



Outcome Capital Life Sciences Market Pulse

December 2022

Reach the Right Outcome



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OUTCOME CAPITAL | LIFE SCIENCES MARKET PULSE

Strategic Transactional Insights & Market Trends



Outcome Capital At A Glance...

A highly-specialized life sciences and 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

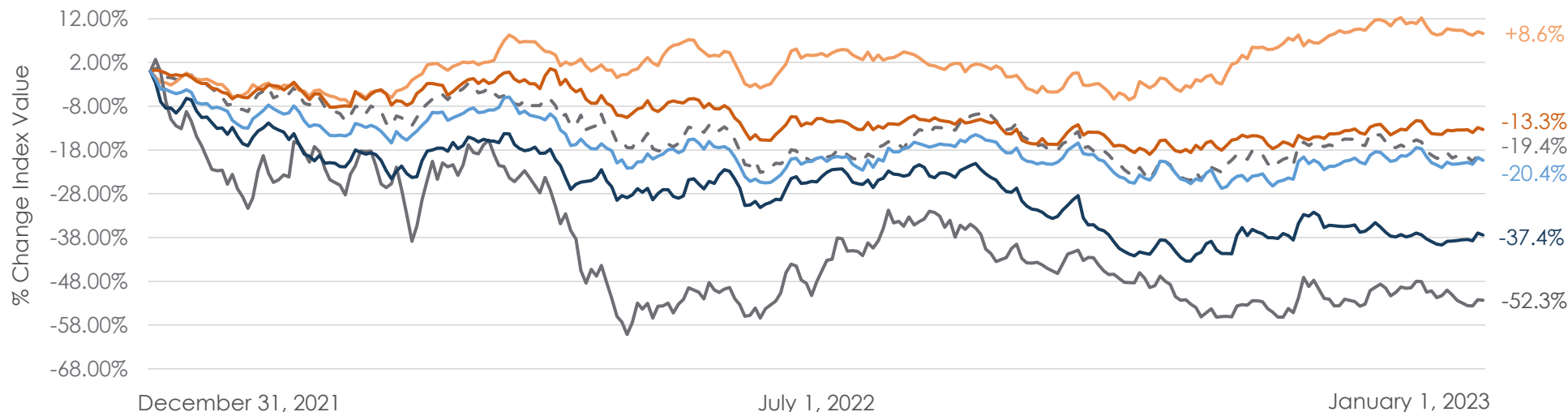
- › Strategic analysis from Outcome Capital's life sciences-dedicated deal team



Outcome Index Tracker

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Outcome Capital Index Tracker (LTM)



Legend	-- S&P500	— Outcome Capital MedTech Index	— Outcome Capital Biotech/Pharma Index	— Outcome Capital HealthTech Index	— Outcome Capital Diagnostics Index	— Outcome Capital Services Index
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Highlighted Transactions

Amgen Bolsters Its Rare Disease Treatment Pipeline With Horizon Therapeutics



Target

\$28.0B

Deal Size



Buyer

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In the midst of a challenging 2022 for both the public markets and biotech's clinical read outs, potential industry-altering M&A transactions did not materialize for the most part of the year. While numerous billion-dollar transactions were completed, Amgen's \$28B December acquisition of Horizon Therapeutics marked the largest biotech acquisition of 2022. While Amgen ultimately was the acquiring party, Horizon also attracted interest from other pharma giants: Johnson & Johnson and Sanofi. Horizon's strong pipeline and drug platform provide a foundation for refreshing Amgen's rare autoimmune and inflammatory disease portfolio, as its leading drugs in the category begin to approach loss of patent exclusivity. Although it may be perceived as a high price tag, Amgen expects the transaction to offset any potential impact from the loss of exclusivity as well as deliver multiple high-value pipeline candidate, making the transaction accretive by 2024.

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Merck KGaA Piles Into The ADC Approach For STING Agonist Payload Delivery



Target

\$830M

Deal Size



Partner



An approach that can directly target the tumor microenvironment with an immunomodulatory ADC has the potential to unlock novel therapeutics for cancer patients. The STING pathway is a fundamental means of generating innate immune response that can lead to anti-tumor activity and immunological memory. Mersana's extensive preclinical data demonstrate Immunosynthen's ability to enable highly targeted STING activation within both tumor cells and tumor resident myeloid cells while avoiding unwanted systemic effects has attracted significant Big Pharma attention. GSK also has a pact with Mersana on STING agonist ADCs. Last year, AstraZeneca signed a STING deal with F-star, and recently BioNTech signed a deal with Ryvu Therapeutics, but these deals come after others left the field. Novartis walked away from its STING program in 2019 and Nimbus also culled its efforts. Targeted delivery appears to be the key. Stay tuned to see if ADCs meet the challenge or alternative non-receptor mediated approaches unlock the riches of STING pathway modulation. Under the terms of the agreement, Mersana will develop novel ADC product candidates against up to two targets utilizing its Immunosynthen platform to conjugate proprietary antibodies from Merck KGaA. Pre-clinical activities will be split between the companies. Merck KGaA will be solely responsible for all clinical development and potential commercialization activities.



