Profile Status: Published

Technology Offer

Portable medical device to address metabolic and related chronic diseases and assist with clinical weight loss

Summary

A South West UK based SME focused on metabolic health has developed a portable device which accurately measures an individual's metabolism in real time. The device is a tool to enable healthcare professionals to provide personalised, and superior nutritional intervention plans for effective long term weight reduction. Partners are sought to launch the technology on global markets based on a joint-venture, licence or commercial agreement with technical assistance.

Creation Date	13 April 2017
Last Update	30 April 2018
Expiration Date	08 November 2018
Reference	TOUK20170413001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/53d2ae46-2c15-4ca5-97db-043da01757ab

Details

Description

Obesity is a global problem and is a known risk factor for many chronic diseases, including heart disease, type 2 diabetes and some cancers. Relatively small reductions in weight (5-10%) can lead to significant reductions in the risk and severity of these conditions, in addition to an increase in lifespan. Effective long-term weight reduction can have a significant impact on both the quality and quantity of life.
Dietary interventions, as a means of weight reduction, have poor long-term success rates. One reason for this is the difficulty in gaining an accurate measurement of a client's 24 hour energy requirements. Resting metabolic rate (RMR) can be measured accurately using indirect calorimetry (IC) and is now a standard process in research and some tertiary centres. To date it has been difficult to measure RMR within the clinical setting as IC is impractical to use, costly and time consuming. In consequence predictive equations are routinely used to estimate RMR. This approach is limited in accuracy and does not assess which substrates are being utilised for energy production. If an individual is not effectively utilising energy, from fat stores at rest, the individual will not be able to effectively lose weight over time Many studies therefore conclude predictive equations are unsuitable for individual patient management.

Obesity is a metabolic disorder. The ability to measure metabolism is key to its management. Accurate measurement of RMR is fundamental to the management of long term weight loss.

The developed technology is the first indirect calorimeter designed specifically for primary care use. It is portable and easy to use. It benefits from auto-calibration and intelligent interpretive software and enables complex metabolic data to be easily understood by non specialists. It has been validated against the current research standard technologies and is currently in further studies in the UK, Singapore and Australia.

The UK SME seeks partners with the ability to place the technology on the global markets based on a joint-venture agreement, licence or commercial agreement with technical assistance.

Advantages and Innovations

• Provides accurate, personalised RMR calculation in the clinical setting and enables optimal fat utilisation rather than lean tissue loss
• Quicker validation of dietary advice and opportunity to educate individuals on eating habits and their own metabolic make up
• Portable, easy to use and requires no technical expertise
• Affordable, reliable and efficient solution delivering real health benefits and long term cost savings
• CE and TGA medical device registration (Therapeutic Goods Administration – Australian medical device registration)
• ISO 13485 registered company
• SME with extensive experience in the management of weight loss and supported by a practitioner led personalised weight programme comprising the proprietary technology, nutritional advice and exercise planning.

Stage of Development

Available for demonstration

Comments Regarding Stage of Development

The technology was soft launched in Europe in May 2016. Early pre-commercialisation sales have occurred in the UK, Ireland, Switzerland, with significant interest from France, Germany, the Middle East and Asia. Further early development of the software platform would further benefit the commercialisation programme particularly for the clinical and retail markets.

The training platform has completed proof of concept and value stages. Further software development is planned before beta testing later in 2017.

IPR Status

Secret Know-how,Granted patent or patent application essential,Trade Marks,Exclusive Rights,Copyright

Profile Origin

Other

Keywords

Technology

06001005	Diagnostics, Diagnosis
06001008	Environmental Medicine, Social Medicine, Sports Medicine
06001011	Heart and blood circulation illnesses
06001013	Medical Technology / Biomedical Engineering

06001016	Physiology

Market

05001007	Other diagnostic
05004005	Diagnostic equipment
05005022	Other clinical medicine
05007007	Other medical/health related (not elsewhere classified)

