



Outcome Capital Life Sciences Market Pulse

November 2023

Reach the Right Outcome



www.outcomecapital.com



OUTCOME CAPITAL | LIFE SCIENCES MARKET PULSE

Market Trends & Strategic Transactional Insights



Outcome Capital At A Glance...

A highly-specialized life sciences & healthcare advisory & investment banking firm providing middle-market transactional expertise underpinned by a value-added, market-aligned approach to strategy execution. Our industry-dedicated specialists leverage significant operational, strategic & scientific knowledge in sharing their insights on industry-defining transactions.



Life Sciences Verticals:

- › MedTech
- › Pharma
- › Biotech
- › Diagnostics
- › Life Sciences Services
- › Digital Health

Transaction Focus:

- › M&A
- › Management Buyouts & Roll-Ups
- › Partnering
- › Equity Financings

Outcome Capital Pulse: Monthly Insights of Life Sciences Deal Action & Drivers

Outcome Index Tracker

- › Custom medtech, biotech/pharma, diagnostics, services & healthtech indices benchmarked to the S&P500

Transaction Lineup

- › Snapshot of noteworthy life sciences deals highlighting industry-defining activity

Highlighted Transactions

- › Strategic analysis from Outcome Capital's life sciences-dedicated deal team



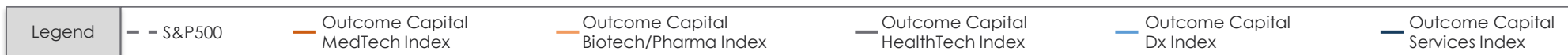
Outcome Index Tracker



OUTCOME CAPITAL | LIFE SCIENCES MARKET PULSE



Outcome Capital Index Tracker (LTM)



Outcome Capital MedTech Index

Outcome Capital Biotech/Pharma Index

Outcome Capital HealthTech Index

Outcome Capital Diagnostics Index

Outcome Capital Services Index



November 2023 | Transaction Lineup

OUTCOME CAPITAL | LIFE SCIENCES MARKET PULSE

November 2023 Transaction Lineup



Date	Target	Buyer/ Investor	Target Description	Deal Type	Deal Value (\$M)	Up-Front Payment (\$M)	Vertical
11/30/2023	immur.gen	abbvie	Developer of first-in-class antibody-drug conjugate platform approved for platinum-resistant ovarian cancer	M&A	\$10,100	\$10,100	Biotech/ Pharma
11/29/2023	ascendis pharma	TEIJIN	Developer of technologies to transiently ink an inert carrier to a parent drug with known biology	Partnership	\$245	\$70	Biotech/ Pharma
11/29/2023	PHENOMIC AI	Boehringer Ingelheim	Developer of a proprietary single-cell transcriptomics platform to overcome tumor stroma within solid tumors	Partnership	\$509	\$9	Biotech/ Pharma
11/28/2023	AVIDITY BIOSCIENCES	Bristol Myers Squibb	Developer of a new class of RNA therapeutics called Antibody Oligonucleotide Conjugates (AOCs)	Financing	\$2,300	\$100	Biotech/ Pharma
11/28/2023	PRISM BIOLABS	Lilly	Development biotechnology company designing small molecule inhibitors of protein-protein interaction	M&A	\$660	Undisclosed	Biotech/ Pharma
11/26/2023	NEURALINK		Brain-computer interface company capable of reading data from groups of neurons through thread-like devices	Financing	\$323	N/A	MedTech

[Hyperlinked
to Press
Release](#)

MedTech

Biotech/Pharma

HealthTech

Diagnostics













Life Science Tools

Services

OUTCOME CAPITAL | LIFE SCIENCES MARKET PULSE

November 2023 Transaction Lineup



Date	Target	Buyer/ Investor	Target Description	Deal Type	Deal Value (\$M)	Up-Front Payment (\$M)	Vertical
11/23/2023			Bacterial delivery platform to deliver immune-modulating proteins directly to the tumor micro-environment	M&A	\$509	Undisclosed	Biotech/ Pharma
11/22/2023			Developer of a porous, biocompatible, resorbable scaffold to promote natural regeneration of the articular cartilage	M&A	\$330	\$180	MedTech
11/21/2023			Developer of a next-generation percutaneous ventricular assist device to minimize vascular complications	Financing	\$40	N/A	MedTech
11/21/2023			Leader in the activation of cellular recycling processes to treat neurodegenerative & rare diseases	M&A	\$610	Undisclosed	Biotech/ Pharma
11/16/2023			Developer of a platform combining medicinal chemistry & lymphatic targeting for new oncology drugs	Financing	\$37	N/A	Biotech/ Pharma
11/16/2023			Immunobiologics platform delivers both sustained immune activation & tumor cell targeting in a single agent	Financing	\$37	N/A	Biotech/ Pharma

