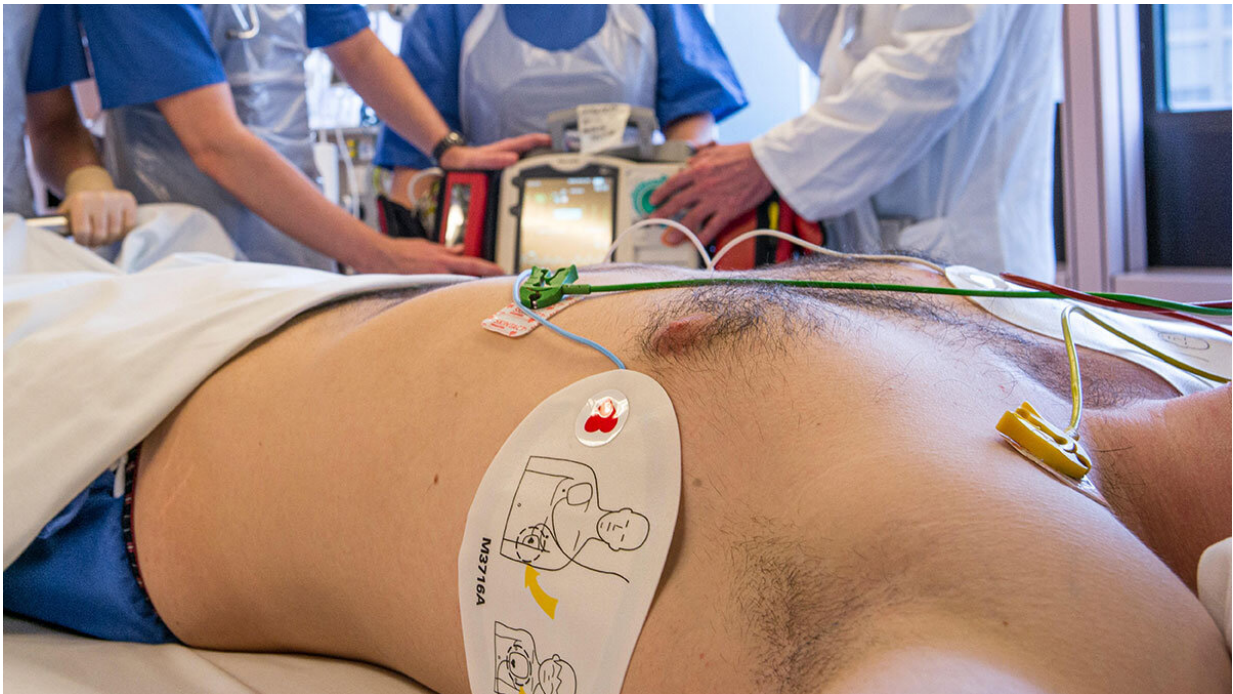


# Breakthrough technique for treating inflammatory disease

November 12 2021, by Annie Pugh

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Credit: Heriot-Watt University

Ground-breaking research from Heriot-Watt University and the University of Texas Medical Branch is set to be commercialized following a funding award from Scottish Enterprise's High Growth Spinout Programme.

The funding, awarded to researchers at Heriot-Watt University, is the

first step towards establishing a specialist Scottish biotechnology company to develop treatments for [chronic inflammatory diseases](#) and fibrosis.

Inflammation is the body's normal healing response to damaging stimuli, including infections, injuries, and toxins. However, chronic inflammation happens when the body's response doesn't properly resolve, leaving the body in a constant state of alert. If left untreated, chronic inflammatory [disease](#) can lead to serious consequences and it has been calculated that three in every five people die as a result of one of these diseases.

Examples include respiratory, cardiac, vascular, COVID-19 and related viral diseases. Due to the complex nature of inflammatory processes, these diseases are extremely difficult to treat, resulting in continual demand for new medications.

The new research has identified a way of targeting an enzyme called EPAC1, which is involved in the inflammation process and is responsible for many of the most serious yet common chronic diseases.

The team has already developed several potential new treatment options that show effectiveness in tackling inflammation at its source. Once they reach the market, these medications are expected to offer advantages over existing medications in both efficacy and safety.

Dr. Stephen Yarwood from the Institute of Biological Chemistry, Biophysics and Bioengineering at Heriot-Watt University explains: "By activating our newly identified enzyme, we can essentially 'switch off' inflammation. By doing so, we believe we can stop the harm [chronic inflammation](#) can do and hope to improve outcomes for patients when these treatments come to market.

"This funding will allow us to commercialize the breakthrough, bringing the research out of the lab to create a biotechnology business focused exclusively on developing treatments to target inflammatory diseases. With the support of the enterprise team at Heriot-Watt University and Scottish Enterprise, we intend to build a biotechnology company of significant scale and ambition. Support of this nature is essential to help academics like us to commercialize our research."

Fibrosis is a highly popular area of research currently, and one in which there is a significant amount of unmet medical need. Newer agents are expected to reach \$4.6 billion by 2027, demonstrating the potential size of the market.

Victoria Carmichael, director of strategic investments at Scottish Enterprise, said: "Our High Growth Spinout Programme was established specifically to help commercialize ground-breaking research conducted by Scotland's universities.

"The development of EPAC1 has the potential to alleviate the suffering caused to millions of people around the world and highlights the important innovation-led approach the country's academic institutions continue to apply to the management of chronic diseases."

The funding will be used for further development of the treatments and has also allowed the team to recruit commercial expertise from industry veteran Chris Wardhaugh who will act as a CEO-Designate for the project. The team, which includes Dr. Graeme Barker, are working closely with the University's Global Research Innovation and Discovery (GRID) facility.

Paul Devlin, head of commercialisation at Heriot-Watt University, commented: "This funding will help accelerate the impact of academic discovery on the daily lives of people affected by a wide range of life-

changing and life-limiting diseases. With Heriot-Watt's expertise in delivering commercial, strategic and innovation support, coupled with the financial backing of Scottish Enterprise, we look forward to growing this research into an exciting, profitable, world-class business.

"Our GRID facility provides a highly collaborative environment for academics to build dynamic companies out of their research, bringing together a diverse talent pool combined with teaching and learning opportunities for our students. This new company will be formed in an ideal location with strong connections to Scotland's thriving life sciences sector. We look forward to working in partnership to access appropriate talent, R&D and investment opportunities to aid its expansion."

Chris Wardhaugh, CEO-designate, said: "This funding is the first step in a long road to bringing important new options to clinicians and patients. The whole team recognizes the support of Scottish Enterprise in encouraging the commercialisation of new research and we are excited about the prospects of laying the foundations for another Scottish biotechnology success story."

Provided by Heriot-Watt University

Citation: Breakthrough technique for treating inflammatory disease (2021, November 12) retrieved 13 May 2024 from <https://medicalxpress.com/news/2021-11-breakthrough-technique-inflammatory-disease.html>

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