Jingsong Wang – CEO, Harbour BioMed, China

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Harbour BioMed is a fast-growing global biotech company with

facilities in Rotterdam, Boston and Shanghai. The company is laser-focused on developing both proprietary and in-licensed immunological therapies using their state-of-the-art transgenic mice technology platforms, which it also licenses to other biotechs. CEO Dr. Jingsong Wang discusses the firm's strategy, its ambitions in China and globally, and its close partnerships with biotechs and research centres around the world.

Harbour BioMed was only established in 2016 but the company already has offices globally, is well-funded and is generating revenues. How did the company grow so quickly?

From the beginning, we positioned ourselves as an entity that combines the best technologies with the best portfolio products to meet patient needs around the globe. Our goal was first to extend from our technological base in the Netherlands and enhance our operations in the US in the Boston area. After a successful round of funding, we expanded into China to leverage potential opportunities the country has to offer: a huge patient population, significant unmet medical needs as well as positive regulatory changes and a flourishing private sector funding supporting the innovative biotech industry.

In the last two years, we have grown from less than 10 people to more than 160 employees. Our R&D teams in Rotterdam, Netherlands are focused on developing our technologies, while our teams in Boston are further enhancing our drug innovation capabilities. For instance, we are part of the thriving biotech ecosystem in the Cambridge Innovation Centre in Kendall square where we collaborate with the best academics, biotech companies and investors.

In China, the newly-implemented regulatory changes are further stimulating drug discovery and development by significantly reducing approval timelines for both local and global innovative drugs. At the same time, the talent pool is growing as foreign-educated scientists and engineers are returning to their home country, initially joining the burgeoning CRO sector and MNCs, and now gradually moving to the local biotech scene. I am one of them!

Harbour BioMed is thus combining this wave of local innovation from Boston, Netherlands and China with a global vision and ambition of delivering on patient needs. We are a beneficiary of this historical transformation across the world, which is one of the reasons why we are growing so quickly.

On the R&D side, you are using the technology platform of Harbour Antibodies in the Netherlands to develop new drugs and you have research activities in Kendall square. Does China play a part in the company's innovation, or are you only focused on clinical and commercial operations here?

Harbour BioMed is a global organization and as such, China plays a critical role in our overall strategy. China now offers a supporting regulatory landscape as well as an attractive innovation ecosystem. Recognizing these opportunities, we have laid the foundation to be able to develop our portfolio here, from benchside to bedside. We have multiple labs in Zhangjiang Hi-Tech Park to support our research aspirations. In fact, we are growing so fast that our facilities here are starting to feel a little crowded!

On the clinical side, we recently opened offices in the Shanghai city centre to be closer to top-tier hospitals like Shanghai Cancer Hospital and Zhongshan Hospital, as well as top research institutes like the Chinese Academy of Science and the Shanghai Institute of Immunology, both in the neighbourhood. We are leveraging all the resources available in China to drive the growth and maturation of our portfolio. Our facilities in China are state-of-the-art and allow us to support our ambitions globally alongside our footprint in the US and EU.

You left Sanofi where you worked as Head of R&D China and Head of Translational Research APAC to join Harbour BioMed. What can Harbour BioMed do that an MNC like Sanofi cannot?

Well, with operations in the US, EU and China, I believe Harbour BioMed is already an MNC, right? While we may not be on the same scale as Sanofi, I think that is what also allows us to differentiate. It goes without saying that large MNCs have extensive global platforms and resources, in addition to capital, expertise and knowledge. We learn from these organizations and our previous experiences to build an agile and ambitious team and collaborate with partners – big and small, towards a common goal of addressing unmet medical needs in China and around the world.

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As a medium-sized biotech company, we have the flexibility to focus on specific therapeutic areas and geographical regions. For example, Harbour BioMed, with the support of our investors and the local government, should be able to gather enough resources to find solutions to specific medical needs in China and Asia such as liver gastric cancer and autoimmune diseases. This laser-sharp focus on immunological drug development is reflected in our R&D pipeline, our in-licensed products as well as our antibody technological platform. Our research and management teams are very well-experienced in both immunology and immuno-oncology.

Could you share more about your product pipeline both at pre-clinical and clinical stages?

I believe we have an exciting portfolio in our hand including a large number of pre-clinical assets in immunology and immuno-oncology, and a strong clinical development pipeline that allows us to build global capabilities and capacity. In the pre-clinical space, the assets are developed, thanks to our unique Harbour mouse platforms, especially the heavy chain only transgenic mice, used to generate bi-specific fully human antibodies, and in close collaboration with leading institutions such as Harvard Medical School to identify promising targets. These consist of best-in-class therapies that could contribute significantly to global innovation and healthcare needs. On the clinical development front, we anticipate being able to launch a global IND in the first half of this year. Looking forward, we aim to steadily move our internal research portfolio into global clinical trials

with each successive year.

In addition, we also in-license products that address unmet medical needs for specific geographies. We select assets that complement our in-house pipeline and for which Harbour BioMed is uniquely positioned to further develop the drug thanks to our technologies, infrastructure and flexibility. In the future, these two portfolios of both internally and externally discovered assets will converge in a synergistic way, not only in China but also globally as some of our licensing agreements include worldwide development and commercialization rights.

