Case study

GMP Lab

Accelerating asset transition of a novel RNAi therapy from development to dossier submission

Bending the cost and time curve to bring the product to market

Background

A leading pharmaceutical company purchased an early development stage siRNA asset from a leading RNAi therapeutics company. The pharma company embarked on a journey to bring the asset through Phase II product development. As part of this product transition, PPD™, the clinical research business of Thermo Fisher Scientific, was contracted by both companies to continue the method optimization and development work and validate all stability-indicating methods for the novel RNAi therapy.

The customers made a clear plan to fast-track this new life-changing therapy to market for patients. As part of this plan, they identified key critical milestones for completion of method development and method validation studies. These activities were critical precursors to using the validated methods for the planned key milestone dates identified for the product's ICH registration stability study.

To enable the companies to successfully achieve their plan, the GMP lab team and CMC regulatory consulting team used scientific expertise and specialized technical capabilities to validate the methods required for the ICH registration stability study under significantly accelerated timelines.

Objective

- Assist the customers in technical method support in onboarding the new asset
- Optimize and validate stability indicating methods for the specific siRNA asset
- Perform ICH stability studies
- Generate and evaluate stability data
- Compile regulatory dossier submission

Challenges

Onboarding new assets comes with many challenges including development and validation of new specialized technical methods to bring the product to market faster. The GMP lab team developed solutions to manage multiple technical and analytical intricacies, including understanding complex impurity profiles and validating complicated assays.

Solution

At the start of the product transition, PPD hosted a technical problem-solving session for scientific leaders from both customer organizations, at PPD's GMP lab in Ireland. The GMP lab team identified several complex, technical challenges to overcome in advance of critical ICH stability testing, and worked with the customers on creative solutions, focusing on robust, fit-for-purpose methods. The team successfully optimized and validated more than 20 specific methods over the course of the project.

By overcoming the method development challenges and successfully completing technical validation studies, PPD's team paved the way for the launch of ICH registration stability studies.

To bend the cost and time curve in bringing the product to market faster: PPD's GMP lab and CMC regulatory consulting teams joined forces to propose a solution allowing for synthesis and consolidation of expertise across multiple areas.

To meet the urgent GMP dossier submission timeline: PPD's GMP lab and CMC regulatory teams partnered to ensure that all available data was promptly and freely shared. This strict approach was critical in orchestrating and generating the data needed for the regulatory submission, and to be used for submitting the dossier on time.

Results

The product dossier submission was ready in an accelerated timeframe. This was due to the PPD teams' ingenuity and attention, and efforts to provide a streamlined means of GMP data generation and reporting for the dossier submission.

Despite challenges created by the complex nature of this drug and testing methods, PPD's GMP lab team validated methods in time for the customers to start a 12-month stability study, needed to acquire significant data for their submission. More than 20 validated methods were used to generate the data needed for the regulatory submission and to be used for the dossier submission.

The PPD team compiled a core CTD Module 3 dossier that can be readily adapted to different EU/US/ROW license routes in real time as the data is transmitted.

Through the development of customized solutions, PPD Laboratory services' GMP Lab, provided the knowledge and expertise necessary to meet the customers' technical needs, quickly and innovatively.

Streamlining technical solutions

PPD's CMC regulatory team initially was tasked with authoring the Common Technical Document (CTD) Module 3 and quickly moved from Investigational New Drug Application (IND) to Market Authorization Application (MAA)/Biologic License Application (BLA).

PPD's CMC regulatory and GMP lab teams worked in close collaboration to take stability and analytical validation data 'hot off the press' to directly incorporate into the application files.

The CMC regulatory team put a dedicated resource in place at the GMP lab in Ireland to physically interface on the project with the GMP lab team and employed subject matter experts to perform a gap analysis of Module 3 in line with MAA/BLA regulations. The gap analysis highlighted key areas to strengthen. The technical team performed supplemental validations and verified additional methods to ensure they met the requirements of multiple global authorities.

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