

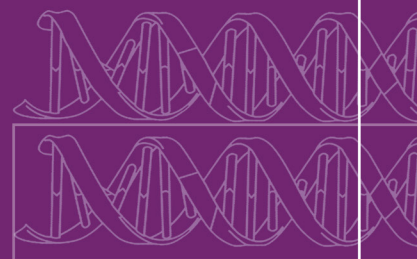
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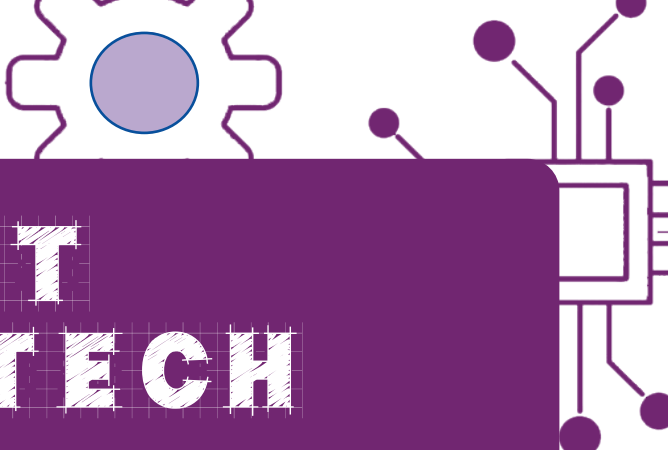
AUSTRALIA'S BIOTECHNOLOGY ORGANISATION

US INVESTMENT IN AUSTRALIAN LIFE SCIENCES SNAPSHOT 2023

CONDUCTED BY AUSBIOTECH

IN PARTNERSHIP WITH AUSTRADE





ABOUT AUSBIO TECH

AusBiotech is Australia's biotechnology organisation, working on behalf of members for more than 37 years to provide representation and services to promote the global growth of the Australian biotechnology industry.

AusBiotech is a well-connected network of over 3,000 members in the biotechnology, including therapeutics, medical technology (devices and diagnostics), digital health and agribiotech sectors. AusBiotech has representation in each major Australian state, providing a national network to support members and promote the commercialisation of Australian life science in national and international marketplaces.

AusBiotech is dedicated to the development, growth, and prosperity of the Australian life science industry, by providing initiatives to drive sustainability and growth, outreach and access to markets, and representation and support for members nationally and worldwide.

ABOUT AUSTRADE

The Australian Trade and Investment Commission (Austrade) is the Australian Government's international trade promotion and investment attraction agency. Austrade delivers quality trade and investment services to businesses to grow Australia's prosperity. Austrade's network of 1,200 experts across 67 international offices gives Aussie businesses a competitive edge in the global marketplace, and helps new international businesses establish operations in Australia.

To find out more visit www.austrade.gov.au or contact us at personalisedmedicine@austrade.gov.au



ACKNOWLEDGMENTS

This report was commissioned by AusBiotech, with initial data collection and analysis carried out by the Australian Trade and Investment Commission's (Austrade) US health investment team. Sincere appreciation is extended to all group members of the project.



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Disclaimer

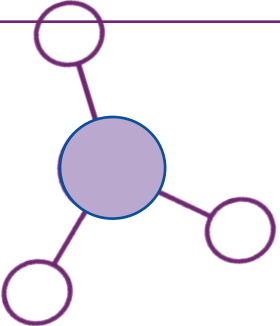
This report provides a quantifiable snapshot of investment into the Australian life sciences sector where capital originates from the United States, as publicly reported between 1 January 2018 and 31 December 2022. It should be noted that the numbers presented are approximations based on the data available and should not be taken as definitive.

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EXECUTIVE SUMMARY

The biotechnology industry is intrinsically global in character with Australia's world-class industry connected to the broader sector through development partnerships and trade relationships. The global biotechnology industry is also intensely competitive, with mobile capital and intellectual property, a highly mobile workforce, and a global marketplace.

The *US Investment in Australian Life Sciences Snapshot 2023* (US Investment Snapshot) was commissioned by AusBiotech to quantify the amount of US-originated capital flowing into the sector, in turn supporting AusBiotech to measure the global and local standing of Australia's biotechnology industry. Global capital is mobile, and therefore the level of foreign investment is a strong indicator of the industry's position as a global leader.

