



Canadian Startup Biotagenics Plans to Monetize IBD Dataset

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Premium

NEW YORK (GenomeWeb) – A new Canadian company is attempting to monetize a multi-omics dataset from a large clinical study centered on inflammatory bowel disease (IBD).

Toronto-based Biotagenics has partnered with the University of Ottawa and Children's Hospital of Eastern Ontario to gain exclusive rights to commercialize a biobank and the related data associated with a large study of 400 pediatric IBD patients, funded in part by Genome Canada. Taking a three-pronged approach, the company will attempt to sell access to the data — for now being generated by the academic researchers — to partner companies in pharma and biotech, and will also use it to develop new diagnostics and therapeutics for IBD, CEO and Cofounder Tom Cirrito told GenomeWeb.

"We're the commercial enterprise that has access to [the biobank and dataset]," he said. "There aren't many companies like this started around that kind of asset. There are companies that have some clinical data, but I don't know of anybody that's this large and this comprehensive." Several of the scientists associated with the study are also cofounders of Biotagenics, including University of Ottawa professors Alain Stintzi and Daniel Figeys.

As part of the partnership, the company will fund additional research on the biobank samples, to be conducted by researchers at the University of Ottawa under a sponsored research agreement.

The genomic, transcriptomic, proteomic, metabolomic, and other data will come from both the patients themselves and their gut microbiomes.

As [reported by GenomeWeb](#), the company is already closing in on the first intellectual property from the data, panels of proteomic biomarkers that can be used to not only separate IBD patients from healthy

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controls but also separate those with Crohn's disease (CD) from those with ulcerative colitis (UC).

"We're about to finish the licensing process" for those biomarkers, Cirrito said.

And last month, the firm announced it would be a part of the inaugural class of companies featured in Johnson & Johnson's [JLABS@Toronto](#) biotech incubator.

Canada has among the highest rates of IBD in the world and the country's government has committed millions to study the disease and its major subtypes, CD and UC. The disease is not well understood and is thought to have both genetic and environmental factors. While the disease is rare, with an incidence of about one in 100,000 in Canada, it's increasing at a rate of approximately 10 percent per year.

Last month, the Canadian Institute of Health Research, Genome BC, and Crohn's and Colitis Canada awarded Stintzi C\$2 million (\$1.6 million) to study the contribution of diet to IBD and its effect on patient microbiomes.

That money will help to continue to fund the study at the University of Ottawa and Children's Hospital of Eastern Ontario that Biotagenics sees as a potential moneymaker.

Having enrolled more than 400 patients over the last five years, the study has yielded a unique data set, Cirrito said, consisting of harvested microbiomes and colonoscopies at the site of disease. "Most other companies collect stool samples," Cirrito said. "That's not where the action is happening. It's important to harvest at the mucosal luminal interface, which teaches you much more relevant things about what's going on."

Researchers begin collecting data as soon as the children are suspected of having IBD, even before a diagnosis. "All the kids are enrolled before they get treated, which is really important," Cirrito said. "As soon as you start treating kids with drugs, their microbiome changes. By looking at the microbiome [before they're treated] we can get data that provides insight into the cause of disease."

The researchers have started performing multi-omics data collection and also have clinical medical records and nutritional data to go along with it. "It all comes together to be a very powerful data set," Cirrito said.

Eventually, he said the company plans to launch its own omics data projects, which will be solely owned by the company.

Several other companies are trying to monetize omics data they have somehow collected. Personal genetics company 23andMe has partnered with several pharmaceutical companies and has launched its own therapeutics division. Pfizer has even [partnered with 23andMe](#) specifically to study IBD. Elsewhere, [Genomenon](#) is curating a multi-omics database from publicly available sources and [Qiagen subsidiary Biobase](#) sells access to several data sources.

For now, Biotagenics is focused on IBD and has a three-part plan to make money.

The first revenue stream will come from access to the data itself, Cirrito said. The firm expects that pharma and biotech companies interested in the microbiome will be interested in collaborating, whether generally or specifically related to IBD.

Access to the data is something that could be monetized in the short term, allowing the firm to

advance development of diagnostics and therapeutics for IBD, the second and third "pillars" of revenue the company sees.

The proteomics biomarkers being licensed from the University of Ottawa are just the beginning, and offer the possibility of both mass spectrometry-based diagnostics and enzyme-linked immunosorbent assays. "We're sort of in the 'D' part of R&D," Cirrito said. "We'll see if we can find [the biomarkers] in the stool or not, or if the statistics work out and we can use fewer biomarkers to diagnose IBD."

As the company builds out its omics data, it'll perhaps be able to find new biomarkers itself.

The firm is also starting work on therapeutics, using an already-validated platform called single-domain antibodies. Ali Riazi, a cofounder and one of the only other team members on staff full-time, will be leading these efforts from the JLABS incubator in Toronto.

Cirrito said the firm has already lined up angel investment and has partnered with a clinical nutrition company called Filament Biosolutions, where he is also CEO. Under the terms of the partnership, Filament is providing Biotagenics unspecified resources in exchange for access to Biotagenics' data.

If the company is successful, Cirrito sees two openings for expansion. The first would be to use the same model but apply it to another disease. "We could build new datasets," he said. "But we could also use the existing data set to look at new things," in the same patients.

IBD patients often have co-morbidities, such as rheumatoid arthritis, diabetes, hypothyroidism, or lupus. Cirrito said that the data set could be mined to address those.

"We have a strategy of how to leverage what we already have, to apply it to other diseases these kids might also be experiencing," he said.

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