Your licensing agreements include worldwide rights for an anti-PD-L-1 therapy from Kelun-Biotech. It seems everybody is developing anti-PD-L-1 drugs these days. Why did you decide to invest resources in this crowded space?

Yes, the PD-1/PD-L-1 space is both exciting and crowded. The first commercially available products in this space have shown relatively good success for the right patients. Our reasons to get into this space are multifold – first, as I said, we have a wide-ranging immuno-oncology product portfolio. Many of these products require combination therapy. At this stage, PD-1, PD-L-1 and CTLA-4 are the most well-identified targets. The next wave of clinical trials for other checkpoint targets have not yet matured.

Secondly, having an anti-PD-L-1 asset in our portfolio can serve as an anchor for partnerships with others to use in combination with their therapies. At this point, we are already working with multiple partners towards this goal. Our team has decades of experience in running global trials, and so apart from Kelun Biotech, we are collaborating with a few others to bring their treatments into global clinical trials.

You mentioned your unique transgenic mice technology platform used to develop your own therapies. Harbour BioMed also offers this technology to other biotech and multinational companies. What is the business model used to provide this technology?

The Harbour mouse platform includes two lines of transgenic mice: the human monoclonal antibody mouse platform, H2L2; and the heavy chain only antibody mouse platform, HCAb that generates a portion of the intact molecule but provides unique properties and, very importantly, can be used to generate novel antibody formats such as bispecific antibodies and nanobodies.

We use this technology to work with global partners through various business models ranging from technology licensing to co-discovery. Currently, more than 30 companies around the world are licensing these technologies. Since our incorporation in China, we also started working with the top local biotech companies with global ambitions like Innovent and BeiGene, as well as companies in other Asian countries.

When Harbour Antibodies was originally established as the Dutch company, it heavily depended on purely licensing out the technology. But, now we are gradually moving to a different model dubbed ‘License Plus. As we have an experienced antibody discovery team, we have started to offer co-discovery programs rather than only licensing the technology. Under this new model, we closely collaborate with our partners to co-discover and co-develop. The benefit for them is an accelerated development timeline and reduced risks. It is a win-win agreement where both parties share the risks and the returns. We were pleasantly surprised to find that this kind of partnership is in high demand.

How do you ensure that such ‘License Plus’ models do not conflict with your own in-house developmental programs?

In the license-only model, we do not require the licensee company to disclose the programs they are working on. All we need to know is how many programs will the technology be used for and their respective progression as our fee structure is based on an upfront fee followed by performance-based / milestone-based payments. Of course, once these programs reach the clinical phase, the related information enters the public domain that we cross-reference with our projects.

On the other hand, in the License Plus model, we discuss the targets jointly and make sure there is no conflict of interest between our portfolio and theirs. This setup has worked very well too as it reduces risks for both partners and we are able to leverage the joint experience and expertise from both organizations.

We are willing to work with anybody interested in the technology, whether biotechs, MNCs and academic research institutions if it can help create treatments that will help patients. For instance, we work very closely with the MD Anderson Cancer Centre and others to identify targets, while several innovative companies in Kendall Square and the Bay Area that license our technology.

Speaking of partnerships, are you planning to collaborate with Big Pharma companies to commercialize your drugs in China and globally?

Harbor BioMed's efforts and portfolio are primarily focused on specialty care and we are open to partnering with anyone who shares our common vision of bringing innovation to our patients and making them accessible across the world. In China, even though the country is vast, specialty therapeutic areas such as immunology and immuno-oncology do not require massive sales teams. We have an expert team of leaders in marketing and sales. For instance, one of Harbour BioMed's co-founder, Dr Mai-Jing Liao, used to be Strategic Marketing & Business Development Lead at J&J China before joining the company.

For the global market, we are certainly looking at partnership opportunities, especially for late-stage global clinical trials and global commercialization.

You had a successful series B financing round five months ago. What is the next step in terms of funding? Are you looking to enter the capital markets?

We are not a start-up anymore, we are considered a newly-established biopharmaceutical company. We have grown significantly in recent years and now look forward to taking our operations to the next level. After a successful funding round, we are focusing on improving operational efficiency and advancing our portfolio into and through clinical trials. I would be lying if I said I do not think about whether the company should enter the capital markets, but as the CEO of the company, I carry a fiduciary responsibility to look after the interests of shareholders. Given the significant progress we have made in the last couple of years, I think the best thing to do now is to focus on advancing our business. That said, we welcome the recent changes in Hong Kong and Shanghai, which have provided easier pathways for going public.

On a more personal note, you started your career as a physician then moved on to pursue a great career in the pharmaceutical industry. This is your first role in a CEO position of a biotech company. What have you learned about yourself in this position?

When you work in a huge global organization, you can rely on multiple layers of support and resources at your disposal. In a mid-sized company, many of these layers are no longer there and people carry a more direct responsibility and accountability. This is true for all employees, not only the CEO. As CEO, my responsibility is to all the key stakeholders: patients, employees, investors,

partners and clients. One of the most critical lessons for me in the past 3 years as the CEO to Harbour BioMed, is around the importance of people – first and foremost our patients and physicians, but simultaneously, our internal talent

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