PRESSRELEASE

Porous microneedles for pain free and patient friendly medication

Leiden, November 29th 2018 – To further develop their technology – a patch holding porous microneedles – MyLife Technologies received a €300.000 investment from investment fund UNIIQ. The patch provides an important alternative for current drug administration via microneedle or oral routes (tablets, capsules, etc.). The patch provides the opportunity to deliver drugs and vaccines transdermally, which makes it a pain free route of administration. Additionally, the patch overcomes a number of limitations that current pharmaceutical patches are faced with. The investment was announced by Henri Lenferink, mayor of the city of Leiden, during the Dutch Life Sciences conference.

Pain free

Certain types of drugs and vaccines are currently administered almost exclusively via subcutaneous needle injections. This leads to a number of disadvantages: such injections are painful and lead to needle phobia, causing some to refuse their therapy. Such injections also require trained medical staff to perform the procedure. The microneedle patches, currently developed by MyLife Technologies, are minimal invasive, pain free and can be self-applied by the patients. In case of administration of vaccines, these patches provide a further immunological advantage. The immune cells in the top layer of the skin can be reached effectively, which could lead to a more effective immune response after administration.

Preventing side effects

Some drugs that are administered through tablets or capsules show significant side effects due to the oral route of administration. Additionally, effectiveness of the drug is limited as a large part of it is lost in the patient's digestive system. As a result, the exact dosing that reaches the bloodstream can vary significantly from one patient to another.
For a number of orally administered drugs, MyLife's patches can overcome such disadvantages. An additional advantage is provided by the ability of the patch to be designed in such a way that the delivery of the drug can be customized.

Getting through the skin efficiently

A limited number of drugs already used administration through on-skin patches. Such commercially available non-microneedle patches show inefficient and slow skin-penetration. The outer layer of the skin serves as a natural barrier, causing only 10-50% effective drug-delivery. This also leads to a situation wherein a significant amount of the drug remains within the patch, which forms a real safety risk. Microneedle patches have the ability to improve this efficiency, increasing the amount of delivered compound and decreasing the amount of residual compound.

Clinical Effect

Using the investment of UNIIQ and Leiden University (via it's Libertatis Ergo Holding), MyLife Technologies will be able to perform the first clinical experiments. Pieter Jan Vos, CEO of Mylife Technologies: "It's of great importance to us to show that, using this innovative technology, significant amounts of medication can be

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released in a patient. This investment makes it possible for us to show such evidence using a peptide-formulation, thereby developing our technology further"

Liduina Hammer, Fundmanager UNIIQ: "We are very glad to announce this investment in MyLife Technologies, with which we can significantly contribute to the first clinical application of the technology. Our joint investment with Leiden University shows that we believe the Leiden ecosystem is an excellent place to further develop the company and technology".

MyLifeTechnologies was co-founded in 2012 by Pieter Jan Vos. Pieter Jan holds a degree in chemistry from Leiden University and Ecole Supérieur de Commerce de Paris (ESCP Europe). MyLife Technologies is a spin-off from Twente University, Mesa+, Institute for Nanotechnology. The company is located in Leiden to develop further within the Leiden Life Sciences and Health cluster, collaborating with a number of companies within the cluster towards the further development of their microneedle technology.

For editors:

Photo 1: f.l.t.r.: Thijs van den Munckhof (UNIIQ), Pieter Jan Vos (MyLife Technologies), Liduina Hammer (UNIIQ) and Henri Lenferink, Mayor of the city of Leiden

Photography: © Mursee

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About MyLife Technologies

MyLife Technologies has developed a platform technology based on nanoporous microneedle arrays (npMNA). The npMNA devices are created using (bio-inerte) ceramic material. The nanopores in the MNA devices enable the storage of pharmaceutical compounds within the device. npMNA devices are combined to form a patch, which creates the possibility to administer pharmaceutical compound via the skin, using a diffusion process. Earlier *in vitro* en *in vivo* studies have shown the technology to effectively administer small molecules, peptides and

vaccines. MyLife Technologies was founded in 2012 as a spin-off of Twente University, MESA+, Institute for Nanotechnology. MyLife Technologies has received previous funding from a consortium of *informal investors* and the company's management. Patents covering the npMNA technology have been granted in Europe, US, Japan and China.

About UNIIQ

UNIIQ is a €22 million investment fund, focused on the proof-of-concept phase. UNIIQ supports entrepreneurs in the South-Holland province to accelerate bringing their technology towards the market. We offer entrepreneurs the capital to accomplish their goals while bridging the most high-risk phase from concept towards becoming a promising company. The fund is founded by a consortium consisting of Erasmus University Medical Center, Delft University of Technology, Leiden University and the regional development agency InnovationQuarter. UNIIQ is made partly possible by the European Union, the Province of South-Holland and the municipalities of Rotterdam, The Hague and Leiden. Management of the fund is conducted by InnovationQuarter.
For a short introduction on UNIIQ, please watch the follow film (in Dutch): https://youtu.be/lx9VZUsHlyU

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