MUVON Therapeutics AG

www.muvon-therapeutics.com

No stress: regaining bladder control through personalised cell therapy

MUVON Therapeutics has developed a patent-protected, GMP-compliant method for isolating and expanding muscle precursor cells that are injected into patients to promote regeneration of skeletal muscle, with an initial application in stress urinary incontinence.

Worldwide, around 200 million people are diagnosed with stress urinary incontinence (SUI), with women making up 75% of SUI patients. The actual number of SUI cases is likely much higher, as many people do not seek or receive medical attention for their condition. SUI is the predominant type of incontinence in women, and develops in 25% of women after pregnancy and childbirth. Cases of SUI vary in severity, but for all patients it is an embarrassing condition that significantly impacts quality of life, and can lead to severe depression.

Current therapy for SUI revolves around behavioural change such as avoiding caffeinated drinks or losing weight, as well as exercises to strengthen the pelvic floor and, in some situations, surgery–interventions that are often limited in their efficacy and the length of time they provide benefits, and which can cause serious adverse events. Crucially, these interventions do not rectify the underlying problem, and only offer symptomatic relief.

Regenerative autologous cell therapy

MUVON Therapeutics is developing a novel, long-term solution to SUI by targeting the underlying cause of the disease using autologous cell therapy for the regeneration of the sphincter muscle tissue that supports bladder control. To date, personalised cell therapies have mostly been developed for deadly diseases. MUVON wants to change this paradigm and bring personalised cell therapy to patients with conditions that, while non-life threatening, are debilitating and significantly affect day-to-day living. MUVON, headquartered in Zürich, Switzerland, was founded in 2020 and grew out of postgraduate research at the ETH Zurich and University of Zurich done by Deana Mohr, who today serves as MUVON's CEO, on regenerating skeletal muscle tissue. The award of funding from the highly competitive Horizon 2020 programme established by the European Union set a solid ground for the founding of the company.

Building on Mohr's early work, MUVON has created a platform technology with applications in a wide range of indications in which loss or weakening of skeletal muscle plays a role, many of which are seriously debilitating. MUVON has decided to focus on SUI in the first instance to establish the feasibility of personalised cell therapy for non-fatal conditions, but plans to extend its portfolio based on the in-house production approach.

The therapy begins by taking a small muscle biopsy from patients under local anaesthesia, and then isolating dormant muscle stem cells from the biopsy. During this process the stem cells are activated and proliferate into muscle precursor cells (MPCs), which are then assessed for quality before being injected back into patients. Here, the MPCs differentiate to form new muscle fibres and connect with existing muscle tissue, leading to regeneration of the muscle, which is further supported by electromagnetic stimulation (Fig. 1).

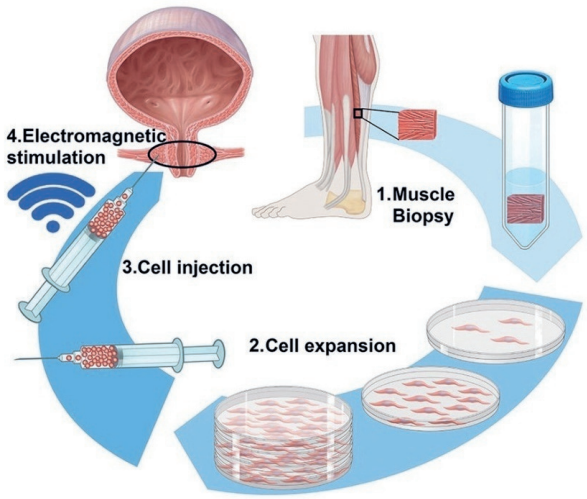

Fig. 1 | MUVON's proprietary process for harvesting and re-injecting autologous cells to stimulate muscle growth.

> **Preclinical studies in mice, rats and dogs have demonstrated that MUVON's autologous cell therapy achieves functional regeneration of skeletal muscle, without adverse side effects**

Phase 1 trials in progress

Over the past decade, MUVON has defined the best cell-culturing conditions for growing the right population of cells, at the right stage of differentiation, to achieve the greatest therapeutic effect. Preclinical studies in mice, rats and dogs have demonstrated that MUVON's autologous cell therapy achieves functional regeneration of skeletal muscle, without adverse side effects. In 2020, MUVON initiated its phase 1 trial; the treatment phase of the trial has been completed, with the last follow up visit of the last patient planned for September 2021. MUVON has also recently secured funding for running a phase 2 trial over the next three years.

In the early days of MUVON, a great deal of effort was invested in turning a laboratory procedure into a GMP-compliant production process, which has been achieved with the underlying intellectual property protected. A next critical step for MUVON is to automate the process so that it can be used in different locations and settings and yet still deliver a consistent quality of product at a manageable price. MUVON welcomes discussions with potential investors who would like to be part of this journey to bring control and dignity back to the lives of millions of people.

CONTACT
Deana Mohr-Haralampieva
MUVON Therapeutics AG
Zürich, Switzerland
Tel: +41 75 43 23 017
Email: info@muvon-therapeutics.ch