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Wave Life Sciences & GSK Collaborate For Novel Oligonucleotide Therapeutics



\$695M

Deal Size



Partner



Paul Bolno spent 4 years at GSK prior to joining Wave. Following Wave's prior transactions with Pfizer and Takeda, this newest collaboration with GSK brings him full circle. Like peptide hormones and antibodies, oligonucleotides represent a class of therapeutic molecules; however, Wave has differentiated itself with a unique manufacturing platform which enables generation of stereopure oligonucleotides. GSK and Wave expect to pursue targets across multiple disease areas. Wave will receive an upfront payment comprised of \$120M cash and a \$50M equity investment as well as potential milestone payments and royalties. This provides Wave with valuable runway into 2025 and another validating partnership to capitalize on its platform.



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MSO UpStream Healthcare Validates Medicare Success With \$140M Series B

UpStream

Target

\$140M

Deal Size



Investors

“

UpStream Healthcare, a North Carolina-based global risk MSO founded in 2018, announced a \$140 million Series B funding round, which brings its total funding to \$185 million and its post-money valuation to greater than \$600 million. UpStream's \$45 million A round occurred in November of 2021, at which time they stated that the funds would enable the company to “triple in size within a year”. While their success with regard to value-based revenues might not be public information, they were able to add approximately 75,000 Medicare patients in that time, and now claim 2,900 physicians on the “UpStream” platform. The B round was co-led by technology and global growth investors Dragoneer and Coatue with additional participation from Avidity Partners, Define Ventures and Mubadala. UpStream's pharmacy- and technology-centric approach aims to help (primarily) PCPs better manage risk in their senior populations, placing a pharmacist within the physician practice and utilizing its proprietary tech stack to predict and coordinate care, particularly for patients with the highest medical and social complexity. The company seems to be having some considerable success with their methodology, with claimed cost reductions of 20 percent across in-patient and post-acute spend categories, while still maintaining an average 4.5-star quality performance for those same practices.

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Strategic Acquisition Provides Key Technology to Expand



Target



Deal Size



Buyer

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The COVID pandemic resulted in a dramatic rise of diagnostic test providers, focusing on direct-to-consumer testing. Australian based Ellume is a prime example of COVID-centric business being punished as investors seek sustainable business plans, which include expanded testing menus and well-managed COGS. Early in 2021, Ellume was able to capture a \$232M contract with the US government for 8.5M COVID tests and to establish a US manufacturing site. The dramatic decline in COVID testing over 2022, and stiff competition in the at-home testing segment, saw Ellume file for bankruptcy in the fall of 2022, still owing ~\$96M. It was announced in Dec. the company will be acquired by their Australian competition, Hough Pharma for \$37.5M, unfortunately, providing little to the creditors and shareholders. However, the transaction will provide Hough Pharma with access to Ellume's fluorescent immunoassay technology, which may be the basis for future test menu expansion.

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PeptiDream Closes 2022 With 2 Major Research Collaborations



\$1.2B

Partnership

\$2.1B

Partnership

Deal Size



Partner



MERCK

Partner

Sponsors



On December 27th 2022, PeptiDream Inc. (OTCPK: PPTDF), a Japanese public pharmaceutical company announced two research collaborations with Eli Lilly and Co (NYSE: LLY) and Merck & Co Inc (NYSE: MRK), with estimated combined value of more than \$3.35B. The deal with Lilly focuses on the discovery and development of novel peptide drug conjugates ("PDCs") using PeptiDream's proprietary Peptide Discovery Platform System ("PDPS") technology. PeptiDream will receive an undisclosed upfront payment from Lilly and is eligible for development, regulatory, and commercial milestone payments potentially totaling up to ~\$1.24B, plus royalties on net sales. The Merck collaboration also focused on the discovery and development of novel PDCs of interest to Merck. Under the agreement, PeptiDream will receive an undisclosed upfront payment from Merck and will be eligible for development, regulatory, and commercial milestone payments potentially totaling up to \$2.1B, plus royalties on net sales.



