



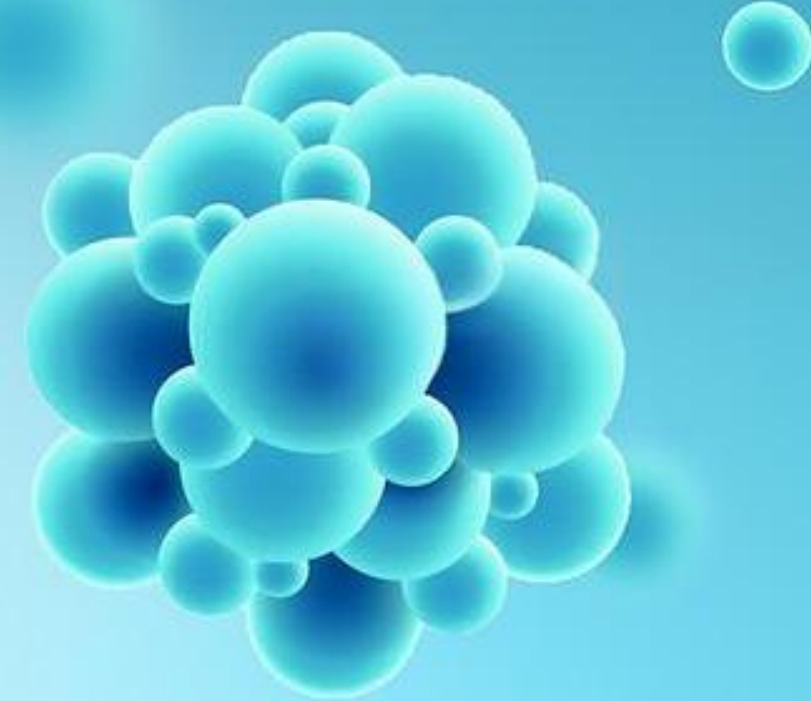
香港大學

THE UNIVERSITY OF HONG KONG

**NORDIA
BIOTECH**

Pluripotent Stem Cell-Derived Human Islet Organoids for Cure of Diabetes

**the 1st Organoid Regenerative and Medical
Company in Hong Kong
International Diabetes Treatment Center**



**Professor Zhou Zhongjun
The University of Hong Kong
Chui Fook-Chuen Professorship**

Diabetes: High incidence, high drug restrictions, unmet medical needs



Fast-growing diabetic population

International Diabetes Foundation
2050: Global 0.85 billion, growth rate 45%;
China 0.17 billion, growth rate 14%;
China: 0.35+ billion pre-diabetic patients;
0.08+ billion undiagnosed patients.



Large market size with great market potential

Global Diabetes Market CAGR 8.87%
USD 182.3 Billion (2022) **Vs** USD 360.2 Billion (2030)
Chinese diabetes market CAGR 7.9%
USD 47 Million (2023) **Vs** USD 93 Million (2032)
China spent 168.9 billion USD in 2024 in the entire fields of diabetes treatment.



Pain points: Incurable & life-long administration

Treatment	Administration	Multiple adverse reactions
insulin	Subcutaneous injection, every day/week	Hypoglycemia, gain weight and injection-related adverse reactions
GLP-1	Subcutaneous injection, once a week; oral, once a day	Gastrointestinal adverse reactions, blindness, sarcopenia, impotence, Weakness, low mood, immune response
Metformin	Oral, every day	Gastrointestinal adverse reactions, lactic acidosis, drug resistance
Transplant	One-time, effective for a few years	Insufficient donor with poor quality, high immune rejection



Future trends: Cell therapy
Stem cells are directionally differentiated into the islet organoids, and transplanted into the patients

