Case Study: CMC Package for Phase II Regulatory Submission

The Ask:

The client was a small, cell therapy company developing a novel patient-specific immunotherapy vaccine for cancer. The client had very good efficacy data in a Phase I trial, however, the FDA placed the company on clinical hold pending submission of an adequate Phase II CMC package. This is a common occurrence with new companies, which have had success in Investigator-led Phase I trials but have failed to address the stricter CMC requirements of a Sponsor-led Phase II IND. Advanced therapy medicinal products (ATMPs) are typically borne out of a clinical or research setting and often the significance of CMC to advance the product development program is not fully appreciated. Therefore, the Ask was for Primecore to assist the client to develop an adequate IND Module 3 in order to advance its program.

Our Approach:

- Primecore performed an initial gap analysis, which identified technical, resource and training requirements, and then a plan was developed, adopting a Quality by Design (QbD) approach to product development. A core CMC team was assembled, and key members of the Client's team were given training on the principles of QbD and how they relate to CMC, cGMP and Quality.
- The CMC team then set about applying the learnings to process development and product specification, which also necessitated development of appropriate analytical methods.
- Then a GMP manufacturing (CDMO) solution was formulated, where Primecore was able to provide the necessary expertise to fast-track tech transfer and process qualification (PQ) in preparation for clinical manufacture.

Client Outcomes:

Overall, the Client experienced rapid progress with their CMC, resulting in an on-time submission of a CMC Amendment to the IND.

- The Primecore led CMC team developed the process for GMP manufacture, which required specification of the final drug product (CoA) and identifying the analytical package for product testing, including all assays and defining the quality target product profile (QTTP), critical quality attributes (CQAs), target product specification (TPS), critical process parameters (CPPs) and in process controls (IPCs).
- With a defined process, Primecore was able to perform a CDMO selection process and initiate the tech transfer with the selected partner. All the GMP documentation including the master batch record (MBR) was drafted for use by the CDMO. The PQ data generated at the CDMO will complete the CMC package and allow the program to begin its Phase II study.

The Client was also placed on a strong footing to successfully raise Series C financing and was awarded the accolade of being a Fierce 15 company.