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 MedTech

 Biotech/Pharma

 HealthTech

 Diagnostics

 Life Science Tools

 Services

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Date	Target	Buyer/ Investor	Target Description	Deal Type	Deal Value (\$M)	Up-Front Payment (\$M)	Vertical
11/16/2023			Developer of intraoperative molecular imaging agents to target and illuminate cancer during surgery	Financing	\$30	N/A	Biotech/ Pharma
11/16/2023			A biotechnology company developing biologic therapeutics to restore immune homeostasis	M&A	\$195	N/A	Biotech/ Pharma
11/15/2023			A therapeutic oncology company using a single radiotracer injection for metastatic tumor radiotherapy	Financing	\$105	N/A	Biotech/ Pharma
11/15/2023			Medical diagnostics company focused on early detection to diagnose immune-mediated diseases	Financing	\$84	N/A	Diagnostics
11/15/2023			Developer of self-serve 'CarePods' which use artificial intelligence to screen and diagnose health conditions	Financing	\$100	N/A	HealthTech
11/15/2023			Developer of a minimally-invasive technology designed to bring blood and oxygen to tissues in the foot	M&A	\$415	\$250	MedTech

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to Press
Release](#)

MedTech

Biotech/Pharma

HealthTech

Diagnostics













Life Science Tools

Services

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Date	Target	Buyer/ Investor	Target Description	Deal Type	Deal Value (\$M)	Up-Front Payment (\$M)	Vertical
11/14/2023			Pioneering the development of novel pharmaceutical treatments for rare CNS disorders & other brain diseases	Partnership	\$771	\$771	Biotech/ Pharma
11/9/2023			Biopharmaceutical company dedicated to providing innovative metabolic solutions	Partnership	\$2,010	\$185	Biotech/ Pharma
11/9/2023			Provider of AI-powered imaging analysis software enabling physicians' assessment of cardiovascular diseases	Financing	\$80	N/A	Diagnostics
11/9/2023			Clinical stage TechBio company decoding biology to industrialize drug discovery	Partnership	\$1,500	Undisclosed	Biotech/ Pharma
11/3/2023			Focused on eliminating left atrial appendage (LAA) in patients with non-valvular atrial fibrillation (Afib)	M&A	\$400	\$400	MedTech
11/2/2023			Developing highly targeted, small molecule medicines for broad spectrum of devastating diseases	Financing	\$175	N/A	Biotech/ Pharma

[Hyperlinked to Press Release](#)


 MedTech

 Biotech/Pharma

 HealthTech

 Diagnostics

 Life Science Tools

 Services



Highlighted Transactions



J&J Steps Back Into LAA With \$400M Cash Outlay For Pre-Commercial Asset

LAMINAR

Target

\$400M+

Deal Size

Johnson & Johnson
MedTech

Buyer



Oded Ben-Joseph, PhD, MBA

Managing Partner

Outcome Capital, LLC

oben-joseph@outcomecapital.com

“

As J&J continues to reshape their MedTech group after the acquisition of Abiomed and announcing pipeline reprioritization, the most recent acquisition of Laminar offers a reminder of their market leadership position under the Biosense Webster brand. Through the \$400M+ acquisition, J&J has brought in-house a left atrial appendage (LAA) device to complement their existing catheter ablation solutions for Atrial Fibrillation (AFib). While still a pre-approved asset, Laminar's approach represents a therapeutic shift from occlusion to elimination of the appendage. In addition to irregular heart rhythms, patients suffering from AFib are at a significant risk of developing blood clots in the LAA leading to strokes; and thus, these devices have become an essential tool for physicians. The Laminar device provides J&J a differentiated solution to compete with market leaders Boston Scientific (Watchman) and Abbott (Amplatzer Amulet). Interestingly, this transaction is not J&J's first attempt to enter the LAA space. In 2015, J&J acquired Coherex Medical (an Outcome Capital transaction), developed an occlusion device. While the development of that product didn't go as we collectively expected, it is clear that the market continued to be of keen interest to J&J. The Laminar solution seems to be offering the next generation of LAA devices by effectively removing the LAA as opposed to traditional occlusion. We look forward seeing J&J complete development and penetrate the existing duopoly in the marketplace.

