

# Australia's biotech future amid the US BIOSECURE Act: Why China matters

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## The US BIOSECURE Act: An overview

The BIOSECURE Act is the latest legislative effort by the US to protect its technological leadership by limiting collaboration with Chinese firms in sensitive sectors. Building on earlier tech-decoupling policies targeting advanced semiconductors and critical minerals, the Act marks biotechnology and biopharmaceuticals as the next strategic frontier. The law cites risks of data breaches, espionage, and IP theft in collaboration with Chinese entities.

Critics argue that the Act could backfire by disrupting long-established global biotech supply chains. Many US biotech firms outsource drug development to Chinese contract research and manufacturing organisations (CROs and CDMOs), which provide world-class services at competitive costs. According to the Biotechnology Innovation Organisation, 79 percent of US biotech companies have contracts with Chinese CROs or source products from Chinese CDMOs. Severing these ties could slow drug development and inflate R&D costs.

## China's strengths in biotech commercialisation

China's biotech sector presents competitive advantages that Australia cannot overlook. China excels in technology commercialisation, efficiently bridging the gap between scientific research and large-scale production.

China has doubled down on its biotech ambitions in recent decades. With policies like 'Made in China 2025' and massive government-backed funds, especially local government-driven biotech and biopharma clusters, China has invested heavily in life sciences, from AI-driven drug discovery to biosimilars and first-in-class therapies in oncology, auto-immune diseases, and Alzheimer's disease. China's biotech ecosystem, clustered in hubs like Suzhou BioBAY and Zhangjiang Hi-Tech Park, has matured into a formidable force in the global supply chain.

China has 26 science and technology clusters ranked among the global top 100 in 2024, marking the second consecutive year it has led with the highest number of clusters. By integrating key components across the supply chain, these clusters reduce transaction costs and enhance operational efficiency in transforming R&D and technological breakthroughs into commercial products.

Biotechnology was identified in 2010 as one of seven 'Strategic Emerging Industries' for China's economic competitiveness. Since then, it has been consistently prioritised in China's Five-Year Plans. Local governments actively compete to attract biotech firms through grants, tax incentives, talent recruitment

policies, and equity investments supported by government-guided funds. The following table lists the top biotech/biopharm clusters.

These regional clusters establish end-to-end supply chain capabilities that streamline drug development from preclinical research to large-scale commercial production. They are home to numerous CROs and CDMOs, which have become indispensable to pharmaceutical giants.

Cluster	Focus areas	Strengths	Challenges
Beijing	Gene therapy, regenerative medicine	Proximity to regulators and top universities	High operational costs; competition for talent
Shanghai	AI in healthcare, mRNA technologies	Global partnerships, advanced infrastructure	Intense competition; high start-up costs
Shenzhen	Synthetic biology, biopharmaceuticals	Start-up friendly, close to Hong Kong	Smaller scale, limited talent pool
Guangzhou	Vaccines, precision medicine	Strong government support, vaccine innovation	Less mature ecosystem, slower talent attraction
Suzhou	Medical devices, chemical drugs	Start-up friendly, mature infrastructure, competitive costs	Limited focus on emerging fields, lower global profile

These strategic advantages position China as a crucial player in the global biotech value chain, particularly in contract research, biologics manufacturing, and regulatory filings.

### Australia's role: Complementary strengths in biotech

Australia's biotech strengths lie in pre-upstream research and upstream innovation, including basic research, early-stage R&D, and genomics. The country boasts world-class research institutions like the Walter and Eliza Hall Institute and a strong tradition of biotech entrepreneurship. Australian universities excel in biomedical research and early drug discovery. Australia's biotech firms focus on IP creation in the preclinical stage, specialising in cancer immunotherapies, gene therapies, and vaccines.

In addition, Australia has a strong base in clinical trials. With a streamlined regulatory environment and robust healthcare system, Australia is a preferred site for global clinical trials. Its high standards make Australia a natural R&D partner for China's commercial powerhouses when expanding to the global market. While Australia leads in innovation, China offers the industrial scale needed to bring these innovations to market.

When geopolitical uncertainties become a key risk factor for international research and business, Australia must reassess the complexities of global health co-operation. In its COVID-19 vaccine strategy, including participation in the Quad Vaccine Partnership with the US, India, and Japan, Australia faced significant obstacles such as supply chain disruptions, regulatory mismatches, and limited negotiating power due to its smaller market size. These challenges highlighted the risks of over-reliance on politically aligned partners during global emergencies, underscoring the need for more diversified and resilient global health strategies.

### IP protection: A manageable concern

IP protection remains a valid concern in China, but the situation is improving. Since the renewal of the US-China Science and Technology Agreement, China has obligations to strengthen its IP laws and enhance patent enforcement through specialised IP courts. Moreover, China has climbed the ranks in the Global Innovation Index, ranking 11th compared to Australia's 23rd, reflecting its advancements not only in patent filings, but also in cultivating a strong IP ecosystem.

From a value-chain perspective, Australia's R&D-based IP is upstream or pre-upstream, where drug targets and molecular discoveries occur. In contrast, China's expertise lies in mid-to-downstream development –

scaling up development and production and conducting large-scale clinical trials. This complementarity mirrors the CRO/CDMO models used by global pharma leaders from the US, Germany, and Switzerland in their engagement with China.

### **A strategic imperative**

The BIOSECURE Act underscores a harsh reality: the global life sciences landscape is fragmenting along geopolitical lines. For Australia, aligning solely with the US could limit its biotech future. China's rapidly evolving ecosystem offers a compelling alternative – if approached with strategic foresight.

By combining Australia's research strengths with China's industrial capacity, both nations can co-create an end-to-end biotech value chain. This partnership can accelerate drug development, expand market access, and reduce costs – while ensuring that Australian IP remains protected through well-structured agreements.

In an era of techno-nationalism, Australia must hedge its bets by engaging with both the US and China. Only through diversified partnerships can Australia realise its full potential as a global biotech innovator.

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