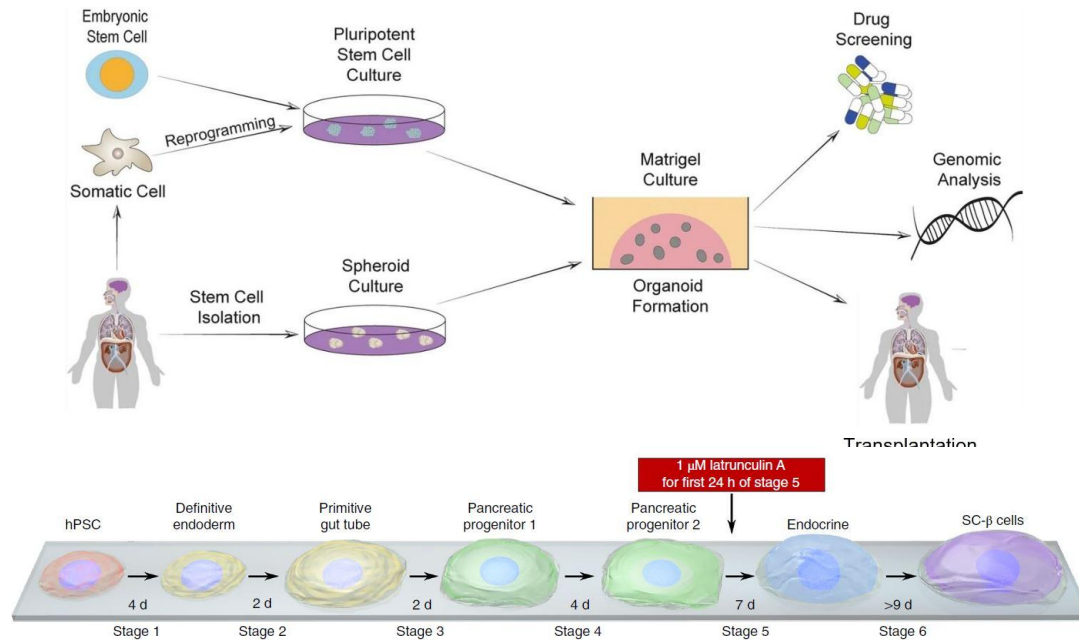
Emerging cell therapies for the treatment of diabetes

Originate from the University of Hong Kong



HKU
Med

NORDIA
BIOTECH



Regeneration: The first cell therapy clinical trial for diabetes was carried out by ViaCyte in 2014 using 2D culture platform in the USA.

Current situation: There is no cell therapy products has been approved as a drug for market release worldwide.

International: Fastest-progressing product is from Vertex which is in Phase I/II/III for Type I diabetes.

In China: Two products with autologous islet cells in Phase I and xenogenous islet cells in Phase I/IIa.

Break through the limitations of old technologies

- ✗ Manual dissociation & re-aggregation, this kind of 2D to 3D culture transition leads to cell death & disrupt structural integrity
- ✗ Long production cycles, difficult manufacture processes, with increased cost & high contamination risks.

Nordia bio Solution:

self-assembled, universal organoids

- ❑ Original patented technology & exclusive production platform
- ❑ Universal islet organoids, safe and long-lasting treatment options

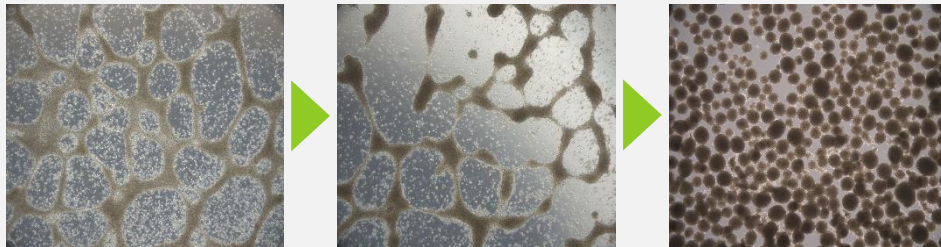
Core Technology

Production Process:

