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## Tackling key challenges in the life sciences with advanced biological tools

To help advance scientific research, diagnostic and therapeutic applications globally, in disease areas including neuroscience, cancer and rare diseases, Abcam develops comprehensive solutions in collaboration with scientific and commercial partners to generate optimized antibodies, other binders and assays.

Antibodies are a key driver of biotechnological innovation, helping advance the global understanding of biology and causes of disease. Developing specific, sensitive and consistent antibodies—whether as therapeutics or diagnostic tools—represents a challenge that requires a focused and collaborative approach. The success of a project often hinges on the ability to find antibodies with the right affinity and specificity within a limited timeframe, and the difficulty of targeting multiple proteins with antibodies can be time consuming and challenging.

Building a network of collaborators, including strategic partners and foundations, is central to solving many of these issues by providing access to the most appropriate platforms and helping increase the scale and efficiency of the available biological tools. Strategically, it is important to adopt a holistic approach that ensures that early steps in the development process are designed to fulfill the downstream requirements of the more advanced stages of development. For example, the antibody space is very crowded, and consideration of the intellectual property landscape and the freedom to operate is crucial to the success of many projects to minimize risk and maximize commercial success.

Abcam is a life sciences company specialized in the provision of customizable, advanced antibody-discovery solutions for research, diagnostic and therapeutic applications. Many of the organization's 1,100 strong team are colocated in the world's leading life science research hubs, enabling Abcam's in-house experts to readily collaborate with key research institutes and pharmaceutical and diagnostic companies.

"Abcam's partnering strategy consists of delivering comprehensive solutions to support clinical development of diagnostic or therapeutic products that lead to commercialization," said Courtney Nicholson, director of business development at Abcam. "We do this by using our platforms for custom antibody discovery or letting partners utilize our own product pipeline."

### A versatile and comprehensive solution

The core of Abcam's value proposition is its RabMAB technology. Monoclonal antibodies are typically produced in mice, yet mouse antibody-producing cells are unable to generate every kind of antibody required. To overcome this limitation, Abcam exploits the unique properties of the rabbit immune system—a large B cell repertoire that results in a very diverse range of antibodies and affinity maturation mechanisms that result in antibodies of optimal

### Abcam's partnership engagement



Science

- Bespoke discovery platforms
- Tailored development programs
- Dedicated delivery teams



Intellectual Property

- Discovery programs to support intellectual property portfolio development
- Partnerships to deliver commercially successful patent strategies



Commercial

- Flexible commercial supply and licensing models
- Long-term strategic partnerships
- In and out-licensing programs



Minimizing risk



Maximizing success

Successfully delivered over 3000 custom antibody projects

Abcam brings a unique collaborative approach to tackling key challenges in the life sciences.

affinity—to derive and recommend fully recombinant rabbit monoclonal antibodies.

For challenging projects, a next-generation sequencing approach helps Abcam identify optimal binders by analyzing the broad repertoire of antibodies generated with RabMAB. Abcam's proprietary bioinformatics platform generates a map showing how different B cells are related to each other, which allows the identification of optimal binders while retaining the native pairing of the heavy and light chains.

Combining the RabMAB technology with direct B cell cloning and hybridoma-independent processes further enables Abcam to advance from immunization to a specific, selective and best-in-class recombinant rabbit monoclonal antibody binder within weeks.

### The immuno-oncology challenge

Immuno-oncology has revolutionized cancer treatment by harnessing the body's immune system to treat diseases with immunotherapies such as

immune checkpoint inhibitors, chimeric antigen receptor T cells, vaccines and monoclonal antibodies. This has driven an evolution of antibody development tools to address the unique demands of immuno-oncology diagnostics and therapeutics.

Abcam has developed the expertise, capability and capacity to rapidly develop custom antibodies for important immuno-oncology targets such as B cell maturation antigen, cytotoxic T lymphocyte protein 4, programmed cell death 1 and programmed cell death 1 ligand 1 (PD-L1). In particular, the RabMAB platform's ability to distinguish subtle differences such as epitope variations, post-translational modifications and conformational changes has provided the team with a clear advantage in a space in which the success of an antibody can depend on targeting a difference in just one amino acid.

To unlock the further potential of PD-L1 clones, Abcam has developed a range of proprietary and licensed PD-L1 clones available to both diagnostic and academic scientists to help identify those that might, in combination with other well-characterized antibodies against cancer and immuno-oncology biomarkers, provide a composite biomarker signature for cancer. Such open innovation approaches are crucial to tackling the increasingly difficult and complex targets emerging in the immuno-oncology space.

### Collaboration is key

From the start, Abcam's aim is to build a partnership focused on technically sound solutions and flexible commercial structures that maximize project success. Knowledge, insight and experience, combined with a thorough analysis of the properties of a target and a clear understanding of the project endpoint, enable the team to design the most suitable discovery strategies and reduce the risk of project failure. This proven approach has successfully delivered engineered reagents for all applications, including research as well as diagnostic development and commercialization, through the company's network of tissue diagnostic developers.

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