

U.S.-China Economic and Security Review Commission

Press Release



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NEW REPORT: China's Biotechnology Development

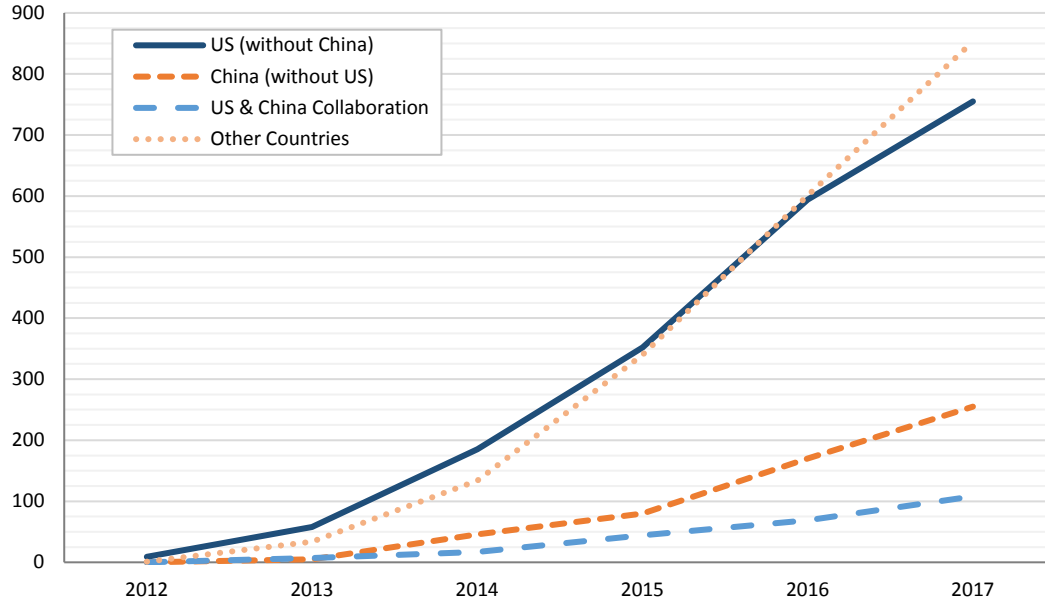
Washington, DC— Today, the U.S.-China Economic and Security Review Commission released a report entitled *China's Biotechnology Development: The Role of U.S. and Other Foreign Engagement*, prepared for the Commission by Gryphon Scientific and Rhodium Group. The report examines the development of China's biotechnology industry and the role foreign trade, investment, and other linkages—particularly with the United States—have played in its evolution. The full report can be found [here](#).

Key Findings:

- While a tenth the size of the U.S. biotech industry in terms of market size, China's biotech industry has expanded rapidly. Chinese government's approach to biotech mirrors the top-down, long-term strategies used to build other competitive sectors including comprehensive industrial policy, investment in infrastructure, development of research parks, leveraging of foreign technology and financing, and recruitment of overseas talent.
- The development of China's biotech sector is closely tied to interaction with foreign entities, with FDI making the largest contribution. Chinese outbound M&A in the pharmaceutical and biotech sectors took off in 2014, reaching over \$1.5 billion in 2015 alone and further increasing to over \$3.5 billion in 2017. Chinese VC in the global biotech industry has been steadily increasing since 2013, reaching a record of 53 funding rounds with a total value of \$3.8 billion in 2017 alone.
- Chinese biotech companies are utilizing U.S. firms to acquire technologies and data that bolster their current capabilities through a variety of channels, including bi-directional investment, corporate and academic partnerships, and recruitment of U.S.-trained researchers (both foreign- and Chinese-born).
- At a time when Chinese overall investment in the U.S. is declining, Chinese biotech acquisitions and start up financing has been resilient. In 2018, the health and biotech industry became the top recipient of Chinese capital in the U.S., surpassing real estate and entertainment. Chinese investment in U.S. biotech in 2000–2017 predominantly (96 percent) came in the form of acquisitions and startup financing: 67 percent of Chinese capital can be attributed to acquisitions of U.S. companies, while VC and other portfolio investment contributed 29 percent. Greenfield FDI in R&D centers and manufacturing remained small (4 percent).
- Nominal government ownership plays a minor role in Chinese biotech investment in the U.S. However, there are other channels through which Beijing can exert influence on private Chinese firms' overseas investments: First, Beijing can use capital controls to steer outbound investment to target preferred industries. Second, China's central and local governments often set up special funds to promote development in strategic sectors.
- China's biotech sector is dominated by biologics and other medical technologies. To date, most of the biologics produced in China have been biosimilars which are officially approved versions of an original product once a patent expires. However, China has shown global leading innovation in two areas: CAR-T therapies, which modify a patient's immune cells to target cancer, and CRISPR,

which is transforming DNA editing technology and applications. As of February 2018, China had 153 CAR-T trials clinical trials underway, a close second to the 164 trials running in the U.S.

Annual Publications on CRISPR by Country, 2012–2017
(number of publications)



Source: Scopus.

- Chinese companies are benefitting from a favorable regulatory environment and the ability to provide high tech manufacturing at cheaper prices. Chinese regulatory bodies have fast-tracked genomic research and, in some instances, bypassed the lengthy official drug review process. For example, because CAR-T was categorized not as a drug but as a medical technology, CAR-T trials only required hospital ethics committee reviews.
- The Chinese government recognizes the importance of healthcare-related data in biotechnology development and made collection a national priority, establishing four major health data centers. Chinese companies have access to American health and genomic data including through accredited corporate participation in the U.S. health care system.

The report was authored by Mark Kazmierczak, Ryan Ritterson, Danielle Gardner, Rocco Casagrande, Thilo Hanemann, and Daniel H. Rosen.

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The U.S.-China Economic and Security Review Commission was created by Congress to report on the national security implications of the bilateral trade and economic relationship between the United States and the People's Republic of China. For more information, visit www.uscc.gov or follow the Commission on Twitter at @USCC_GOV.

DISCLAIMER: This report was prepared at the request of the U.S.-China Economic and Security Review Commission to support its deliberations. Posting of the report to the Commission's website is intended to promote greater public understanding of the issues addressed by the Commission in its ongoing assessment of U.S.-China economic relations and their implications for U.S. security, as mandated by Public Law 110-161 and Public Law 113-291. However, it does not necessarily imply an endorsement by the Commission or any individual Commissioner of the views or conclusions expressed in this commissioned research report.