The world's leading technology in the field of pancreatic islet organoids

Spontaneously formed islet organoids

Mouse experiments: safe and effective



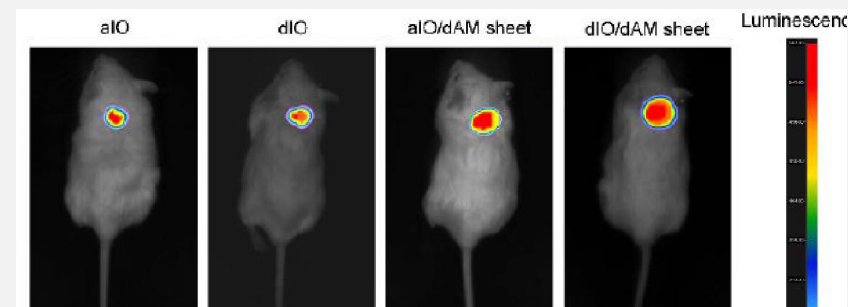
- No digestion-recombination step, suitable for manufacture, reducing costs and **increasing efficiency by 60%**
- Retaining intercellular communications with full functions, increasing insulin secretion **by up to 2 times**
- Chemically-define human culture system **without animal components** replaces the commonly used matrigel

Single cell analysis	α cells	β cells	γ cells	Acinar cells
Nordia product ($\alpha + \beta$ over 90%)	60.51%	32.13%	0.81%	0.19%
Competitor product (Very few active cells)	0.15%	8.27%	0.02%	0.02%
Primary Islets 1	54.81%	19.33%	4.41%	7.41%
Primary Islets 2	36.19%	29.23%	2.26%	3.21%

Nordia product is very similar to the primary islets in human body, containing all types of mature functional cells of primary islets with balanced proportions in reasonable locations.

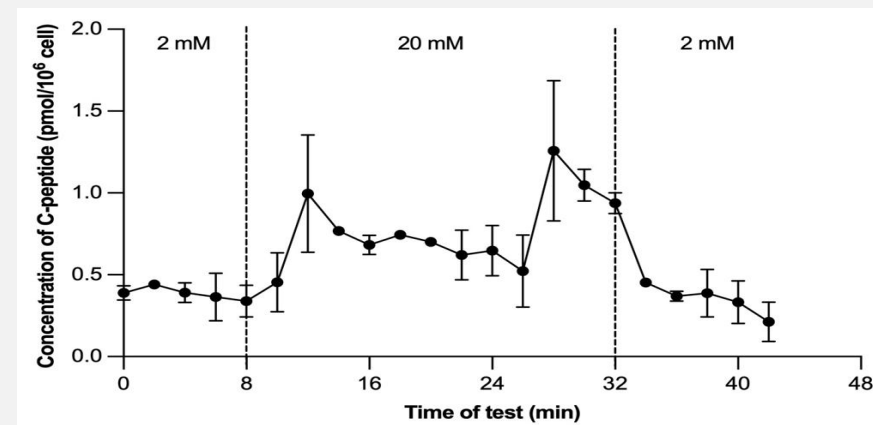
Safety test:

- **In vivo luciferase assay: No malignancy, No migration (subcutaneous transplantation)**



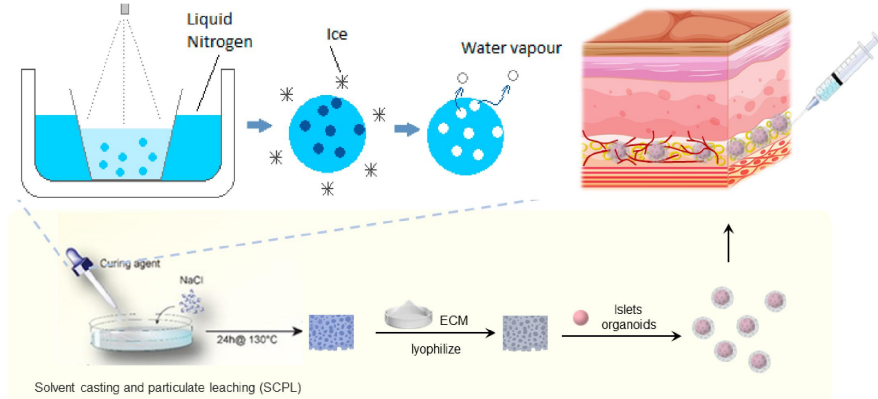
Functional test:

