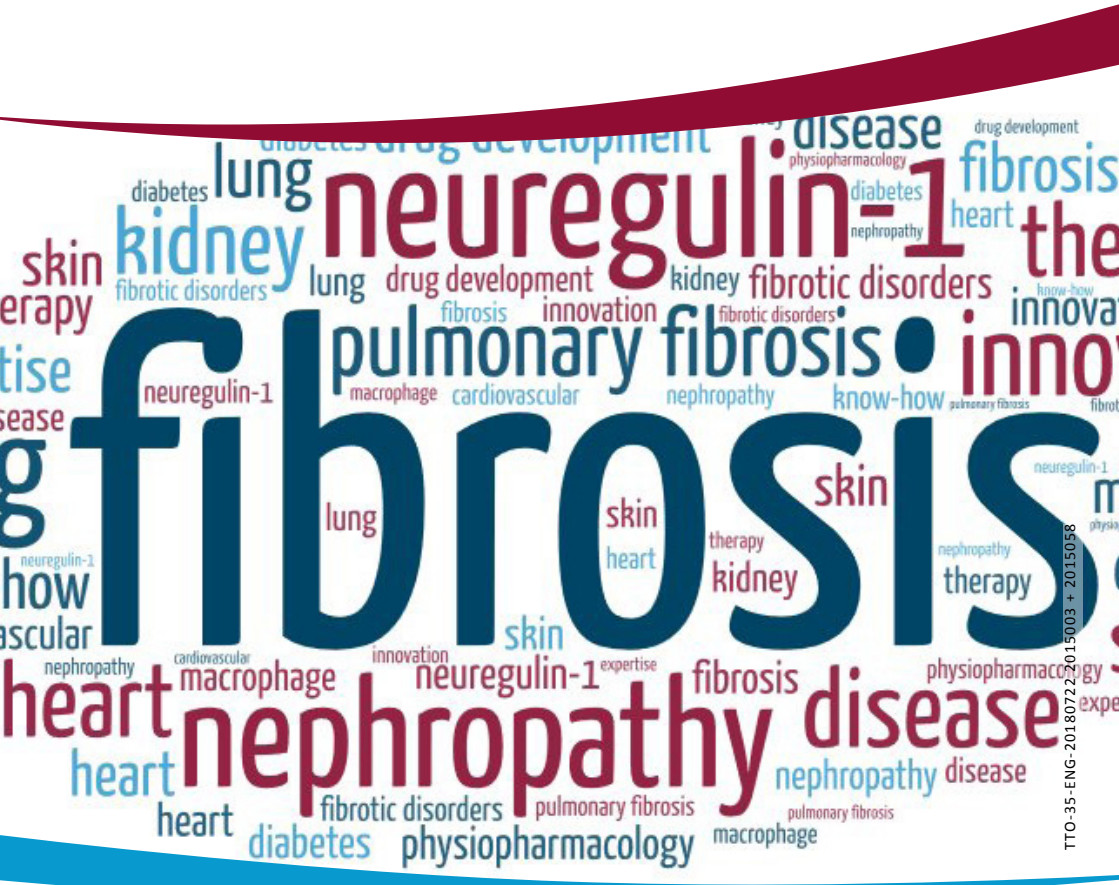
Technology offer: Neuregulin-1 as target to develop novel therapies for the treatment of fibrotic disorders and nephropathy

The University of Antwerp has discovered the anti-fibrotic and nephroprotective properties of Neuregulin-1, a growth factor with regenerative properties, with therapeutic potential for fibrotic diseases and nephropathy.



TTO-35-ENG-20180722-2015003 + 20150058

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Situation before

Fibrosis is defined by excess deposition of fibrous connective tissue as the result of various stimuli such as infections, mechanical injury, allergic responses and autoimmune reactions. Repair of injured tissue is a fundamental biological process which allows the replacement of injured cells, but when this process is imbalanced pathogenic and permanent fibrosis can be formed. Fibrotic disorders such as pulmonary and cardiovascular fibrosis have an enormous impact on human health. Nephropathy is very frequent and serious complication of diabetes. Affected patients often require hemodialysis and eventually kidney transplantation to and have an increased risk of cardiovascular disease.

Given the impact and complexity of these diseases, novel and effective therapies are urgently needed.

Technology

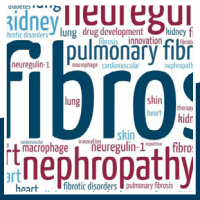
Neureguline-1 (NRG-1) is part of the family of epidermal growth factors through activation of ErbB receptors. NRG-1 has been mainly studied as therapy for heart failure and is currently undergoing clinical testing in phase 3 trials. We have identified that NRG-1 has both anti-fibrotic and nephroprotective effects and therefore therapeutic potential for the treatment of fibrotic disorders or nephropathy. We have demonstrated that NRG-1 reduces fibrosis in different rodent models of cardiac fibrosis, skin fibrosis, lung fibrosis, and kidney fibrosis. The effects of NRG-1 are partly mediated by direct effects on fibroblasts and indirect effects through anti-inflammatory pathways. Furthermore, we have demonstrated that NRG-1 improves kidney function in models of diabetic and hypertensive nephropathy.

Partners we search for

The available know-how, models and discoveries are of interest to biotech and pharmaceutical companies interested in the development of novel therapies for fibrotic disorders or nephropathy. The University of Antwerp is looking to leverage its expertise and collaborate with partners to bring innovative therapies to patients.

About the researchers/ research group

The research group Physiopharmacology (PHYSPHAR) of the University of Antwerp, represented by Prof. Gilles De Keulenaer, has over 15 years of experience in NRG-1 biology and is a leader in the field. Together with the laboratory of Pharmacology, PHYSPHAR represents a joint research group that bundles its expertise to focus on cardiovascular disease. Both groups are part of the research Consortium of Excellence Infla-Med (www.uantwerpen.be/infla-med). PHYSPHAR is also part of the research Consortium of Excellence Infla-Med (www.uantwerpen.be/infla-med) and partner in the MOGLYNET-H2020 PhD program.



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