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EvolveImmune Therapeutics Hauls In \$37.4M For Novel Immunotherapies



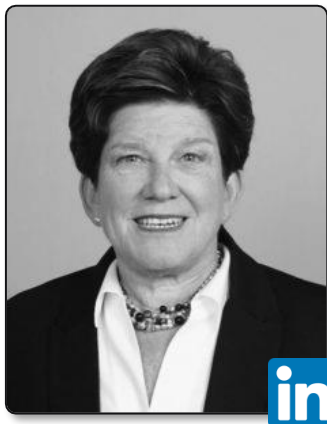
Target

\$37M

Deal Size



Investors



Ellen Baron, PhD

Managing Director
Outcome Capital, LLC
ebaron@outcomecapital.com

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Just when many life science investors had deprioritized immune-oncology investment opportunities, a syndicate of top-tier life science industry investors including BMS, Pfizer Ventures, Solasta Ventures, Takeda Ventures, and others have supported EvolveImmune Therapeutics with sufficient cash runway to enter the clinic in 2024. EvolveImmune Therapeutics uses CRISPR gene-editing technology to discover drugs for cancer and autoimmune diseases and is helmed by veteran Connecticut venture capitalist Stephen Bloch, MD. The company has already attracted early-stage backing from some large pharmaceutical firms. Bloch, a longtime partner at Canaan Partners, teamed with Charles Fuchs, MD, head of Yale's Smilow Cancer Center, and geneticist Sidi Chen to co-found EvolveImmune in 2019. The company's immunotherapies are building a pipeline of novel therapeutic candidates against numerous targets that are expressed on multiple immune cell types by leveraging its proprietary in vivo target discovery platform, enabling doctors and physicians to provide better treatments to patients with autoimmune and various other diseases. The EVOLVE platform is designed to unleash potent, selective, and integrated T cell costimulation to bypass low tumor immunogenicity, conditionally activate adaptive immunity, and reduce T cell dysfunction, to address unmet needs for the treatment of solid and hematologic tumors. This is achieved through finely tuned T cell receptor and CD2 costimulation optimized for CD8 T cell function.

”

Autifony New Deal Provides Comprehensive Development Path For Neuro Targets



\$771M

Deal Size



Buyer



Paul Mieyal, PhD, CFA
Managing Director
Outcome Capital, LLC
pmieyal@outcomecapital.com

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During the BIO conference in June, Jazz's CEO stated that it was a good time to be acquiring innovation and that Jazz was looking at a variety of potential transactions. Following through in November, Jazz inked a \$771M deal plus royalties with Autofony for drug candidates against two ion channel targets associated with neurological disorders. It's a very early-stage deal, so the bulk of the value is weighted on back-ended biobucks. In a structure that efficiently allocates operational and financial resources, Autofony will deploy its expertise in drug discovery and preclinical development, and Jazz will pick up the baton for clinical trials and commercialization. This wasn't a large current cash outlay for Jazz, so look for them to remain active as the global biotech industry looks ahead to the JP Morgan conference in a few weeks.

”