NACE

C.27.9.0	Manufacture of other electrical equipment
C.32.5.0	Manufacture of medical and dental instruments and supplies
C.32.9.9	Other manufacturing n.e.c.
Q.86.2.2	Specialist medical practice activities

Network Contact

Issuing Partner

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Open for EOI : Yes

Dissemination

Send to Sector Group

Healthcare

Client

Type and Size of Organisation Behind the Profile

Industry SME <= 10

Year Established

0

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English
Chinese

Client Country

United Kingdom

Partner Sought

Type and Role of Partner Sought

The UK SME seeks partners who can help launch the technology on the global markets. Different collaboration options including joint-venture agreement, licence agreement and commercial agreement with technical assistance are available depending on the partners' expertise and market interest.
Commercial partners will have an established network within the clinical setting and academia, including public and private healthcare providers, weight loss clinics and universities and academic institutions with a focus on diet, nutrition, weight loss and related chronic diseases and will be expected to introduce the device into their portfolio of products under the terms of a commercial agreement with technical assistance. The UK SME will provide technical assistance and support and marketing material. Licence agreements will be considered with partners who wish to use the technology in their own applications. Joint ventures will be considered with partners who have established networks within the target sectors and who are able to significantly accelerate the launch and distribution of the technology in Europe and other international markets.

Type of Partnership Considered

License agreement
Commercial agreement with technical assistance
Joint venture agreement

Attachments

Profile Status: Published

Technology Offer

New prosthesis for vaginal agenesis and sex change interventions

Summary

A Spanish research biomedical foundation in collaboration with a university engineering research group has developed a new prosthesis to create an artificial vaginal cavity or neovagina following the surgical McIndoe technique. Its design allows a less aggressive surgery, does not require skin graft. The research team is looking for companies interested in license agreement for its exploitation. It is also open to technical collaboration for the adaption to the market needs.

Creation Date	27 March 2018
Last Update	17 May 2018
Expiration Date	18 May 2019
Reference	TOES20180327002
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/2431c7dc-c6ff-42d3-8d1a-3b71b5d9c1be

Details

Description

A biomedical research team from a health foundation, in collaboration with a bioengineers from a Spanish university, has developed a health prosthesis intended to be placed temporarily in women with vaginal agenesis and in sex change interventions, to create an artificial vaginal cavity or neovagina following the surgical McIndoe technique.

Historically, the creation of a neovagina with a prosthesis and skin graft (McIndoe technique) has been the most common surgical procedure. The difference between the surgical techniques, used to date, lies in the material used to line the newly created channel: Skin grafts, peritoneum, buccal or vesical mucosa, autologous in vitro cultured tissue from vaginal vestibule, amnion and others. The major inconvenient of this technique are:
- Making skin graft and the permanent scar in the donor area
-The prosthesis used as mold, its material weight and stiffness can produce bedsores or necrosis.

The prosthesis, developed using 3D printing technology (additive construction), allows a precise geometry and the adaptation to the surgery's needs or the development of personalized prosthesis. The material used brings light weighting, stiffness and stimulates healing and skin formation in the neovagina.
The prosthesis body, and the support plate, are made of Polylactic Acid (PLA), chosen for its biocompatibility and for its ability to stimulate epithelial regeneration. For the external coating of the prosthesis, silicone is used, a material that is also biocompatible, soft and non-stick once

solidified. The design allows an almost outpatient surgery, more easy, without further dermal scarring and providing women more comfort and functionality.

In this way, the surgical intervention to perform neovagina or artificial vagina, as it does not require skin grafting, will be shorter and less aggressive, facilitating the technique for professionals and a shorter hospital stay for the patient.

Several prototypes have been developed and are at the moment used in a clinical trial.

The research team is looking for medical supplies companies providing solutions in the fields of Gynecology and Obstetrics willing to sign a license agreement and developing the necessary know-how for its later commersialisation.

