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Newly established start-up wins award – Mireca Medicines GmbH develops treatment for hereditary eye disease and receives Innovation Award of the biotechnology regions in Germany

Start-up in the garage – a location with prospects

(Stuttgart/Tübingen) – Mireca Medicines GmbH is working on a method to treat previously incurable hereditary retinal diseases. A team led by Prof. François Paquet-Durand from the Institute for Ophthalmic Research at the University Hospital of Tübingen has discovered a substance that could stop sight loss.

- 5 **The newly established start-up with an international research network that has found its ideal location in Tübingen has just been honoured with the Innovation Award of the biotechnology regions in Germany.**

Prof. François Paquet-Durand and Barbara Brunnhuber have already written the first chapter of their success story – they started a biotech company in a garage! Yet

10 Tübingen-based Mireca Medicines GmbH doesn't just have the ideal site for a "real" start-up – it also has the right ingredients. Prof. Paquet-Durand, CSO of Mireca Medicines GmbH, is a project manager at the Institute for Ophthalmic Research at the University Hospital of Tübingen and an internationally acclaimed specialist in hereditary retinal degeneration. As a chemist, engineer, business manager and

15 business consultant, Barbara Brunnhuber, CEO, has the key skills to create an interface between science and business for a new start-up. Together with Peter Rall, member of Senioren der Wirtschaft Arbeitskreis e.V., as the business administrator for the start-up phase, they form a small team that has perfect international ties. "The STERN BioRegion was nevertheless the only possible location," explains

20 Brunnhuber. "The brains of the company, as it were, are in Tübingen. This region also offers us perfect support in every way." The founders thus have the ideal conditions here to develop the treatment for rare retinal diseases to a ready-to-use state.

Hereditary retinal degeneration, such as retinitis pigmentosa (RP), affects at least two million people worldwide. This eye disease leads to serious visual impairment and

25 gradual blindness and cannot yet be treated. One reason for this is that it may be due

to very widely varying defects or mutations in various genes. Around five years ago, an EU-funded international consortium of companies and research institutes thus set out to develop new substances to treat retinitis pigmentosa as part of the DRUGSFORD project. As the project's scientific coordinator, Prof. Paquet-Durand
30 found the key in tandem with his partners: "We noticed that with RP, the cGMP signalling pathway is overactive. This means that the increase in this cellular semiochemical results in the cells in the eye's photoreceptors dying. Using drugs in this area is not easy, as the retina is shielded by the 'blood-retinal barrier'." The solution – instead of activating the therapeutic substance, which is a cGMP analogue
35 that is similar to natural cGMP but impedes its metabolic pathways, it needs to be "packed" in a formulation that allows it to overcome this barrier.

The application-oriented patents are extremely promising

"The foundation of Mireca Medicines GmbH is the logical consequence, as the consortium is certain of having found this solution," explains Brunnhuber. And the Innovation Award of the biotechnology regions in Germany, which the start-up has
40 just received, is proof that an independent panel of judges also considers the company's application-oriented patents to be extremely promising.

The company is now enabling commercial use of the patents and thus ultimately the development of a treatment for patients. The next stage includes the clinical trials of phases 1 to 2b, which are expected to be carried out at the eyetrial Steinbeis Transfer
45 Center at Tübingen Eye Hospital's Center for Ophthalmology. Prof. Paquet-Durand is convinced that in four years' time, when these phases are completed, concrete results will be available that will give patients reason for hope: "We're already in contact with national and international patient organizations in order to involve sufferers in the development process early on." After all, if Mireca delivers what experts are already
50 promising, the new treatment will prevent patients from losing their sight. "In view of the company's growth prospects, starting in a garage is perfect. At the end of the day, other companies that today are highly successful began in that same way," says Brunnhuber.

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About DRUGSFORD

Led by the Institute for Ophthalmic Research at the University Hospital of Tübingen, a consortium of companies and scientists researched new treatment options for hereditary eye diseases in the EU-funded "DRUGSFORD" joint project (www.drugsford.eu). The partners were: BIOLOG GmbH from Bremen (Germany), to-BBB technologies B.V. from Leiden (Netherlands), SP Process Development AB from Södertälje (Sweden), the University of Modena (Italy) and Lund University (Sweden).

About BioRegio STERN Management GmbH:

BioRegio STERN Management GmbH is a skill-sharing network, providing a help and advice centre for founders of new businesses, entrepreneurs and researchers in the life sciences sector in the cities of Stuttgart, Tübingen, Esslingen and Reutlingen and the Stuttgart and Neckar-Alb regions. BioRegio STERN Management GmbH represents the interests of these market players in dealings with political circles, the media and associations and provides advice on grant applications and corporate financing. Key focal points include regenerative medicine, medical technology and the automation of biotechnology. Managing Director Dr. Klaus Eichenberg is a molecular and cell biologist and investment analyst.

BioRegio STERN was awarded the Silver Label by the ESCA in spring 2015.



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