Neurotech Firm Neuralink Raises \$323M Series D



\$323M
Deal Size



Karl Hess, MBA
Managing Director
Outcome Capital, LLC
khess@outcomecapital.com

“

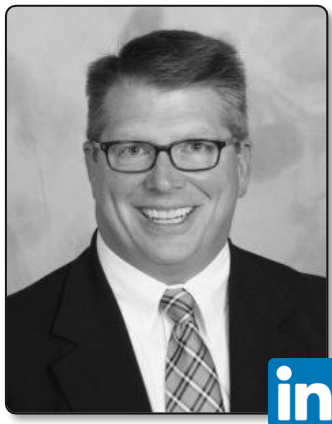
Neuralink, which was founded in 2016 and can count the world's richest person (Elon Musk) amongst those on its capitalization table, has recently added \$43 million to its Series D round, for a total of \$323 million for the round, and more than \$686 million in total funding, over six rounds. Peter Thiel's venture capital firm Founders Fund led the latest round, with 31 other investors participating. While the most recent post-money valuation wasn't made public, reports from last June suggested that the company was valued at around \$5 billion at that time. Neuralink has developed a sewing machine-like device capable of implanting ultra-thin threads inside the brain. The threads connect to a custom-designed chip with electrodes that can read data from groups of neurons. Neuralink's ostensible innovation, however, lies in making the implants wireless and increasing the number of implanted electrodes. Neuralink won approval from FDA in May to run human clinical trials and the company began recruiting participants in September for a trial of 11 patients to help those with paralysis control devices. But despite its relative success, the company has not achieved its current stage without attracting considerable controversy, with concerns over lab animal safety, the firm's work environment, its management team, and statements Musk himself has made, which were highlighted by several U.S. House of Representatives members, as potential securities fraud violations.

”

Cytovale Secures \$84M Series C Funding To Drive Commercial Expansion



\$84M
Deal Size



Craig Steger

Director

Outcome Capital, LLC

csteger@outcomecapital.com

“

Sepsis is one of the last frontiers in diagnostic medicine and causes about 270,000 hospital patient deaths each year in the US. When left undiagnosed and under treated, the patient's chances of death increase by ~6% per hour but making this diagnosis can still be very difficult for many physicians. Cytovale's recent FDA clearance for their rapid sepsis detection system, IntelliSep, aims to help physicians stratify septic patients in ~10 min., allowing them to take rapid action to initiate treatment for septic patients. Cytovale recently secured \$84M Series C funding. The round was led by current investor Northwest Venture Partners, and joined by new investors Sands Capital and GHIC. This financing is targeted at driving commercial expansion and increasing IntelliSep uptake in the market.

”

Inari Makes A Splash With \$415M LimFlow Acquisition

LimFlow
Transforming CLTI

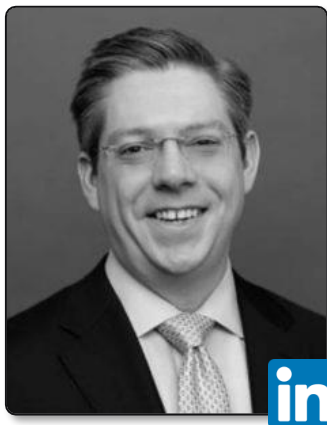
Target

\$415M

Deal Size

INARI
MEDICAL®

Buyer



Thomas Busby, MBA
Senior Vice President
Outcome Capital, LLC
tbusby@outcomecapital.com

“

After a market high in 2021 approaching \$120/share, Inari Medical investors have cooled with a series of tepid earnings calls and lagging profitability. Rather than become a takeover target, Inari has doubled down on their salesforce (and balance sheet) with plans to acquire LimFlow for \$415M, including \$165M due at closing. Notably, Inari participated in LimFlow's 2022 equity raise, which likely set the stage for the recently announced acquisition. MedTech CEO's should take note: bringing a strategic into your cap table can both validate your technology and market, and provide an early foundation for exit.

”

Q32 Bio To Begin Trading In Public Market Through Reverse Merger


HOMOMOLOGY
Medicines, Inc.