The US Investment Snapshot reveals more than US\$1.43 billion through 100 investments were made by US-based investors into eligible Australian-headquartered companies over a five-year period, between 1 January 2018 – 31 December 2022. Twenty-four investment deals valued at a combined AU\$642.34 million saw 2022 become a record-breaking year for investment from US investors by Australian biotech companies.

The data reveals a trend of increased investment into Australian biotechs, with deal sizes growing larger over the data collection period.

This report is the first time investment from the US into Australian life sciences has been quantified. Australia has long lamented the dearth of capital available from Australian sources for development and growth and looks to foreign investment into the sector. This report commences the establishment of an evidence base for supporting foreign direct investment into Australian life sciences over the medium term.

The United States is a key life sciences market, holding just under 40 per cent of the world's major patents in medical devices¹ and thought to hold similarly for pharmaceuticals. The US invests a higher share in life sciences R&D than any other nation in the world, consistently topping rankings as the leading country in gross domestic expenditure on R&D among OECD countries².

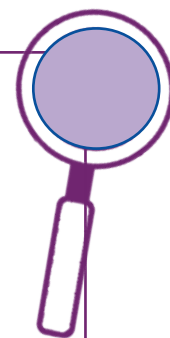
For Australia's life sciences industry to remain globally competitive and at the forefront of innovation, networks, partnerships and trade relationships with the world's leading life science marketplace is critical.

The US Investment Snapshot is a pilot for reporting on metrics identified in the *Biotechnology Blueprint*, Australia's decadal biotechnology strategy. In particular, Metric 2.1 "*Direct foreign investment in Australian companies*", identified to measure Goal 2: "*An increased local and global standing*".

Being the first of its kind, this report has enabled AusBiotech to refine and finalise inclusion and exclusion criteria, methodology, and key definitions to support future iterations of reports, including expanding its scope to other priority markets that invest into Australia's life sciences sector. AusBiotech worked in partnership with Austrade's US Health Investment team, with data collected from Pitchbook and Orbis databases, and manual news searches. Not all deals disclosed a dollar value, and this is particularly relevant for private company transactions where parties are not compelled to disclose commercial deals. It is also important to note the types of deals and companies excluded in the analysis, which can be found under 'Methodology and search criteria'.

The European Medical Technology in Figures 2022. Country of origin of medical technology patent applications 2021 – EPO countries vs US vs other countries: <https://www.medtecheurope.org/datahub/innovation/>

OECD Main Science and Technology Indicators Highlights - March 2023: <https://www.oecd.org/sti/msti2023.pdf>



KEY FINDINGS

OVERVIEW

Australia continues to attract significant investment from US investors, with the total figure of US investment into Australian life science companies totaling more than US\$1.43 billion over the five-year data collection period.

Investment from the US market into (eligible) Australian life sciences companies has increased over the past five years from approx. US\$140 million in 2018 to approx. US\$642 million in 2022, totalling approx. US\$1.43 billion for the five-year period.

The two most common metrics when describing investment transactions are number of deals and quantum of funds. The most commonly reported transaction type involving eligible companies was private investment into public companies (PIPE), followed by seed funding, early-stage VC, and late-stage VC.

In terms of quantum of funds, PIPE deals totalled approx. US\$697.94 million over the five-year period; followed by late-stage venture funding at approx. US\$377.23 million, early-stage venture US\$244.01 million, and seed rounds at US\$49.32 million.

Notably, there has been a rise of 'digital health' companies receiving and reporting significant investment from the US market in this five year period, including companies of note such as ResAPP Health (acquired by Pfizer for approx. US\$121 million), Eucalyptus (approx. US\$71 million plus an undisclosed seed round), Harrison.ai (US\$62 million of venture capital), Sonder (Series A raise of US\$16 million, and Series B US\$24 million), Omniscient (US\$30 million Series B), Honeysuckle Health (formed as a JV for AUD\$20 million), WeGuide (received a US\$10 million from the Bill & Melinda Gates Foundation), and HeidiHealth (Series A US\$5 million raise).