Due the early stage of this technology (TRL 3 – 4), the research group is open to work, together with the interested company, in a technical cooperation agreement, to develop the necessary requirements and know-how (regulatory health affair, proof of concept in candidates, initial clinical validation, etc.) to put these medical devices into the market.

Advantages and Innovations

• The new system is better suited to the anatomy of the vagina because it has been developed with 3D technology, protects more the anatomy soft parts and is much lighter.
• The 3dD additive construction technique allows a precise geometry and the adaptation to the surgery's needs.
• This product replaces craft prostheses (described in the scientific literature).
• It avoids complications related to the craft prostheses as decubitus or urethra ulcers.
• It is better suited to the anatomy of the vagina, protecting more the soft part.
• It is much lighter but ensuring the correct stiffness.
• Its application allows to form the vagina using less aggressive surgery techniques than in the present. The surgical intervention will be shorter and less aggressive, facilitating the technique for professionals and a shorter hospital stay for the patient.
• The design is intended to be also used as a mold, or dilator, by the patient herself after surgery.
• The material stimulates healing and skin formation in the neovagina.
• It not requires skin graft, improving the patient’s comfort.
• Avoid complications related to the surgery.
• The patient can go home the next day with this new technique.
• The patient achieves a faster recovery and improved self-esteem with less risk.

Stage of Development

Under development/lab tested

Comments Regarding Stage of Development

Prototype available for demonstration

IPR Status

Patents granted

Comment Regarding IPR status

Spanish utility model granted and PCT patent application

Profile Origin

Private (in-house) research

Keywords

Technology

06001017	Surgery
06001020	Physiotherapy, Orthopaedic Technology

Market

05003003	Surgical implants
05004006	Surgical instrumentation and equipment
05005006	Gynaecology

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Open for EOI : Yes

Dissemination

Send to Sector Group

Healthcare

Client

Type and Size of Organisation Behind the Profile

R&D Institution

Year Established

0

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English
Spanish

Client Country

Spain

Partner Sought

Type and Role of Partner Sought

-Type of partner sought: health companies, manufacturers of medical prosthesis and devices in the field of Gynecology and/or Obstetric.

-Specific area of activity of the partner: mold making in health plastic sector, health, gynecology, plastic and aesthetic surgery.

-Task to be performed: licensing for commercialization. Technical cooperation for further developments or adaptation of this developed technology to the specific requirement of the medical supplies market could be considered. Medical device accreditation in EU health-market regulatory authority.

Type of Partnership Considered

License agreement
Technical cooperation agreement

Attachments

Profile Status: Published

Technology Offer

Highly raised functionality and purity of cardiomyocytes derived from induced pluripotent stem cells using an innovative recovery and seeding process

Summary

A French research lab has developed an innovative cell recovery and seeding process dedicated to cardiomyocytes derived from Induced Pluripotent Stem cells (IPS). Functionality and purity of freezed cardiomyocytes are highly raised using this process. TheTechnology Transfer Office (TTO) acting on behalf the research lab is looking for a licensing agreement with biotech companies or Contract Research Organizations (CRO), operating in cell testing of drugs or in cell therapy.

Creation Date	28 March 2018
Last Update	07 May 2018
Expiration Date	08 May 2019
Reference	TOFR20180321001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/5ac4a2c1-1841-4dec-ab5c-1f8a40b3bbce

Details

Description

A French Technology Transfer Office (TTO) is acting on behalf major research labs within the Paris region. One of them has developed an innovative recovery and seeding process for cardiomyocytes derived from induced Pluripotent Stem cells (IPS). The laters are obtained from patient cells cultivation and differenciation, and they are used for in cellulo drug testing. They can also be obtained from healthy subjects in order to use them as a cell therapy by stem cells transplantation.

*State of the art :
Cardiomyocytes are generated from patients IPS which are put into cultivation in Petri dishes. Then functional cardiomyocytes are freezed in order to use them later.

For in cellulo testing, there is not a unique recovery and seeding process. Contract Research Organizations (CRO) use classical protocols which lead to a 80% recovery ratio. Usually, recovered cardiomyocytes become functional again after 1 to 2 days after seeding but only 12 days after thawing.

