

StartUp stories: Dr. V. Andrey Giménez Rivera, founder of IntegraSkin GmbH

An idea that gets under your skin

(Stuttgart/Tübingen) – Dr. V. Andrey Giménez Rivera founded IntegraSkin GmbH to solve a problem that affects him and at least three-quarters of a billion other people – chronic inflammatory skin conditions (CISC). He is determined to revolutionise dermatological diagnostics by enabling the targeted identification of the molecular disease mechanisms in each individual patient. The founder and researcher gets “under the skin” of patients, taking a small tissue sample and using innovative molecular-biological methods to derive thousands of disease-relevant parameters from it. He processes this data with the help of artificial intelligence, to then work together with dermatologists and pharmaceutical manufacturers to find the appropriate treatment for a specific case. This personalised medicine can put an end to many years of suffering for those affected. Dr. V. Andrey Giménez Rivera’s story is just one of many successful StartUp stories in the STERN BioRegion.

Dr. V. Andrey Giménez Rivera has set himself an ambitious target. He wants to offer lasting relief to patients suffering from chronic skin conditions such as neurodermatitis, dermatitis and psoriasis. His motivations aren’t entirely altruistic – he suffers from neurodermatitis himself. It was precisely this prospect – spending his whole life not really feeling comfortable in his own skin – that he simply would not and could not accept. As CEO of Tübingen-based IntegraSkin GmbH, he now hopes to be able to help not just himself, but many others, too.

The idea – how did the company come to be founded?

Dr. Giménez, who was born in Columbia and has Spanish citizenship, has good reasons for becoming a researcher and entrepreneur in Germany. Having studied biology, he specialised in immunology and then focused completely on his chosen subject – the skin. He completed his doctorate on chronic-allergic skin infections while

working under Prof. Marcus Maurer, Director of the Institute of Allergology at the Charité – Universitätsmedizin Berlin. By this time, he had decided to found a company of his own. He chose Tübingen as his new home and the base for his start-up, but not just for personal reasons (his partner lives here). After all, he was looking for an excellent scientific location that would help advance his research. In BioRegio STERN Management GmbH, he found the support he needed to start his small company and get it successfully off the ground, for example with targeted funding from the EU's BioMan4R2 and Codex4SMEs projects. Although the company was registered in the commercial register in Aurich, Lower Saxony, at the request of Dr. Ernst Johann Krüger, the CFO, who is based there, IntegraSkin's research and development takes place in the STERN BioRegion.

The need – who benefits from the idea?

Many people suffer from skin conditions at some point in their life. Some of the people affected – estimated to be around three-quarters of a billion – develop severe cases of chronic inflammatory skin conditions (CISCs). They often suffer the symptoms for years – in a significant number of cases, their whole lives. The reddened, itchy, inflamed patches of skin are not just irritating and painful, they also have a massive impact on the everyday and social lives of many patients. However, these skin conditions are often simply considered to be “superficial”, and only the symptoms are treated, so as to make them bearable. The patient cannot be completely healed, though, until the precise causes of the symptoms are understood. Treatment follows the principle of trial and error, because the same symptoms can have very different causes, such as environmental influences, food intolerances and genetic predispositions. The medicines do not have a targeted effect – cortisone or immunosuppressants only “cover up” the symptoms rather than curing them. In some cases, the medications even cause additional problems for the patients, such as TWS (topical steroid withdrawal, cortisone withdrawal syndrome) and red skin syndrome (caused by improper application of topical corticosteroids). The first treatments using biologicals – biotechnologically engineered medicines that interfere with the inflammatory process in a targeted way, were developed around 20 years ago. These improved matters for some groups of patients, but there is still no cure for many of those affected, and the treatments are still very expensive.

The USP – what is the innovation?

With his company IntegraSkin, Dr. Giménez is planning nothing less than a revolution in dermatological diagnostics. As a pioneer in molecular analysis for chronic skin conditions, he develops and combines the latest technologies for this purpose. Initially, the researcher and his team fundamentally focused on understanding what the differences are between inflamed and healthy skin. After all, the causes, molecular links and processes that lead to the illness are not yet completely understood for many immune-mediated inflammatory diseases (IMID). What is clear, however, is that these conditions manifest at the molecular level. IntegraSkin uses a small skin and blood sample to investigate the pathogens – the mechanisms that trigger the CISC – of each individual patient. The company has developed a special method of tissue sampling and preparation for this so it can extract thousands of disease-relevant parameters from mRNAs, proteins and immune cells. Instead of conducting superficial analyses of the patients, Dr. Giménez gets under their skin to identify molecular changes. To interpret these changes, the company uses “omic” technologies such as genomics, epigenomics and proteomics to analyse the processes. IntegraSkin is the only company in Europe to use both proteomics and transcriptomics for the comprehensive analysis of proteins and RNA in skin lesions.

Currently, the team is able to identify up to 18,000 different mRNAs in histological skin samples. In addition, around 10,000 different skin proteins that are relevant to inflammation, 200 immunophenotyping markers and 2,400 cellular inflammation mechanisms can also be identified, among other things. Using the company’s own in-house database and artificial intelligence, it is therefore possible to track down the parameters in each patient that are relevant to their condition. The AI monitors thousands of new scientific reports, clinical studies and approved treatments for CISC conditions to make this possible. Moreover, information about environmental influences, lifestyle and nutrition are also taken into account. A report is compiled on this basis to ensure each patient receives the most suitable treatment, in collaboration with doctors and the pharmaceutical industry – personalised medicine, in other words.

Milestones – what next?

The technology is there – it just doesn’t have approval yet. As a result, the company is barely making any sales as yet, but is instead financing itself through grants and third-

party funding. The next step is therefore the certificate of conformity, which the company hopes to receive by the end of the year. There is also work to be done convincing stakeholders in the health care sector of the advantages the IntegraSkin method has over conventional, time-consuming and expensive treatments for chronic inflammatory skin conditions. Once IntegraSkin becomes part of accredited health care provision, Dr. Giménez will have achieved his second goal. Then – he hopes – he will finally be able to cure himself and the other roughly 750 million CISC patients around the world.

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Stories

Link to technology transfer page

<https://www.bioregio-stern.de/en/projects/technology-transfer>



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About BioRegio STERN Management GmbH:

BioRegio STERN Management GmbH promotes economic development in the life sciences industry, helping to strengthen the region as a business location by supporting innovations and start-up companies in the public interest. It is the main point of contact for company founders and entrepreneurs in the Stuttgart and Neckar-Alb regions, including the cities of Tübingen and Reutlingen. The STERN BioRegion is one of the largest and most successful bioregions in Germany. Its unique selling points include a mix of biotech and medtech companies that is outstanding in Germany and regional clusters in the fields of automation technology and mechanical and plant engineering.

Press contact:

BioRegio STERN Management GmbH
Dr. Klaus Eichenberg
Friedrichstrasse 10
70174 Stuttgart
Germany
+49 711-870354-0
eichenberg@bioregio-stern.de

<https://www.linkedin.com/>

Editorial department:
Zeeb Kommunikation GmbH
Anja Pätzold
Alexanderstrasse 81
70182 Stuttgart
Germany
+49 711-6070719
info@zeeb.info