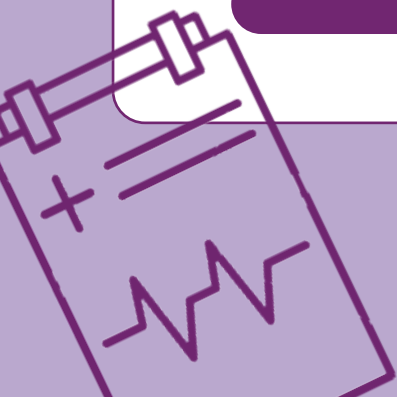
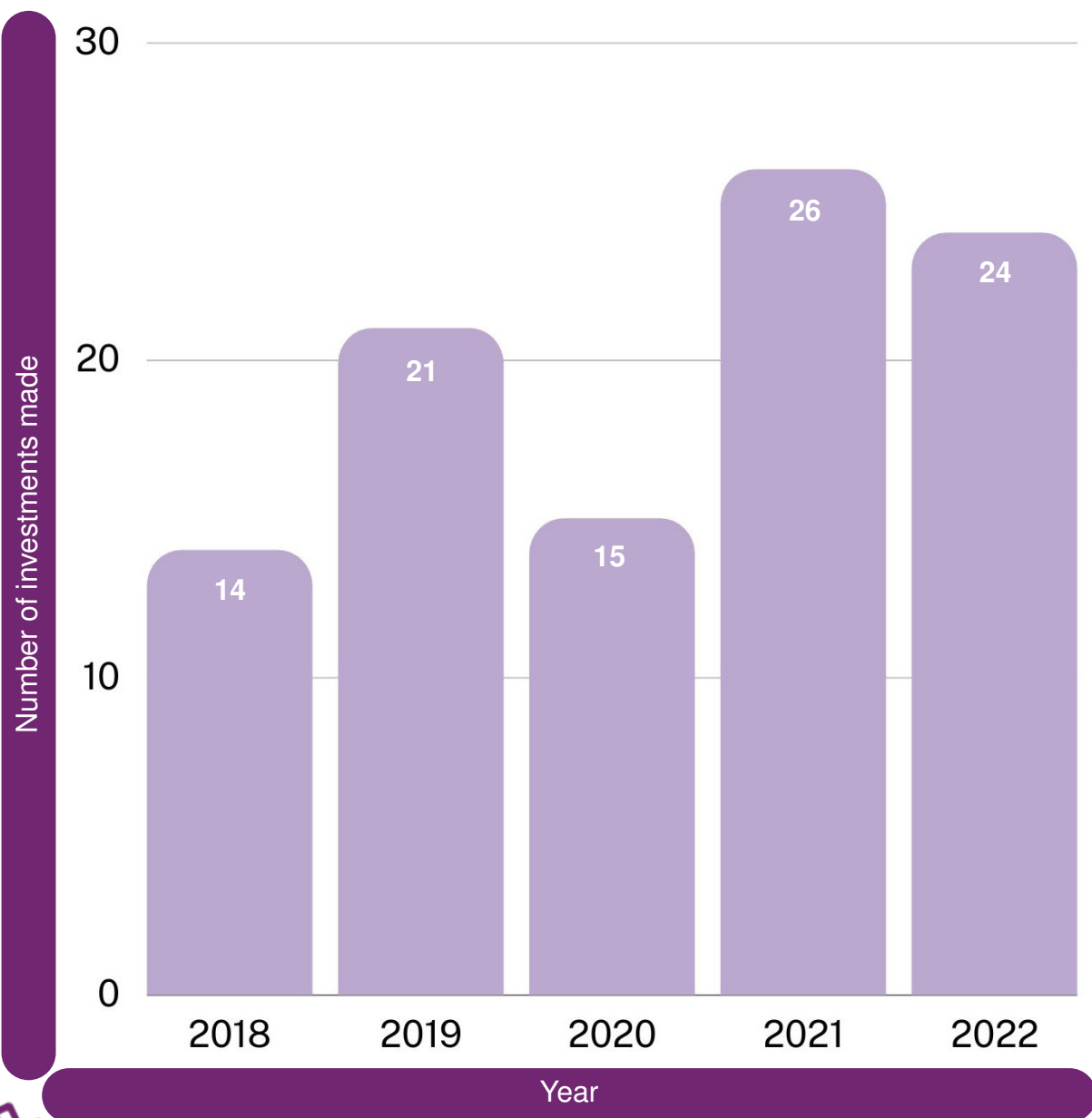
Grants, accelerator/incubator funding, and M&A have been excluded in the overall figures and analysis, however figures have still been separately tracked, with a reported US\$60.3 million in grants and accelerator/incubator funds being awarded to Australian companies from the US over the five-year period (see Table 3 under 'Methodology notes and search criteria').