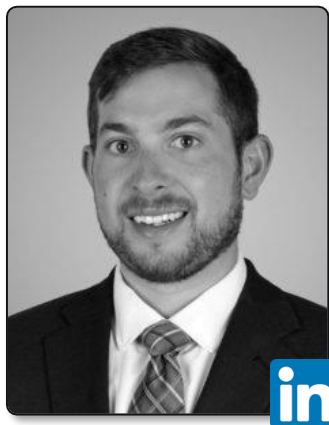
Target

\$195M

Deal Size


Q32 BIO

Buyer



Nick Frame, PhD

Vice President

Outcome Capital, LLC

nframe@outcomecapital.com

“

As we approach year end and look back on market dynamics, 2023 was defined by numerous macroeconomic challenges which shifted the financing landscape for public and private biotechs. Public biotech companies, including Homology Medicines, saw access to capital tighten and their market cap drop; while, private investors focused on extending portfolio company runways as opposed to leading new investment rounds for the next-stage of development. This dynamic has resulted in numerous public companies exploring strategic alternatives, with private biotechs exploring creative transactions to strengthen their balance sheets amid decreased VC activity. As a result, reverse mergers have offered an attractive funding avenue for private companies that have tapped the private markets. Q32 Bio, who previously raised over \$125M, is one company who took advantage of these dynamics and merged with Homology Medicine, wherein the resulting entity will have \$115 million in cash at the time of the transaction. This will fund activities for the next 30-36 months and enable key clinical readouts in the second halves of 2024 and 2025 for their lead programs in autoimmune and inflammatory diseases. The near-term key catalysts position Q32 well for life as a public company, but will dictate the company's success long-term and ability to raise additional capital. Our team looks forward to seeing how these newly public companies perform in the market in 2024 and beyond.

”

Phenomic AI & Boehringer Ingelheim Drug Discovery & Development Collaboration



\$509
Deal Size



Michael Casasanta, PhD
Senior Associate
Outcome Capital, LLC
mcasasanta@outcomecapital.com

“

Boehringer Ingelheim (BI) joins the ever-expanding list of biopharma leaders that have signed drug discovery partnerships with companies leveraging AI to identify novel therapeutic targets. Given the mixed results of previous attempts in AI-based drug discovery programs, BI is betting Phenomic's differentiated multi-modal AI strategy will be a winner. Phenomic incorporates spatial transcriptomics along with imaging data & RNA sequencing as the foundation for their unique single-cell-based approach to implement AI in the drug discovery process. Further adding to the significance of the collaboration is the potential impact of the target of any candidates emerging from this partnership. Phenomic has aimed its drug discovery engine at the tumor stroma rather than the cancer cells themselves. As the importance of the stroma is increasingly understood with respect to its highly active role in treatment failure, we expect more strategies to emerge targeting this aspect of tumor biology. As with all early-stage deals, this partnership has significant measures of risk mitigation for BI baked into the deal architecture, including a low upfront commitment of \$9M (just 1.8% of total deal value) as well as option rights and development milestones, all of which are dependent on clinical & commercial success. For Phenomic, the immediate infusion of cash and commitment of BI to cover pre-clinical & clinical development costs will enable Phenomic to pursue its own pipeline candidates as well as participate in any upside from successful products arising from its scTx platform.

”

Series C Round To Fuel Expansion Of Fluorescent Agent For Surgical Imaging

ON  TARGET
LABORATORIES.

Target

\$30M

Deal Size

Johnson & Johnson INNOVATION


3B FUTURE
Health Fund

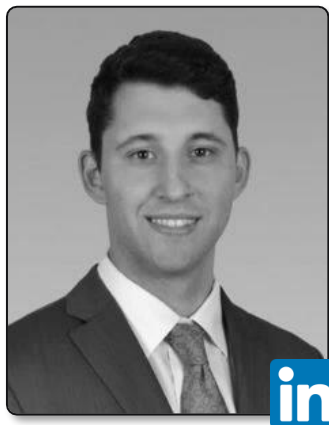
 JJD
elevate
ventures

OLYMPUS

H. I. G.
CAPITAL

 ATB Pension Fund
of the Christian Church
doing smart things

Investors



Carey Gallant, MBA

Associate

Outcome Capital, LLC

cgallant@outcomecapital.com

“

Despite the recent, persistent, headwinds within the broader life sciences financing landscape, Indiana-based On Target Laboratories has successfully secured an additional \$30M through the closing of its Series C round. The company specializes in the development of intraoperative molecular imaging agents to target, and illuminate, lung and ovarian cancers during surgery. Proceeds from the round will be used to fuel the commercial expansion of CYTALUX, On Target's novel compound, which remains the only FDA approved molecular imaging agent for lung and ovarian cancer resections. On Target's financing is timely, as Stryker recently released its '1788 Platform' – in September – a next-generation minimally invasive camera capable of improved visualization through optical imaging agents. The differentiating factor with this news is Stryker's 1788 Platform is the only minimally invasive surgical camera currently cleared for use with CYTALUX. The recent investment empowers On Target to accelerate the commercialization of its novel technology, and further positions the company as a leader within intraoperative molecular imaging. Participation from leading investors, H.I.G. Capital, Johnson & Johnson Innovation, Olympus Innovation Ventures, and others, underpin the clinical significance of CYTALUX's potential to accelerate the current oncology surgical treatment landscape.