- **Dynamic & physiological insulin secretion in response to high glucose challenge**

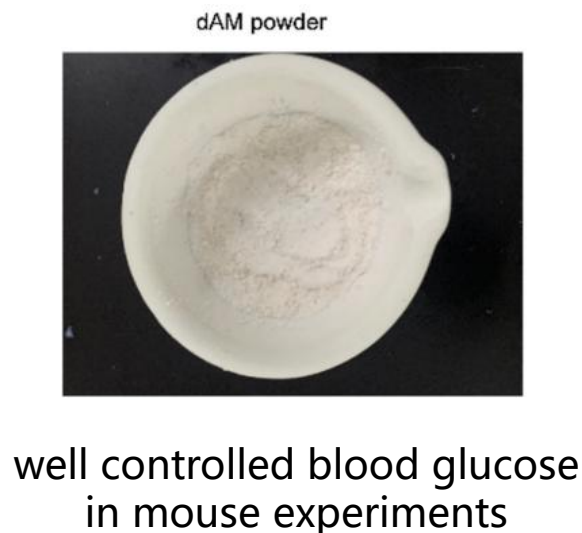
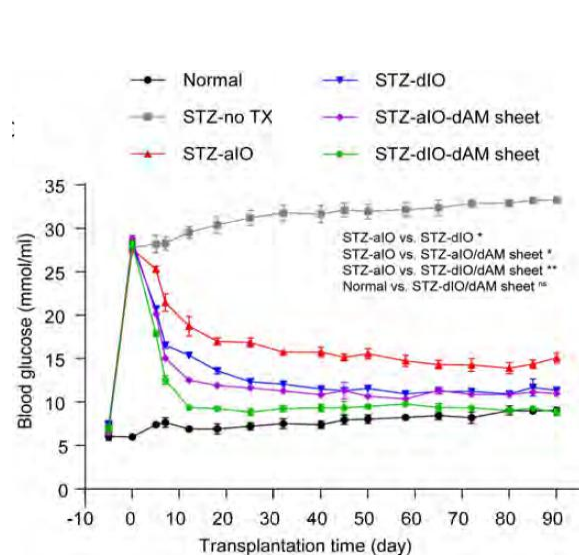


Core Technology

Self-developed Biomaterials: excellent biocompatibility, increase the long-term viability of the organoids



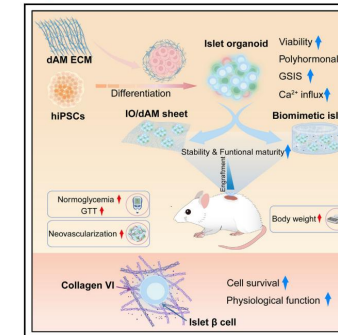
Co-transplant: The microporous skeleton envelops organoids to promote angiogenesis for long-term survival.



Cell Stem Cell

Enhanced viability and functional maturity of iPSC-derived islet organoids by collagen-VI-enriched ECM scaffolds

Graphical abstract



Authors

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In brief

Jin and colleagues demonstrate that dAM ECM hydrogel promotes islet organoid development and sustains viability. The dAM sheet enhances hiPSC-islet organoid engraftment and rapidly reverses diabetes. The Col-VI-enriched ECM scaffold is able to support the key features of islet organoids. These findings offer insights for improved biomimetic islet organoids in diabetes treatment.