When combined with M&A and buyout transactions, deals outside of the scope of this research totalled US\$600 million for the five-year period, however it is worth noting that the dollar value of the majority of M&A transactions were undisclosed. The largest M&A deal with a reported value in the past five years was Merck's acquisition of Viralytics for approx. US\$379 million in 2018.



A strong growth trend over the five-year period, between 2018-2022.

Number of investments made into Australian life science companies 2018-2022

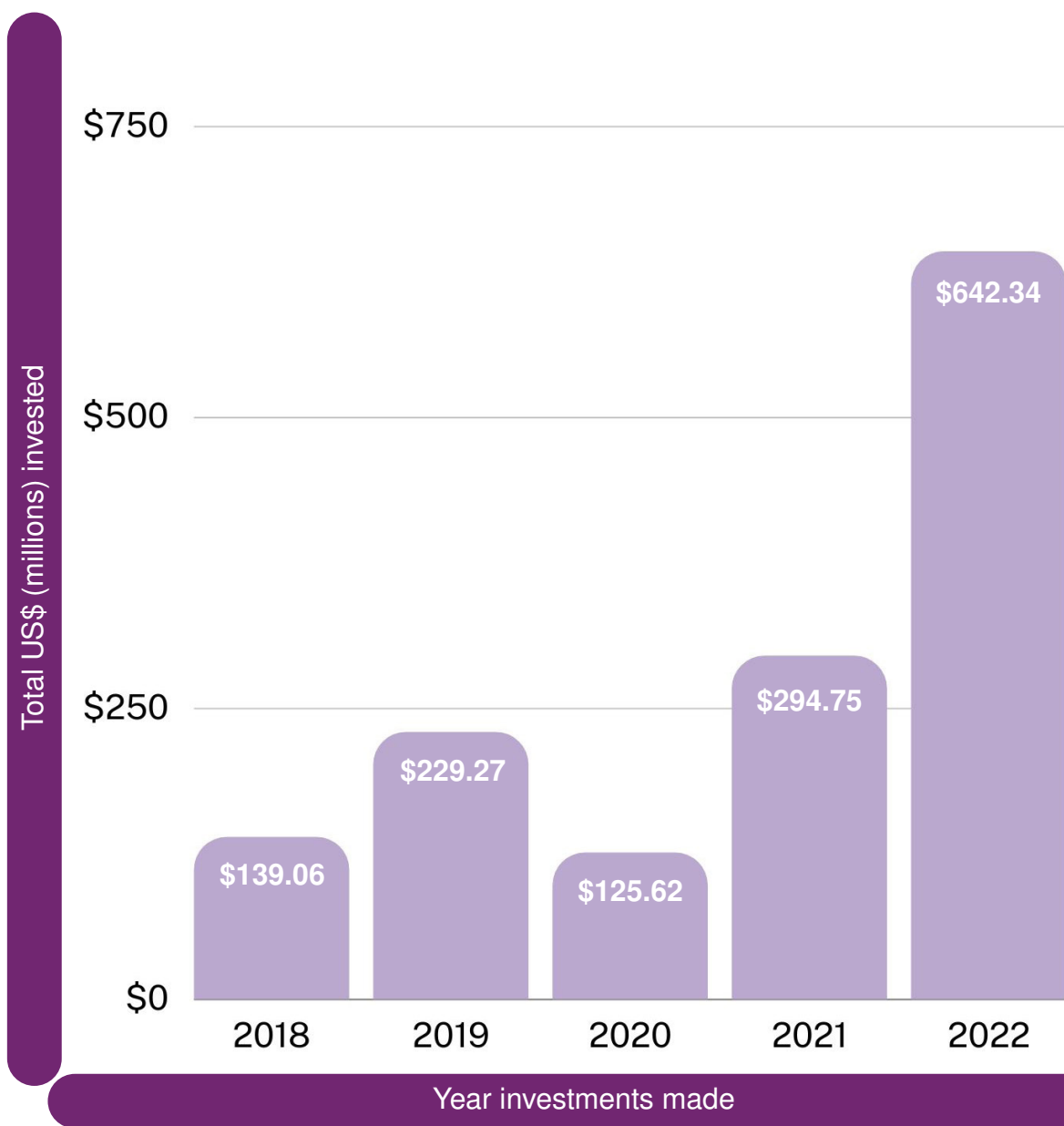


The number of deals made between US investors and Australian life science companies is steadily increasing.

