on the immune infiltrating cell types in the tumor. Through both of these mechanisms, eFT508 is impacting tumor cell growth and survival as well as ability of the immune system to recognize and destroy the tumor. Because of activity in immune cells, eFT508 induces anti-tumor immunity alone and synergizes with checkpoint inhibitors.

Where do you see eFFECTOR 5 years from now?

In five years, eFFECTOR will successfully validate the novel selective translation regulators (STRs) class of drugs and further solidify its position as the industry STR experts. The company will have established proof-of-concept in multiple oncology indications in combination with checkpoint inhibitors and with additional therapeutic modalities such as cell therapy or vaccine. In addition, eFFECTOR is building a broad pipeline of proprietary STRs, each with a unique activity spectrum across a range of oncology and autoimmune indications.

What are your main challenges?

eFFECTOR has developed an innovative and well thought-out approach to our proof-of-concept clinical trials which will overcome the current challenge of developing oncology drug outcomes in a rapidly changing oncology treatment landscape. The current clinical plan accounts for anticipated drug approvals and shifts in treatment algorithm to deliver meaningful clinical outcomes best positioned in the future landscape.

How would you characterize your interaction with the Sectoral team?

The Sectoral team is rigorous in their analysis, i.e. "good tough", in that they ask hard questions but they are the right hard questions to ask. Once they invested, they have become very helpful partners, still asking the right questions and brainstorming about

ways to address the different challenges all biotech companies face. They are particularly adept at fusing a scientific analysis of our product candidates with a business analysis of returns for investors.

Sectoral invested in eFFECTOR Therapeutic Series B financing in February of 2016

ABOUT PRIVATE INVESTMENTS AT SECTORAL

Founded in 2000, Sectoral Asset Management Inc. is an industry-leading specialist in managing global investment portfolios in the healthcare sector. Sectoral's first private equity investments were made by allocating assets to this class from our small-cap funds. Since then, we have built on our early successes backing innovative private companies and launched the first dedicated fund to private companies in 2015. Investment focus is maintained on late-stage development for drugs and medical technologies addressing significant markets and having high potential for approval. We leverage Sectoral's established healthcare expertise and capabilities across public- and private-company investments to capture meaningful value creation for our investors.

INVESTMENT TEAM



Michael Sjöström, CFA
Sectoral CIO
Co-founded Sectoral in 2000
MBA (St. Gallen)



Maha Katabi, Ph.D., CFA
Partner
> 15y life science investor
Ph.D. (McGill)



Howard Riback, CPA, CA
Director
Ex Partner & CFO Ventures West



François Beaubien, Ph.D
Associate
Ph.D. (McGill); MBA (UBC)



Olivier Brosseau, MBA
Associate
MBA (McGill)

Patrice Coissac
Industry Partner
Ex President of Alexion International



Alain Gilbert
Industry Partner
Founder of Bionest Partners



François Nader, M.D.
Industry Partner
Ex President & CEO of NPS Pharma



Robert Heft, Ph.D
Industry Partner
Ex CEO & Director of Enobia Pharma



TO LEARN MORE ABOUT
PRIVATE INVESTMENT AT SECTORAL VISIT
sectoral.com/PE

OR
Contact us at
PE@SECTORAL.COM

1010 Sherbrooke St. West, Suite 1610, Montreal QC
H3A 2R7, Canada