The article Published in **Cell Stem Cell** in 2025

International patents:

- US Provisional 63/637,745
- PCT/CN2025/090611
- more patents are being preparation

Universal islet organoids are under development

- ❖ Gene editing and T cell co-culture were used to reduce the immunogenicity and immune rejection; strive to develop the shelf-type products for every patient
- ❖ Non-tumorigenic, safe islet organoids



Core Team: extensive experience in both the academic and industrial fields

Founder and R&D team

Prof. Zhou Zhongjun, Founder & Chairman



Ph.D., Karolinska Institute, Sweden
National Torch Scholar, National Prize for Progress in Science and Technology
Overseas Outstanding Young Scholar
Pearl River Scholars Chair Professor
Croucher Foundation Senior Scholar

management team

Prof. Kathryn Chen, CMO



Doctor of Medicine, University of Wales
Sir David Todd Professor of Medicine, HKU
Deputy Director of the Diabetes Center in Queen Mary Hospital.
Famous Specialist in Diabetes, lipid metabolism and vascular complications

Clinical team

International Consultant team

Prof. Karl Tryggvason



Internationally renowned islet precursor cell expert
Prof. of Diabetes, Duke-NUS
Academician of the European Academy of Sciences
Academician of the Royal Swedish Academy of Sciences
Former vice president of the Karolinska Institute in Sweden
Member of the Nobel Prize Committee in Physiology and Medicine



Prof. Andras Nagy



Internationally renowned universal stem cell expert
Fellow of the Royal Society of Canada, Professor in the University of Toronto, Tier 1 Canada Research Chair in Stem Cells and Regeneration
Foreign Member of the Hungarian Academy of Sciences



Established 1st human embryonic stem cell lines; Developed immune escape+ non-tumorigenic cell lines

He Yi, CTO & co-Founder



Ph.D. & Postdoc in Biomedical Sciences, HKU
Postdoc in Regenerative Medicine and Health, Chinese Academy of Sciences
Intern in Harvard

Yang Bin, CEO



Ph.D. in Biomedical Engineering, Southeast University; MPhil in Computer Science, HKU
Certified Public Accountant, Security Qualification Certificate
Fund Qualification Certificate
15+ years investment & industry experience, ever worked in PWC

Prof. Li Zhaoshen, Academician of the Chinese Academy of Engineering



Head of the Department of Gastroenterology of Shanghai Changhai Hospital, Head of the National Clinical Research Center for Digestive System Diseases, Head of the Shanghai Institute of Pancreatic Diseases
won 4 prizes of the National Science and Technology Progress Award



Prof. Alice KONG



Doctor of Medicine, The Chinese University of Hong Kong
Professor of Medicine and Therapeutics, CUHK
Consultant in Prince of Wales Hospital
20+ years of experience in the treatment of type 2 diabetes and obesity in adolescents and adults



Long Fei, Director of R&D



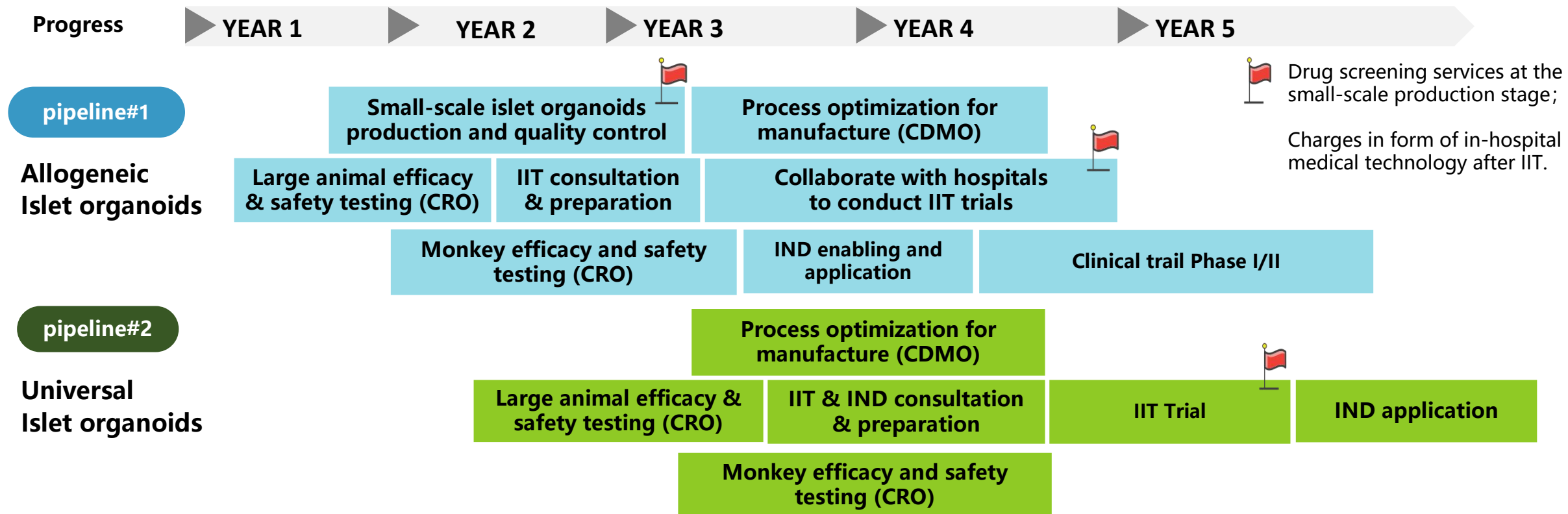
Ph.D. in Biomedical Sciences, HKU; Assistant researcher in Chinese Academy of Sciences; Shenzhen overseas high-level talents
BD manager of multinational pharmaceutical company