For use in cell therapy, each pharmaceutical or biotech company is setting up its own protocol which is included in its own production, recovery and seeding Good Manufacturing Pratice (GMP) qualified process. Up to now, there is still no cardiomyocytes into the market but some

clinical investigations are promoted by biotech companies with a view to set up treatments for heart failures.

* Market challenges :
For in cellulo testing, there is a strong need to face the limitations of existing protocols. Indeed, the recovery ratio of cardiomyocytes is too low because of side effects of external agents used either for freezing or cell differentiation stopping.
For use in cell therapy, there is no short-term challenge but a long-term need to improve the survival rate of IPS derived cardiomyocytes.

*Proposed technology :
After a classic differenciation process of cardiomyocytes, adherently growing cells detachment is performed using a specific enzyme during a specific time duration (both specific data are confidential). This time duration has been proved to offer the best return rate regarding to the recovery process. Cardiomyocytes are then ready either to be recovered and seeded by means of a specific recovery solution, or to be freeezed and later thawed by means of a specific plating medium (both are confidential data).

The French TTO is looking for a licensing agreement as an exclusive or even no exclusive know-how transfer to biotech companies or CROs using IPS as stem cells derived cardiomyocytes, either for drug testing or cell therapy.

Advantages and Innovations

Current recovery and seeding protocols of IPS derived cardiomyocytes doesn't agree with a unique standard. Their recovery ratio is only 80% of purity (83% in best cases). Besides, their survival rate is drastically lower after thawing.

* Innovation
An innovative recovery and seeding process of cardiomyocytes derived from IPS has been set up and protected as a secret know-how, which leads to the following performances :

- recovered cardiomyocytes show a highly raised purity (95%), as compared to classical protocols,
- thawed cardiomyocytes show a strong survival ratio since first cell beating have been proved to occur only after 3-4 days post-thawing.

* Advantages
The following characteristics of this innovative process are profitable to biotech companies dealing with cardiomyocytes, either for drug testing or cell therapy :

- the whole preparation protocol of IPS derived cardiomyocytes shows a highly raised return rate,
- operating instructions are simple and easy to set up,
- time recquirements are only 45min for recovery and 24h for seeding including incubation time,
- all specific solutions are commercially available.

Stage of Development

Available for demonstration

Comments Regarding Stage of Development

The innovative process for recovery and seeding of cardiomyocytes derived from IPS is fully completed and ready to be transfered.

IPR Status

Secret Know-how

Comment Regarding IPR status

The secret know-how includes all data describing specific timing and solutions for cell detachment, recovery, seeding, freezing and thawing.

Profile Origin

National or Regional R&D programme

Keywords

Technology

06001019	Stem cell Technologies
06002002	Cellular and Molecular Biology
06002007	In vitro Testing, Trials

Market

04006	Cellular and Molecular Biology
04009	In vitro Testing, Trials
04013	Stem cells and biobanks

NACE

M.72.1.1	Research and experimental development on biotechnology

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Open for EOI : Yes

Dissemination

Send to Sector Group

Bio Chem Tech

Client

Type and Size of Organisation Behind the Profile

Industry SME 11-49

Year Established

2012

Turnover

<1M

Already Engaged in Trans-National Cooperation

Yes

Experience Comments

The French TTO is a private technology transfer company whose shareholders are public scientific institutions such as universities, engineering schools, research institutes and hospitals. The TTO has got exclusive rights to source, protect, develop and commercialize scientific findings and technologies stemming from the research labs managed by its shareholders. The French TTO is able to provide technical and legal assistance to facilitate the eventual partnership.

Languages Spoken

English
French

Client Country

France

Partner Sought

Type and Role of Partner Sought

The French TTO is looking for a licensing agreement as an exclusive or non-exclusive secret know-how transfer, with biotech companies dealing with Induced Pluripotent Stem cells (IPS) derived cardiomyocytes.
Pharmaceutical corporates or Contract Research Organizations (CROs), as well as biotech SMEs operating in the field of in cellulo drug testing or cell therapy are focused.

