LIFECYCLE BRIEF

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Discovery

Identifying and developing transformative new treatments

$2.3 billion is the average cost of discovery and development for novel treatments.[1]

Drug discovery is one of the most demanding and complicated parts of the pharmaceutical lifecycle, marked by high costs, long timelines, and low success rates. With the complexity of new drug products in the pipeline today, discovery has become an even more challenging, yet critical, stage of the pharmaceutical lifecycle.

Drug discovery requires robust assay development, analytical testing, lead optimisation and other specialised processes in order to identify and develop a successful new chemical entity (NCE). A partner with analytical and medicinal chemistry expertise, as well as a strong focus on collaboration, is critical to maximising success in the discovery phase while containing costs and adhering to deadlines.

Below are some key areas that can present challenges for biotechnology and pharmaceutical organisations during the discovery phase.

Research and analysis

The discovery stage is marked by comprehensive research and analytical testing. Before preclinical studies, target identification, analytical testing, lead optimisation and other unique processes are required to gather information around a product's physical properties, efficacy, safety, and other considerations. **A partner with an experienced research and development team and extensive analytical expertise can help identify the best methodologies and streamline research and analysis.**

Full-lifecycle context

When developing an NCE, it is critical to consider safety, scalability and repeatability to ensure a product's success in later stages. It is important to keep later stages in mind during the discovery phase to optimise processes and maximise long-term success. **A partner with comprehensive knowledge of the entire pharmaceutical lifecycle can help you proactively overcome hurdles that may arise in later stages.**

Time and cost constraints

Drug discovery is a long and often expensive process, and this stage can be particularly difficult to navigate without the help of an experienced partner. **A partner who prioritises service and collaboration will work closely with you to understand your project requirements and adhere to deadlines and budget constraints.**

NCE synthesis

As molecule complexity continues to rise, NCE synthesis has become increasingly challenging. It is important to mitigate impurities and ensure that a product is safe to enter clinical trials before progressing to the next phase. **A partner with a highly skilled medicinal chemistry team is imperative for successful NCE synthesis.**

At Sterling, we have the specialised teams, state-of-the-art facilities and equipment, and extensive expertise to support our customers' projects from early phase development through to full commercial manufacturing. In addition, we provide comprehensive discovery and preclinical support for our customers' ADC projects.

Here's how we support our customers during early phase discovery.

Analytical expertise

We have the specialised equipment and highly skilled analytical chemistry team needed to develop and perform a wide range of tests in the discovery stage. In addition, our team collects the comprehensive data needed to affirm a product's safety and efficacy before entering preclinical and clinical studies, and to support regulatory requirements as a product moves into later stages. In addition to our small molecule analytical services, the analytical team at our dedicated ADC facility provides specialised analytical and quality control services specifically for bioconjugation programmes.

Full-lifecycle capabilities

As a full-service partner, we have the ability to support our customers' projects from discovery through to commercial manufacture. We apply our robust knowledge of the entire product lifecycle to every early phase discovery project in order to proactively anticipate later challenges and take measures to mitigate them.

Scientific collaboration

With a strong value on close scientific collaboration, we work with our customers to develop a programme that meets their desired budget and timelines, all while upholding stringent quality and safety standards. We ensure regular communication with our customers to fully understand their requirements in the discovery phase and maintain close alignment as they prepare to move into later stages.

Medicinal chemistry services

Our expertise in drug discovery and medicinal chemistry enables us to set our customers up for success from the earliest stages of their projects. We have extensive experience synthesising NCEs that successfully progress through clinical trials. In addition to NCE synthesis, our medicinal chemistry capabilities include lead optimisation, parallel syntheses, new route development and more.

Optimising drug discovery through close scientific partnership

At Sterling, we have supported many customers through the complex drug discovery process for small molecules and ADCs. Our focus on service and collaboration enables us to fully understand our customers' needs during the discovery phase. With deep expertise spanning every phase of the pharmaceutical lifecycle, we proactively plan ahead for later phases during discovery to maximise long-term project success.

Service

We pride ourselves on being easy to do business with, removing layers of complexity, maximising flexibility and adaptability to your requirements, and doing what we say we will do, again and again.

Passion

We promise to treat your molecule as our own, drive progress by continually exploring new and emerging capabilities, and do the right thing for people and planet.

Science

We combine our expertise in complex and hazardous chemistry, our world-class facilities and our full-lifecycle capabilities to place scientific excellence at the core of every solution we deliver.

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1. The Unbearable Cost of Drug Development: Deloitte Report Shows 15% Jump in R&D to $2.3 Billion, 2023. Genetic Engineering and Biotechnology News. https://www.genengnews.com/gen-edge/the-unbearable-cost-of-drug-development-deloitte-report-shows-15-jump-in-rd-to-2-3-billion/ (accessed July 25, 2024).