Xie Lijun CFO



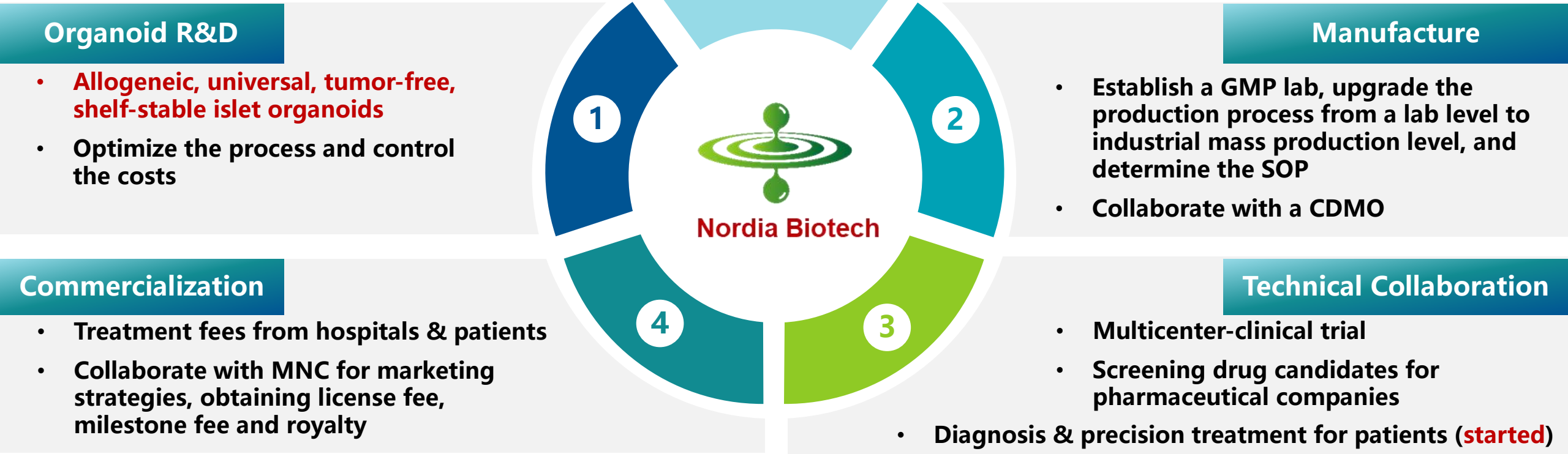
30+ years of experience in international capital markets
Responsible officer(RO1,4,9)
Security Qualification Certificate
Fund Qualification Certificate
Formal Investment Director of China Construction Bank

Milestone



- ★**Hong Kong:** establish early R&D center to consolidate and enhance our technology;
assemble the teams for R&D, manufacture, IP application, registration, clinical trails and so on.
- ★**Hong Kong:** drug screening services for early revenue.
- ★**Hong Kong and Free Trade Zones in the Mainland of China:** clinical trials, new drug registration & applications;
- ★**Hospitals in Hong Kong and the Mainland of China:** treatment for diabetes, serving and giving back to society;
- ★**More:** Develop organoid-assisted precision treatment of pancreatitis and pancreatic cancer, and expand application scenarios.