Type and Size of Partner Sought

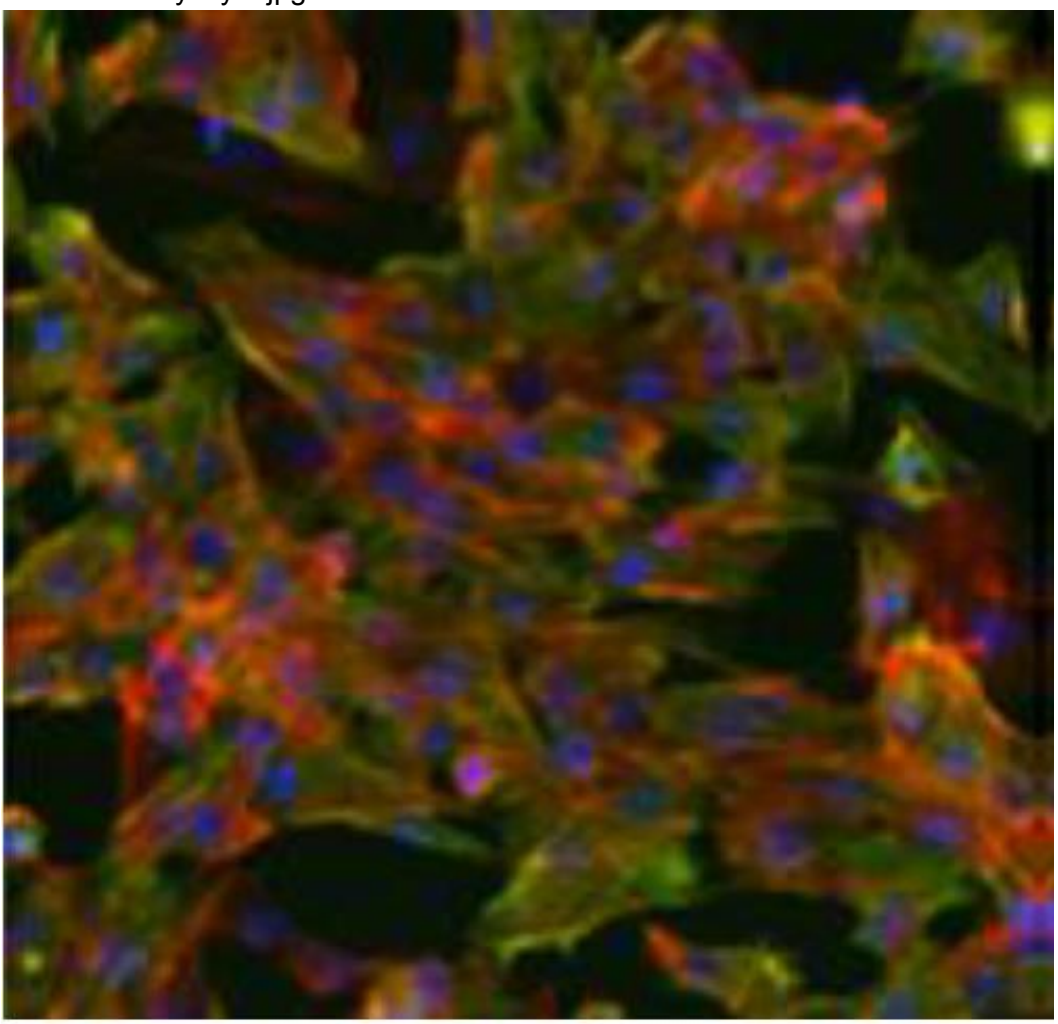
SME 11-50,SME <10,>500 MNE,251-500,SME 51-250,>500

Type of Partnership Considered

License agreement

Attachments

Reco cardiomyocyte.jpg



Cardiomyocytes after seeding (95% of purity)