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Forward Raises \$100M To Launch AI-Enabled, Autonomous Clinic Technology

 **FORWARD**

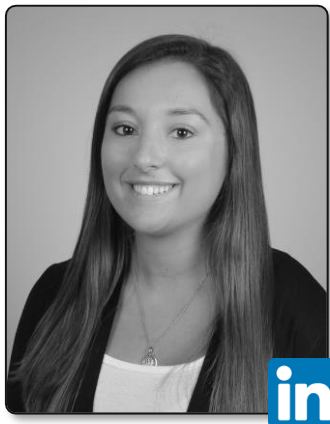
Target

\$100M

Deal Size

ADIA

Investors



Elena Bonetti

Senior Analyst

Outcome Capital, LLC

ebonetti@outcomecapital.com

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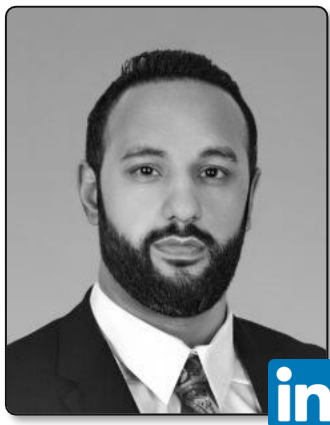
Forward recently raised its \$100M Series E round to support the continued development and launch of its CarePods. Forward, an emerging player in primary care, is currently designing CarePods as AI-enabled kiosks to automate medical check-ups. This technology will ultimately enable patients to receive care in malls, gyms, offices and other high-traffic areas. Given the shortage in primary care providers as well as ongoing health-conscious consumer trends, this is a natural progression in healthcare, as it increases physician efficiency while bringing care closer to the consumer. Although this has been partially satisfied with the increased use of telehealth, the physician-monitored physical exam that CarePods provide ultimately bridge the gap between purely remote care and the doctor's office. As a result, these autonomous clinics support personalized care as well as greater access to healthcare as a whole.

”

Strategic Leap: Merck's Timely Acquisition Of Caraway Therapeutics



\$610M
Deal Size



Fahid Naseer, MBA
Senior Analyst
Outcome Capital, LLC
fnaseer@outcomecapital.com

“ Merck & Co. has agreed to acquire Caraway Therapeutics, a neurodegenerative disease-focused biotech company, for up to \$610 million. Caraway, known for its lysosome-activating approach to treat neurodegenerative and rare diseases, has three preclinical small molecules targeting Parkinson's, ALS, and lysosomal storage diseases. According to the agreement, Merck will, via a subsidiary, acquire all the shares of Caraway. This deal includes additional earnout milestones based on the progress of certain pipeline candidates under development. This timely acquisition, a move from being a shareholder to an acquirer, adds to Merck's portfolio in innovative therapies for neurodegenerative conditions. ”

Abbvie Acquires ImmunoGen To Secure Spot In Ovarian Cancer Therapeutics

immunogen

Target

\$10B

Deal Size

abbvie

Buyer



Roisin O'Brien, PhD

Analyst

Outcome Capital, LLC

robrien@outcomecapital.com

“

In the final hour, Abbvie secures its position as the third-largest biotechnology buyout of the year with a \$10B deal to acquire ImmunoGen. Founded in 1981, ImmunoGen has a long-standing history pioneering antibody-drug conjugates (ADC) or the combination of targeted antibodies with chemotherapy molecules for cancer treatment. Immunogen is mostly known for its development of its first-in-class, ADC therapy, Elahere, which received FDA approval for the treatment of advanced ovarian cancer in November of 2022. This acquisition propels Abbvie's entry into targeting solid tumor and nicely diversifies their oncology pipeline from their traditional niche of blood cancer therapeutics. Notably, incorporating a de-risked, on-market therapy with proven survival benefits allows Abbvie to boost sales as they await clinical trials and the approval of experimental cancer drugs in their pipeline. At a purchase price of \$10B, Abbvie has agreed to acquire all outstanding shares of ImmunoGen for \$31.26 per share in an all-cash transaction. After making this big of a splash in the market and Elahere expectations to generate \$500M in 2024, it will be interesting to follow the drugs trajectory under Abbvie's new direction.

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PULSE



20 Custom House St.
Suite 1200
Boston, MA 02110
(617) 431-2278

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www.outcomecapital.com

