



国立大学法人  
東京医科歯科大学  
TOKYO MEDICAL AND DENTAL UNIVERSITY

Delivered at 14:00 on November 30, 3rd year of Reiwa  
Press release materials

(Press Club, Honmachi Press Association, Nagoya Education Press Association)

A venture company was established aiming at the practical application of research results.

Translated by <https://www.folliclethought.com/>

Government of the Promising Seeds Development Project of the Institute of Technology (KISTEC) and the Ministry of Education, Culture, Sports, Science and Technology "Regional Innovation Ecosystem Formation Program"<sup>\*1</sup> Two venture companies (B-MED) for the purpose of social implementation of the results of research projects underway in Co.<sup>\*2</sup>, TrichoSeeds Co., Ltd.<sup>\*3</sup> was established. B-MED Co., Ltd. aims to put the results of joint research between KISTEC, Tokyo Medical and Dental University and Tokai National University Organization Nagoya University, and Tricho Seeds Co., Ltd. to practical use. In the future, we plan to promote the consolidation of intellectual property rights at venture companies and establish the system necessary for commercialization. Each institution will continue to provide support for commercialization as soon as possible.

<Comments from the producer of the regional innovation ecosystem formation program Marai Business> The technologies of B-MED and TrichoSeeds, which were established this time, are epoch-making technologies that can meet the unmet medical needs of diabetic patients and alopecia patients, respectively. In the medium to long term, sales of several hundred billion yen / year are expected. So far, KISTEC and each university have promoted joint research and development to secure technological superiority. With the establishment of this venture, we will continue to do our best to survive the fierce competition for practical application, such as shifting to practical development led by domestic medical device companies and pharmaceutical companies as soon as possible.

\* 1 Regional Innovation Ecosystem Formation Program

“Healthcare New Frontier” Leading Project

from Kanagawa Kanagawa Prefecture and KISTEC jointly applied for the project and adopted it in FY2018. To realize the "Healthcare New Frontier" that will take on the challenge of a super-aging society, we will implement it under a commercialization support system centered on universities and KISTEC, focusing on the creation and growth of leading ventures in Kanagawa. We aim to realize a unique innovation ecosystem.

\* 2

President and CEO of B-MED Co., Ltd. : Ryo Matsumoto (KISTEC Project Leader / Associate Professor, Tokyo Medical and Dental University) Established: November 11, 2021

Business description: Research and development of medical equipment (diabetes treatment equipment, etc.) Management of intellectual property rights, etc.

\* 3 TrichoSeeds Co.

President: Junji Fukuda (KISTEC Project Leader / Professor, Yokohama National University) Established: November 1, 2021

Business: Research and research related to hair and skin regeneration medicine Development, management of intellectual property rights, etc.

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<Reporting>

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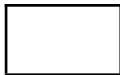
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Attachment Material Ministry of Education, Culture, Sports, Science and Technology Regional Innovation Ecosystem Formation Program Overview

<Business Overview>

The Ministry of Education, Culture, Sports, Science and Technology's Regional Innovation Ecosystem Formation Program is "Social Impact" By promoting commercialization projects that contribute to the growth of national wealth as well as the growth of the region, we aim to form a Japanese-style innovation ecosystem and realize regional revitalization. " This program aims to form a commercialization project, an innovation ecosystem, and function R & D projects for commercialization that have the potential to become an indispensable success model for the formation of an innovation ecosystem.

sustainablyIt consists of a foundation building project to build the infrastructure necessary for. In the "Healthcare New Frontier" leading project from Kanagawa, we have positioned the two projects that led to the establishment of the venture company as commercialization projects, and have been working toward commercialization.

**神奈川県「ヘルスケア・ニューフロンティア」先導プロジェクト**  
— 文部科学省 地域イノベーション・エコシステム形成事業 —

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**事業化プロジェクト (国費+県費)** 事業化に向けた共通支援機能と社会的インパクト・実現可能性から選定

① 神奈川県のライフイノベーションセンターで KISTECの事業化プロジェクトを実施

② 世界No.1 コア技術の事業化でベンチャーの創出・育成を図る

※事業化29%は毎年産の進捗踏まえて常に最適化を検証

**I. 貼るだけで自律型の次世代人工膵臓の開発** KISTEC/東京医科歯科大:松元

糖尿病においてインスリン療法は重要な位置を占めるが、投与量調整、投与の煩雑さなど多くの課題が存在し、その解決が望まれている。松元らのコア技術「貼るだけ自律型次世代人工膵臓」は機器不要・一週間連続使用可能・安全安価で、糖尿病のわが国特有の課題（長期的な血糖管理・低血糖の回避等）を解決する。

**II. 再生毛髪的大量調製革新技術の開発** KISTEC/横浜国大:福田(淳)

抗がん剤治療の副作用による脱毛や男性型脱毛症は、直接生命を脅かさないが本人のQOLに大きく影響する。福田のコア技術「再生毛髪的大量調製」は、毛包基底的大量培養を行い患者への移植を行うもので、安全性・コスト面に優れ、現治療の極毛等に変わる脱毛症の根本的な治療提供を可能とする。

③ 神奈川県・KISTECを中心に、日本医療機器開発機構や株式会社へのファクトリー機関等も加わる強力な事業化支援体制（薬事申請相談や開発戦略及びベンチャー支援等）で事業化活動を加速化!