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Investment Firm, Altaris, Launches Specialized CRO



Target

Undisclosed

Deal Size



Buyer

“

Life sciences-focused service companies addressing the increased demand in the broader healthcare industry have been the recent focus of many private equity strategies. Specifically, investors, including Arsenal Capital Partners, Summit Partners, Linden Capital, KKR, and Avesi Partners have identified a consolidation opportunity and have recently launched integrated platform investments. Altaris, a healthcare-dedicated investment company, launched a global CDMO late in December, which results from the merger of two prior investments, Kindeva Drug Discovery (previously acquired from 3M for \$650M) and Meridian Medical Technologies (previously acquired from Pfizer \$51M). The two companies complementary focus on drug-device combinations uniquely positions them with a differentiated service provider that we expect to address a growth market focused on alternative routes of administration such as inhalation, nasal, and intradermal.

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HotSpot Partners With AbbVie To Develop Immunomodulators For Novel Target



Target

\$335M

Deal Size

abbvie

Partner

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HotSpot Therapeutics and Abbvie have entered a collaboration to develop novel therapies for autoimmune disorders. The complex landscape and intertwined signaling pathways underpinning most of these diseases requires a vast arsenal to adequately treat. A significant hurdle the field faces is unlocking therapeutic targets that do not possess a traditional active site like many proteases or phospholipases where activity can be suppressed through covalent inhibition. HotSpot Therapeutics seeks to solve this problem by utilizing their Smart Allosteric platform to identify dynamic sites of allosteric inhibition to design novel molecules that modulate protein function. Together with AbbVie's considerable financial and product development resources, they hope to unlock previously undruggable targets by homing in on sites of allosteric inhibition rather than traditional enzymatic active sites. AbbVie seeks to grow its share of the immunology therapeutic market and bolster its existing portfolio and product pipeline by adding a novel target, IRF5, to its development plans. The significant upfront payment and future financial considerations for HotSpot's discovery stage asset signal the premium given to platform technologies that can unlock novel therapeutic targets and give a competitive edge for strategics that see clear line of sight to a finished product.

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Veranex Continues Aggressive Growth Strategy To Lead In MedTech Services



Undisclosed

Deal Size



Veranex has completed its eighth acquisition through its add-on of Fusion Biotech. As Veranex aims to position itself as the one-stop-shop for medical device development, its aggressive growth strategy targets highly-specialized, best-in-class tuck-ins to support every aspect from concept to commercialization. Fusion Biotech is a leading tech-enabled provider of IVD development solutions, offering highly efficient processes to bring new products to market. Leveraging the Veranex platform, Fusion Biotech is able to rapidly scale its operations. From the Veranex perspective, the addition of Fusion Biotech expands its product design engineering footprint geographically as well as enhances its current engineering offerings with proprietary software and firmware that accelerate R&D processes for clients.



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Strategic Acquisition Enhances Global Market Footprint



Target

\$523M

Deal Size

Boston
Scientific

Buyer

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Boston Scientific (NYSE: BSX) made an offer to acquire a majority (65%) equity stake in Acotec Scientific Holdings Limited (HKG: 6669) in mid-December for an upfront cash payment of approximately \$523M based on current exchange rates. Acotec is a leading Chinese MedTech company that offers a complementary portfolio of innovative interventional solutions, including drug-coated balloons. Furthermore, the company has reported double-digit growth over the last two years driven by a large sales force, R&D capabilities, and manufacturing expertise. This strategic investment enables Boston Scientific to establish a strong presence in the Chinese market and provides cross-selling opportunities for both companies. With China expected to be responsible for ~25% of the global MedTech market by 2030 (KPMG), Boston Scientific believes their strategic acquisition of Acotec will be key for unlocking future shareholder value. The deal is anticipated to close in the first half of 2023 and have an immaterial impact on 2023 adjusted EPS.

