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Scottish spinout in £1m raise to fund cancer test breakthrough

By Victoria Masterson



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A SPIN-OUT from the University of Edinburgh has raised £1 million to develop a new device that could “revolutionise” the early diagnosis and monitoring of difficult to detect cancers, such as kidney, thyroid and brain cancer.

BioCaptiva raised the seed investment from business angel syndicate, Archangels, and economic development agency Scottish Enterprise for its ‘BioCollector’ device.

The company says this overcomes “significant limitations” of current liquid biopsy testing – where blood is analysed for cells from cancerous tumours.

“We are confident that this platform technology can make a significant impact in this important area and, ultimately, enable cancers to be detected more quickly and accurately, enabling patients to receive precision cancer treatment as early as possible,” said BioCaptiva chief executive Jeremy Wheeler.

The funding will enable BioCaptiva to license the technology from the University of Edinburgh and carry out its first trials to prove it is safe for use in humans.








Research suggests the global liquid biopsy market will grow more than 30 per cent a year to reach \$6 billion by 2025.

Mr Wheeler said the BioCollector could collect up to 100 times more circulating free DNA than a typical 10ml syringe of blood from a liquid biopsy. This means there is much more diagnostic data to analyse the type and stage of cancer.

Circulating free DNA (cfDNA) are fragments of DNA shed into the bloodstream, particularly by tumours, and are used to detect cancer.

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“If you imagine every stage and every type of cancer, current liquid biopsy techniques perhaps only detect about 10% to 20% of cancers, because they simply can’t get hold of enough cfDNA,” Mr Wheeler explained.

“If you have a type of cancer with very low levels of cfDNA, for example kidney, thyroid or brain cancer – or if your cancer is very early or very late stage – then there is only going to be a miniscule amount of cfDNA in a 10ml blood draw. There is very little data there to detect [cancer], if any at all.”

The BioCollector solves this problem by filtering cfDNA from much larger quantities of blood – for example, one litre of a body’s typical five litres of blood. It does this by working alongside a standard apheresis machine – a process like dialysis that removes blood from the body, treats it and then returns it.

The BioCollector is based on a decade of research at the University of Edinburgh, led by Professor Tim Aitman, director of the Centre for Genomic and Experimental Medicine, and Professor Mark Bradley of the University’s School of Chemistry. Both are co-founders and directors of BioCaptiva. The technology is based on the PhD of Matthew Owens, a postdoctoral research associate at the University of Edinburgh who has joined BioCaptiva as lead scientist.

Sarah Hardy, director and head of new investments at Archangels, said of the technology: “This has the potential to vastly increase the sensitivity and applicability of liquid biopsy for detection of cancerous tumours, which are often diagnosed too late to enable specific treatment options to improve outcomes.”

Professor Aitman said: “We are excited to be moving our device into this market, with its huge potential for advances in the care of patients with cancer.”

Two new directors are joining the board, Dr Frank Armstrong as non-executive chairman and Dr Stephen Little as non-executive director. Dr Armstrong has extensive experience developing healthcare products at companies including Merck Serono and Bayer . Dr Little is a scientist and entrepreneur specialising in personalised medicine and molecular diagnostics.



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