Long-term planning and win-win collaboration



Clinical collaboration

瑪麗醫院
Queen Mary Hospital

威爾斯親王醫院
PRINCE OF WALES HOSPITAL

長海醫院
CHANGHAI HOSPITAL

HKU Med LKS Faculty of Medicine
Clinical Trials Centre
香港大學臨床試驗中心

香港大學深圳醫院
The University of Hong Kong - Shenzhen Hospital

香港糖尿病及肥胖症研究所
HONG KONG INSTITUTE OF
DIABETES AND OBESITY

Financing and funding



Series Angel

Completed

Time: 2024H1

Amount: **USD 0.9M**

Investors: Hong Kong X Fund,
the University of Hong Kong, etc

Government Funding

Approval

Time: 2025

From: The Hong Kong Innovation and Technology Commission (ITC)

Project: Technology Start-up Support Scheme for Universities (TSSSU+)

Project: HK Science and Technology Parks Incu-Bio programme

Amount: over **USD 1.35M** non-equity support

Pre-A

Completed

Time: 2025.11

Amount: **USD 4.5M**

Investors: PE funds, Industrial capital,
family trusts & HKU, etc

Government Funding

Approval

Time: 2026.3 From: ITC

Project: Research, Academic and Industry Sectors
One-plus Scheme (RAISe+)

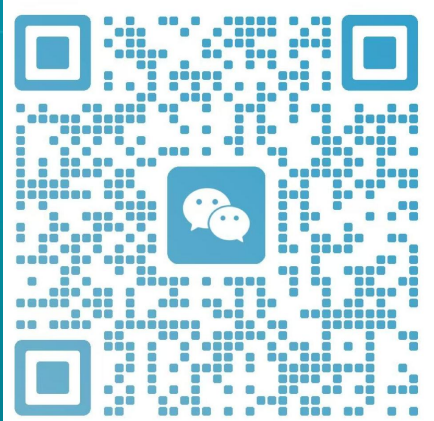
Amount: up to **USD 19M** non-equity support

Pre-A+

in 2-3 years, when IIT trial
achieve positive results;
Nordia plans to raise **USD 6.4M**

THANK YOU FOR
LISTENING

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Competitor Comparison

Islet regeneration		Nordia bio	Vertex VX-880	Competitor A
Indications		Type I diabetes, secondary diabetes	Type I diabetes	Type I diabetes
Progress		Pre-IND	US Phase 1/2/3 ongoing	China Phase 1 recruiting
Stem cells	Cell Source	Embryonic stem cells, East Asian	Embryonic stem cells, Euramerican	Inducible pluripotent stem cells, East Asian
	Range of Application	Heterogeneous, universal, shelf-type products	Heterogeneous, universal, shelf-type products	From and for the patient himself only
Manuf acture	Culture medium	Xeno-free culture condition	Added animal-derived ingredients	
	3D structure	Spontaneously	2D adherent culture, digested and re-aggregation artificially	
Quality	Cell communication	strong, self-regulation smoothly	Weak interaction	There may be no interaction
	Cell subtype	The subtypes and their locations are similar to the primary islets	It is mainly β cells	Almost all β cells
Bio- aterial	Cell Viability	Promote angiogenesis, oxygen and nutrients are sufficient	Encapsulated with materials but no functions	No biomaterials
	Cell homeostasis	Complete coverage, less affected by the microenvironment	The pore size is large and the cells can easily be affected by the microenvironment	No biomaterials