Evaluate Vantage

January 28, 2016

Interview – Enterome has a good gut feeling about 2016

Madeleine Armstrong

The microbiome – the term for the genes of the microbes living in the human body – has been a much-hyped area of science for some time. But 2016 is the year it will start to live up to its promise, believes Pierre Belichard, chief executive of the French company Enterome Bioscience, which is focused on the gut microbiome.

“2016 is the year for delivering data,” he tells *EP Vantage*. “If we have good data it will not be a buzzword anymore, it will be real science for a new organ.” And while the concept of the microbiome is making the jump from research to the clinic, Enterome is undergoing a transformation too. Once purely a diagnostic company, it is now shifting towards drug development – initially in bowel disorders such as Crohn’s disease and ulcerative colitis.

To this end, the private group is in the midst of a funding round targeting €30m ($33m), to add to the €17.5m it has reeled in since being founded in 2012.

Drugs vs diagnostics

Enterome’s diagnostic, IBD 110, will be its first product to market but the company will not be selling this itself – it wants to partner this with a large diagnostic company that “will take care of the late phases of diagnostic development” and launch it by the end of the year, Mr Belichard says.

IBD 110 will be used to monitor Crohn’s disease patients between their annual colonoscopies, the current standard of care. According to Mr Belichard, a study carried out with AbbVie reported a high level of agreement between gut microbiome and colonoscopy findings. “The microbiome signal is very strong in predicting the level of activity in Crohn’s,” he adds.

But of more interest to Enterome now is its drug pipeline, headed by EB 8018, a small-molecule FimH antagonist that Enterome licensed from an undisclosed large US biotech, and which is to start first-in-human trials in Crohn's disease within a year. Vertex is known earlier to have studied the microbiome's involvement in inflammatory bowel disease, and has patented FimH inhibitors.

It is hoped that EB 8018's mechanism can eliminate adherent-invasive *Escherichia coli* (AIEC), whose levels can be higher than normal in Crohn’s patients. This bacterium can be found in the gut of healthy people, but only has the chance to invade if the natural microbiome is perturbed, says Mr Belichard.

Without the protection of the microbiome, AIEC is able to bind to the gut wall, so the theory goes, before being taken up by macrophages and leading to production of tumour necrosis factor, causing the inflammation characteristic of Crohn's.

Enterome plans to test the theory in humans with a phase II trial starting in January 2017 in around 200 Crohn’s patients who will also undergo surgery. It is also developing a companion diagnostic for EB 8018, called IBD 210.

Big pharma endorsement

Earlier in development are two projects partnered with J&J and Takeda. The former, named EB 110, is also being tested for Crohn’s, but has a different mechanism, targeting an earlier stage of disease development – the “good” bacteria missing in the deficient microbiome that allow the invasion of AIEC in the first place. Enterome and J&J aim to replace the products secreted by the missing bacteria.

Meanwhile, the Takeda collaboration takes a similar approach but is focused on the relationship between gut bacteria and the non-immune functions of the intestine, and targets ulcerative colitis and irritable bowel syndrome.

Other companies in the microbiome space include the Cambridge, Massachusetts-based Seres Therapeutics, which closed a $150m IPO last July, while J&J is partnered with another microbiome specialist, Vedanta

Biosciences, in inflammatory bowel disease.

But, according to Mr Belichard, most other groups are developing probiotics, using live bacteria, “while we are extracting the products synthesised by the bacteria”. This “seems to be more attractive for the pharma industry, because pharma knows today how to develop peptides, proteins, small molecules, and not live bacteria”. There are also regulatory issues with live bacteria, he adds.

The microbiome has been linked with various diseases from asthma to multiple sclerosis – there is even evidence that boosting patients’ immune response via the microbiome could improve the efficacy of cancer immunotherapy. Enterome is looking into this, but “it’s early stage, it’s new science”, says Mr Belichard.

For now, Enterome is focusing on proving the approach works in inflammatory bowel disease.

To contact the writer of this story email Madeleine Armstrong in London at madeleinea@epvantage.com or follow@medtech_ma on Twitter