BioWorld
The news source of record covering the development of innovative human therapies
Actionable Intelligence • Incisive Analysis

Clarivate Analytics

August 7, 2017
Volume 25, No. 151
Special Reprint

Completely collaborative, open discussion'

BMS looks to 'marry' adaptive, innate immunity with $2.32B+ IFM buy

By Marie Powers, News Editor

Two-year-old IFM Therapeutics Inc. became the latest biopharma unicorn, as Bristol-Myers Squibb Co. (BMS) picked up the Boston-based company for $300 million up front and another $1.01 billion in potential development, regulatory and sales milestones for each of the first products from the deal's two oncology programs. IFM is eligible for more contingent milestone payments for additional products that emerge from the programs.

And that's just the half of it. IFM keeps its NLRP3 antagonist program targeting inflammatory diseases, including liver fibrosis, inflammatory bowel disease and gout, through a newly formed entity dubbed IFM Therapeutics LLC, which will retain IFM's existing shareholders, personnel and facilities. But BMS didn't walk away from those assets. The New York-based pharma plans to make an additional undisclosed payment at the close of the oncology transaction and invest more dollars downstream to secure a right of first refusal and other entitlements to the newco's NLRP3 antagonist program.

The transaction, through which BMS will acquire IFM's outstanding capital stock, is expected to close during the third quarter. The deal was approved by the boards of both companies and by the stockholders of IFM.

BMS found its way to IFM through the pharma's relationships with venture partners – in this case, Atlas Venture and Abingworth, which led IFM's $27 million series A in June 2016. (See *BioWorld Today*, June 23, 2016.)

Incubated at Atlas, IFM has a rich but early stage portfolio of small-molecule modulators designed either to enhance innate immune responses to treat cancer or to dampen responses driving inflammatory disease. Its most advanced candidates – preclinical stimulator of interferon genes, or STING, and NLRP3 agonist programs in oncology – were of immediate interest to BMS as prospects to complement its existing immuno-oncology (I-O) portfolio.

Paul Biondi, head of business development for global business operations at BMS, met Gary Glick, IFM's co-founder and CEO, several years ago and came away impressed.

"Things obviously took on some momentum as IFM progressed their programs, particularly their I-O programs, and we began having conversation about how their portfolio might fit with our portfolio," Biondi told *BioWorld*.

Last month, at the BIO International Convention in San Diego, Tim Reilly, head of early asset development in oncology for BMS, said clinicians had reached "a point where I think we can start to mix and match the appropriate mechanisms" of I-O drugs to fit individual patient needs.

Speaking to an overflow crowd at a session on the prospects of using I-O drugs as first-line therapy, Reilly compared the progress of still-new therapies to plumbing.

"The first time you buy a house and your sink breaks, you have to go and get the tools that are going to be used to fix that sink, you realize that, 'Oh, I have to go back to Home Depot or Lowe's again and again and again,'" he said. "It's a learning, iterative process." (See *BioWorld*, June 23, 2017.)

'This was a science-driven deal'

IFM puts more tools in BMS' I-O tool shed.

Although understanding of the biology of the innate immune system has lagged behind that of the adaptive immune system, according to Glick, a fundamental understanding of the signaling pathways in health and disease states has come into sharp focus.

IFM overcame challenges in the space, where the proteins themselves are structurally complicated, by assembling academic co-founders who brought varied insights about medicinal chemistry to the table. Glick, an emeritus professor of chemistry at the University of Michigan, previously founded Lycera Corp., which in 2015 inked an exclusive global collaboration and option deal with Celgene Corp. focused on Lycera's then-preclinical RORgamma agonists for cancer immunotherapy and a clinical-stage candidate, LYC-30937, in development for inflammatory bowel disease. (See *BioWorld Today*, June 10, 2015.)

H. Martin Seidel, IFM's executive vice president of R&D, came from Novartis AG – also an investor in the company – where he was global head of strategic alliances for the Novartis Institutes for Biomedical Research. Shomir Ghosh, chief scientific officer, is a medicinal chemist who previously served as entrepreneur-in-residence at Atlas and, prior to that, as senior director and then vice president of drug discovery at Tempero Pharmaceuticals, a company formed in 2009 by Glaxosmithkline plc to implement a business plan from the pharma's Immune-Inflammation Center of Excellence in Drug Discovery focused on Th17 and Treg biology. (See *BioWorld Today*, April 25, 2011.)

"In thinking about I-O, particularly as a small company, one needs, for the future of the field, to be able to serve the largest number of patients and treat the largest number of tumors by having the ability to engage both arms of the immune system," Glick told *BioWorld*. Accomplishing that task requires combining innate immune assets, which IFM possessed, with the adaptive immune, or T-cell, approaches developed at BMS.

"The way we think about I-O today is a little bit like a boxer only being able to fight with one hand, and that's the adaptive immune system," he explained. "Freeing up the other hand, by combining with the innate immune system, will lead to responses that will benefit patients and advance the field more in a revolutionary than evolutionary manner."

BMS represented a partner with suitable clinical assets "as well as the people assets that could maximize the potential of bringing both pipelines together," Glick added.

BMS views the STING program both as a monotherapy option and potentially as a combination play, where regimens with Opdivo (nivolumab), or perhaps Yervoy (ipilimumab), could fire up cold tumors or improve patient responses.

BMS was equally intrigued with IFM's approach in inflammatory disease, but Glick wanted the ability to retain those assets "a bit longer" before handing them off.

"The NLRP inflammasome is a very, very challenging target," he said. "Quite a number of companies are interested in it but we felt that the academic and biotech team that we'd put together, with a little bit more time, can bring that program to a place that will be much further ahead than anyone's program is today or could be."

In addition to NLRP3, IFM intends to pursue a half-dozen other inflammasome-related targets – an activity made easier through the flexible structure of the new LLC. Following a "completely collaborative, open discussion" around that rationale, BMS, not even grudgingly, agreed, Glick said.

"We thought it made more sense, on the antagonist side, for IFM to retain those assets and keep the program going, with the potential option to get that in the future," Biondi said. "The autoimmune space is another area where we're keenly interested, and I'm excited to see what Gary and his team come up with."

In the end, the deal places both the innate immune stimulators and modulators in settings where they can advance to the clinic unencumbered. Without offering timetables, Biondi and Glick maintained that their respective companies will move as quickly as possible to IND filings.

"This was a science-driven deal," Biondi said. "There was a recognition that innate immunity was an area where we really needed to augment our portfolio. We went out to look for the best science and the best team available. When we take external innovation and marry it with our internal innovation, that's where we have the most success."