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## Sino Biological: Advancing life science research with optimized recombinant technology

*As a global leader in recombinant technology, Sino Biological is at the forefront of the bioreagents and contract research services industries, providing a full slate of extremely high-quality recombinant proteins and corresponding antibodies, as well as custom development and production solutions for the most difficult projects.*

During his doctoral research at MIT, Liangzhi Xie turned cell cultures into record-breaking antibody factories. In 1995, his cultures produced 2.4 grams per liter—the highest monoclonal antibody titer of that time. In 1996, he joined Merck & Co., Inc., Rahway, New Jersey, where he engaged in viral vaccine development. Built upon Xie's extensive expertise and experience, [Sino Biological](#) was founded in 2007, focusing on recombinant protein production and antibody development. Headquartered in Beijing, with subsidiaries in the United States, Europe, and Japan, Sino Biological has over 900 employees and serves researchers in academia and industry worldwide.

### Mammalian cell-made recombinant proteins

"Sino Biological has the world's largest collection of bioactive recombinant proteins made in mammalian cells," says Rob Burgess, Chief Business Officer of Sino Biological.

For human research or clinical studies, creating recombinant proteins from mammalian cells delivers a host of advantages. "Mammalian cells allow for the manufacture of a protein that mimics nature, and the proper post-translational modifications are executed on the protein," Burgess explains. "Consequently, our proteins behave as naturally and as much like they would in vivo as possible."

With mammalian-mimicking structure and function, these recombinant proteins bolster a wide range of applications. As Burgess says, "We ensure the highest chances for success when you're developing a new therapeutic, diagnostic kit, or vaccine, as well as exploring new pathways and basic biology."

### A plethora of platforms

In addition to mammalian cell expression systems, Sino Biological has every other platform in place. The research question determines the best platform for the task. For example, Burgess explains that the baculovirus-insect cell system can be used to express "enzymes like kinases that may be toxic to mammalian cells." He adds that cell-free systems can be used "for the generation of very difficult recombinant proteins, such as transmembrane-domain proteins."

Sino Biological has even established an AI-powered affinity maturation platform aimed at improving the affinity of antibodies, implementing machine learning

algorithms to predict the effect of mutations on antibody-antigen binding, and then validating the predictions in wet lab. Additionally, the company's Beacon® single B-cell discovery platform can significantly speed up the process of developing monoclonal antibodies.

With proprietary and cutting-edge technologies, optimized processes, and over 15 years of experience, Sino Biological can successfully develop the most difficult proteins and antibodies to accelerate scientists' research. "That's really where we specialize," Burgess says.

### Rapid, high-throughput, and scale-up capacities

Sino Biological makes research tools available to scientists as quickly as it possibly can. For example, in January 2020, in the race against time during the COVID-19 pandemic, Sino Biological produced the key SARS-CoV-2 spike protein reagents within a record 11 days; then, in December 2021, it developed the Omicron RBD protein in a new record of 6 days.

When needed, a customer can receive more than 1,000 different antibodies in just 2 weeks. Plus, Sino Biological can provide products on scales that range from micrograms to kilograms. As Burgess says, "We want to make sure that every researcher worldwide has not only the quality and consistency of the product, but also the quantity that they desire."

### A variety of recombinant viral antigens

Sino Biological holds another top spot with its ProVir® Viral Antigen Bank, which is the world's largest collection, carrying over 1,100 antigens from over 380 strains of viruses. "We are constantly expanding this unique portfolio by continually developing new bioactive antigens," Burgess says.

To make this antigen bank even more useful, Sino Biological offers monoclonal or recombinant antibodies for almost all of its viral antigens. "We even have antibody pairs that bind very specifically," Burgess adds.

When a customer needs something unusual, Sino Biological will make it. As Burgess concludes, "We are a one-stop shop for reagents, as well as related contract research services."

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