Fourteen deals were reported in 2018, 21 deals reported in 2019, 15 deals reported in 2020, 26 deals reported in 2021, and 24 deals reported in 2022.



Total US\$m invested into Australian life science companies 2018-2022



Cheque sizes are growing

While 2021 and 2022 boasted a similar number of deals during their respective years, the amount of capital invested increased 117 per cent between 2021 and 2022, signalling US investors are investing in Australia's later stage companies or those companies raising larger rounds.

Table 1: summary of US investment into eligible Australian industry companies 2018-2022

Deal type	# eligible deals	US\$m deal value (where known)	Examples of companies
PIPE (private investment into public company)	37	\$697.94	Mesoblast, Bionomics, Actinogen Medical, Pharmaxis, Immutep, Zelira Therapeutics, CardieX, TALi Digital, Alterity Therapeutics, Neuren, Incannex, Opthea, Benitec Biopharma
IPO (ASX only)	2	\$37m	Microba (US\$30m), Firebrick Pharma (US\$7m) (supplementary data from BioShares)) NB Bionomics, Icannex, Creso Pharma listed on Nasdaq during this period – not included
VC (seed, early stage, late stage, corporate, secondary transactions)	58	\$682.47	Vaxxas, Navbit, Microba, Eucalyptus, Peak Medical, Sapyen, Rosemary, Loop+, Speedx, Heidi Health, Loam Bio, Epiminder, MOSH, Omniscient, Saluda Medical
Private equity (growth/expansion)	No eligible transactions		NB excluded Novotech, Mable deals >US\$325m
Joint Venture	3	\$13.63	Atticus Medical, Honeysuckle Health (Including additional deal identified via news search, but value undisclosed: Radiopharm Theranostics (MD Anderson Cancer Centre))
Total: US\$1.431b			

Table 2: US investment trend over five-year period (using eligible data as included in Table 1 above only):

Year	# deals	Total US\$m	Notes
2018	14	\$139.058	
2019	21	\$229.269	
2020	15	\$125.619	
2021	26	\$294.75	Anticipated growth year – COVID-19
2022	24	\$642.341	Anticipated largest growth year – COVID-19
Total: \$1.431b			

DEFINITIONS

Investment transaction type definitions:

- **PIPE** – a “private investment in public equity” or PIPE deal refers to the practice of private investors buying a publicly-traded stock at a price below the current price available to the public. This includes the practice of large institutional investors who often negotiate deals to buy large allocations of stock at a preferred price.
- **IPO** – an “initial public offering” refers to a company raising equity capital by offering shares to the public for the first time. This is also sometimes referred to as a “float”. While companies can list on multiple exchanges, for the purposes of this analysis only IPOs on the Australian Securities Exchange (ASX) included as meeting the definition of investment flowing into the Australian life sciences ecosystem. Several IPOs on US-based exchanges such as the Nasdaq were excluded, as the capital raised would most likely remain offshore.
- **Venture Capital** – seed, early-stage, late-stage, corporate and secondary transactions – for the purposes of analysis all these forms of VC investment have been grouped into a single category. Corporate VC is the practice of large corporate entities directly investing into external start-ups, often in the form of Joint Ventures (JVs). Secondary transactions refer to the sale of shares/equity in a private, VC-backed company to another investor. Seed, early- and late-stage VC refer to the maturity of the company receiving investment.
- **Private equity (PE) or “growth” or “expansion” capital** refers to investments into typically mature companies, often those already beginning to return revenue, for the purposes of expanding, restructuring or market entry activity. PE at this stage is usually regarded as the ‘bridge’ between VC and exits, such as buyouts.
- **Joint Ventures (JVs)** – joint ventures are a common business structure for an investing company to ‘buy into’ an existing company to form a new entity, with both parties agreeing to combine resourcing to achieve a commercial outcome. JVs are also referred to as ‘commonly held companies’, with the partners in the venture being the shareholders.
- **M&A and buyouts** – mergers and acquisitions are a category of transactions that refer to the consolidation of entities (and their assets), for example through the ‘purchase’ of one company by another, the merging of two companies to form a new entity, or the acquisition of some or all major assets of a company by another entity. A buyout is an investment transaction whereby a controlling equity stake (i.e., 51 per cent or above) of a company is purchased by another. For the purposes of this report these transaction types are combined.
- **Accelerator/incubator funding** – grants, payments or, in some instances, investment (both equity and equity-free) as provided to a company participating in the accelerator/incubator programme. For the purposes of this report, given that little detail was available relating to the form of funding, these transactions have been excluded from the primary analysis.
- **Grants** – a category of funding identified by Pitchbook, Orbis and manual news services but with little information available regarding type or source (for example, grants via philanthropic foundations in the US). These transactions have similarly been excluded from the primary analysis.