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**基盤構築プロジェクト** 新規プロジェクトを立案・育成する活動やサステイナブルな仕組み（ベンチャー創出・成長と国際評価技術センター等）の取組みを推進

次世代プロジェクト (県費+国費)					神奈川県	外来感染症	未病改善国際
i. 細胞膜センサの開発 KISTEC/東大: 竹内	ii. 腸内細菌叢の革新的制御技術開発 KISTEC/国産大: 福田(真)	iii. グノム構築技術による創薬研究基盤の開発 KISTEC/東工大: 松澤	iv. 光操作に基づく医療技術の創出 KISTEC/東大: 佐藤	v. 脳梗塞治療のための「細胞」材料 KISTEC/東京医科歯科大: 津田	神奈川県 い未病コホート 国立保健福祉大: 成枝	外来感染症の防疫等に資する社会実装評価プロジェクト	未病改善国際評価技術センター(関西中心) (機能性食品+腸内細菌+ヒト試験) (がん保険分析法国際標準化)

Figure Overview of "Healthcare New Frontier" Leading Project from Kanagawa (as of Reiwa 3)

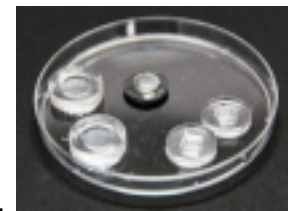
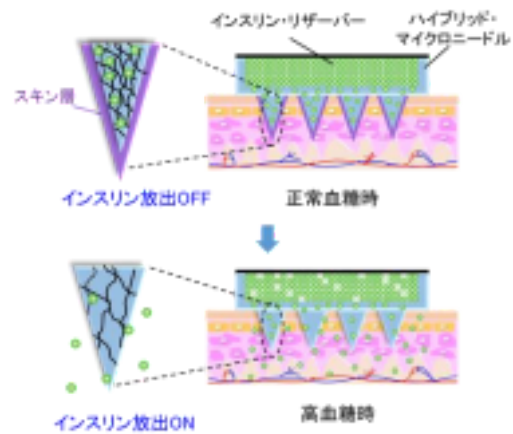
<Introduction of Commercialization Project>

1. Commercialization Project 1 "Development of Autonomous Next-Generation Artificial Pancreas by Just Sticking"

KISTEC Project Name : Promising seeds development project "Paste-only artificial pancreas"  
project Project leader: Ryo Matsumoto (Associate Professor, Institute of Biomaterials Engineering, Tokyo Medical and Dental University) Sub-leader: Takayoshi Suganami (Professor, Institute of Environmental Medicine, Tokai National University Organization)

"Machine" We aim to commercialize a minimally invasive microneedle-type insulin patch = "just stick artificial pancreas" that can automatically administer insulin according to the blood glucose level without being required and can be used continuously for one week.

Phenylboronic acid (PBA) -containing gels swell at high glucose concentrations and shrink at low glucose concentrations to form a wall of shrinkage layers on the surface called the "skin layer"  
Dehydration insulin that utilize this phenomenon from the network structure of the swollen gel during insulin



prevents the release of insulin molecules during hyperglycemia. (Figure 2).

Figure 1 Prototype

Figure 2 Operating Principle

2. Commercialization Project 2 "Development of Mass Preparation Innovation Technology for Regenerated Hair" KISTEC Project Name: "Development of Mass Preparation Innovation Technology for Regenerated Hair"

Project Leader: Junji Fukuda (Yokohama National University Graduate School) Professor, Graduate School of Engineering)

By mixing epithelial and mesenchymal cells derived from hair follicles into a uniquely developed culture vessel, a large amount of transplanted tissue (hair follicle primordia) required for transplantation is produced by the self-organization phenomenon of cells. By establishing "cell proliferation, preparation of transplanted tissue, and precision transplantation", which are the three technologies necessary for hair regrowth medicine, and by achieving the proof of concept using human cells, based on the unique culture technology that can be prepared in Japan. We are aiming to commercialize hair regrowth medicine (Fig. 2), which has excellent safety and cost and enables

the fundamental treatment of alopecia, which replaces the current treatment of hair transplantation.

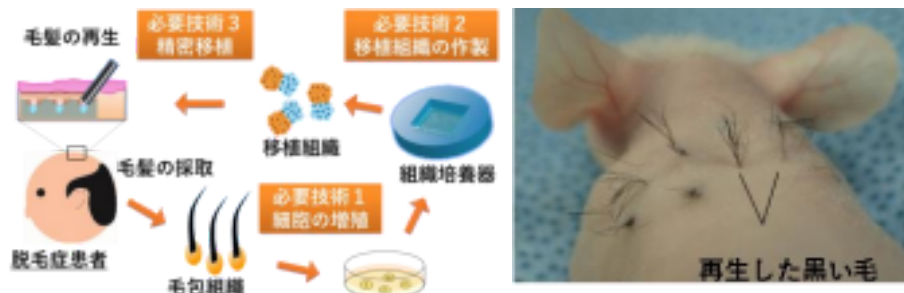


Fig. 1 Hair regenerated after transplantation to mice Fig. 2 Outline and necessary technology of hair regenerative medicine