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December 2022 | Transaction Lineup

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December 2022 Transaction Lineup



Date	Target	Buyer/ Investor	Target Description	Deal Type	Deal Value (\$M)	Up-Front Payment (\$M)	Vertical
12/1/22	UpStream		Global risk, managed services organization providing physicians with the support & systems needed to improve healthcare for seniors.	Financing	140	N/A	HealthTech
12/1/22	lumen®		Developer of handheld hardware device to determine metabolic fuel usage & provide personalized food, exercise & sleep recommendations.	Financing	62	N/A	HealthTech
12/1/22	Carrick therapeutics		Oncology-focused biopharma company discovering & developing highly-differentiated therapies.	Financing	25	N/A	Biotech / Pharma
12/6/22	HOTSPOT THERAPEUTICS	abbvie	Discovery-stage IRF5 program targeting a new class of modulators for the treatment of autoimmune diseases.	Partnership	335	40	Biotech / Pharma
12/7/22	ellume	Hough.PHARMA	Developer of rapid COVID-19 tests using fluorescent immunoassay technology generating results in 15 minutes.	M&A	38	38	Diagnostics
12/7/22	APOGEE THERAPEUTICS		Biotechnology company advancing novel, potentially best-in-class therapies addressing immunological & inflammatory disorders.	Financing	169	N/A	Biotech / Pharma

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Date	Target	Buyer/ Investor	Target Description	Deal Type	Deal Value (\$M)	Up-Front Payment (\$M)	Vertical
12/11/22	acotec	Boston Scientific	Developer of medical device solutions designed for a variety of interventional procedures.	M&A	523	523	MedTech
12/12/22	HORIZON	AMGEN	Developer of potential treatments for rare autoimmune & severe inflammatory diseases.	M&A	28,000	28,000	Biotech / Pharma
12/12/22	LaunchPad Therapeutics	BLACK DIAMOND THERAPEUTICS NEA VERSANT ventures	Developer of early-stage mutant-selective monoclonal antibodies for oncology treatments.	Financing	30	N/A	Biotech / Pharma
12/13/22	WAVE LIFE SCIENCES	GSK	Preclinical RNA editing program targeting alpha-1 antitrypsin deficiency using proprietary PRISM discovery & development platform.	Partnership	695	170	Biotech / Pharma
12/13/22	FUSION BIOTEC	Veranex	Design & engineering leader for complex electro-mechanical diagnostics instrumentation & medical devices.	M&A	Undisclosed	Undisclosed	Services
12/13/22	HISTOSONICS	LUMIRA YOKUN VENTURE VENTURE INVESTORS SWIB STATE OF WISCONSIN INVESTMENT BOARD	Developer of non-invasive, novel sonic beam therapy to destroy unwanted tissue & tumors at sub-cellular levels.	Financing	85	N/A	MedTech

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12/15/22	MERIDIAN Clinical Research	Velocity CLINICAL RESEARCH	Multi-specialty site organization for Phase I-IV clinical trials with sites in >25 states & >1,500 clinical research professionals.	M&A	Undisclosed	Undisclosed	Services
12/15/22	synchron		Clinical-stage endovascular brain computer interface company adopting a minimally-invasive procedure to avoid the need for open brain surgery.	Financing	75	N/A	MedTech
12/15/22	MINERVAX		Late-stage biotech company developing a novel vaccine against Group B Streptococcus.	Financing	77	N/A	Biotech / Pharma
12/19/22	Kindeva DRUG DELIVERY	Meridian MEDICAL TECHNOLOGIES	CDMO developing drug-device combination products leveraging inhalation, transdermal & intradermal drug delivery technologies.	M&A	Undisclosed	Undisclosed	Services
12/19/22	Protillion BIOSCIENCES		Biotech company working to identify & optimize new protein therapeutics & accelerate biologic R&D productivity.	Financing	18	N/A	Biotech / Pharma
12/21/22	ETHRIS		Protective mRNA vaccine candidate targeting a broad range of Betacoronaviruses.	Partnership	20	20	Biotech / Pharma

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Date	Target	Buyer/ Investor	Target Description	Deal Type	Deal Value (\$M)	Up-Front Payment (\$M)	Vertical
12/22/22			Proprietary Immunosynthen STING-agonist ADC platform directed against up to 2 targets.	Partnership	830	30	Biotech / Pharma
12/23/22		-	Global medical device manufacturer of specialized interventional instruments for PCI & PTA procedures.	IPO	62	N/A	MedTech
12/23/22			Clinical-stage ConjuAll ADC technology platform providing optimized site-specific conjugation for up to 5 targets.	Partnership	1,250	Undisclosed	Biotech / Pharma
12/27/22			Proprietary Peptide Discovery Platform System technology used to identify high affinity macrocyclic peptide ligands.	Partnership	1,235	Undisclosed	Biotech / Pharma
12/27/22			Proprietary Peptide Discovery Platform System technology for peptide candidates for cytotoxic payload conjugation.	Partnership	2,100	Undisclosed	Biotech / Pharma
12/29/22			Developer of proprietary mRNA technology platform for innovative therapies in immunomodulation, protein replacement & differentiated vaccines.	M&A	16	16	Biotech / Pharma



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