METHODOLOGY NOTES AND SEARCH CRITERIA

Data included in this report was collected from Pitchbook and Orbis databases, as well as manual news searches on deals announced between the period of 1 January 2018 and 31 December 2022. Both private and listed (ASX only) life science companies are included.

Only completed transactions (i.e., not pending, failed or partially complete) were included, where the investment source is headquartered in the United States and the recipient company is headquartered in Australia.

It is important to note not all deals disclosed a dollar value. This is particularly relevant for private company transactions where parties are not compelled to disclose commercial deals.

Eligible subsectors/company types

Life science sub-sectors represented in the analysis include healthcare, medical research, digital health, agribiotech*, biotech, medtech (devices and diagnostics), pharmaceuticals, and imaging technologies, apps and platforms, telehealth/telemedicine platforms, CROs and CDMOs, service providers, and AI-powered analytics.

**Eligible agri-biotech companies include companies developing bio-based products, medicines for animal health, microbial technology, feed supplements to reduce methane emissions, and technologies such as biosensors.*

Ineligible subsectors/company types

The following company types were excluded in reporting and analysis, as the key focus was on 'industry' companies: health services, health service providers, referral platforms where the product/technology was primarily focused on workforce issues (except where the platform is TGA approved as a device), ecosystem service providers e.g. consulting firms, specialist laboratories/services, CROs, CDMOs, digital clinical trial recruitment companies, and wholesale suppliers/distributors of equipment, technology used for training purposes, fitness equipment, commodities/consumables, AI-based apps or platforms providing insights or analysis for insurance, workflow or other non-patient centred decision making, food products or supplements and agritech products/platforms focused on insurance, yield prediction, farm mapping, logistics or supply chain management, automated vertical farming system, and non-Australian companies.

Eligible investment/deal types

Final analysis only includes the following transaction types: PIPE, IPO, venture (seed, early and late-stage, corporate and secondary), private equity (growth/expansion), and JV (joint venture).

Ineligible investment/deal types

Accelerator/incubator, grants, M&A (mergers and acquisitions), and buyout transactions were excluded in the final analysis, but were still captured separately for measuring and tracking (see Table 3, below).

- **Grants** (due to inability to determine if grants were programme funding, refund/reimbursements, or other type of funding – i.e. grants not strictly defined as investment). N.B. some grants were significant, e.g. Vaxxas US\$22 million grant.
- **Accelerator/incubator funding** – rationale as above.
- **M&A and buyouts** – given ownership of the Australian entity moved offshore, it does not strictly meet the definition of investment flowing into the Australian industry. As this captured some relevant data for reporting on metrics identified in the Biotechnology Blueprint, a separate analysis has been provided below in Table 3. As this data was not the primary dataset being analysed, this is a sample only; the majority of transactions did not disclose the deal value.

Table 3: summary of transactions not included in main analysis, but of note (eligible companies only)

Deal type	# deals	US\$m deal value (where known)	Examples of companies
Grants (eg philanthropic)	11 eligible	US\$59.75	Vaxxas, Kinosis Therapeutics, VitalTrace, SpeeDx, Respirion Pharmaceuticals
Accelerator/incubator funding	18 eligible transactions	US\$0.56	OncoRes Medical, Laaronix, ProGel, tuCann Medical, Nuroflux, Arete
M&A and buyouts	18 eligible (including transactions identified via news search: - Enterix (3TM) - Orbital Technology (Aptar Pharma, \$5m) - Parnell Pharmaceuticals (DW Healthcare Partners) - Zelda Therapeutics (Ilera Therapeutics) - DoseMe (Tabula Rasa Healthcare)	\$555.95m of eligible deals (majority with undisclosed deal value)	ResApp Health, Viralytics, Admedus, Jurox, Invictus Biopharma, Bioscience Oncology NB several major transactions excluded: eg Blackstone acquired CRO Nucleus Network; BioAgilix acquired 360 BioLabs – not included in analysis
Total: US\$616.26m			



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