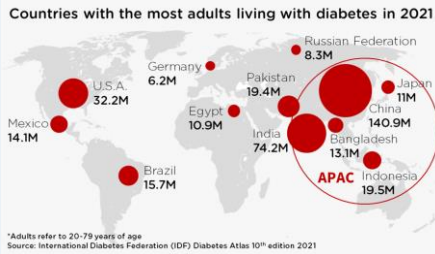
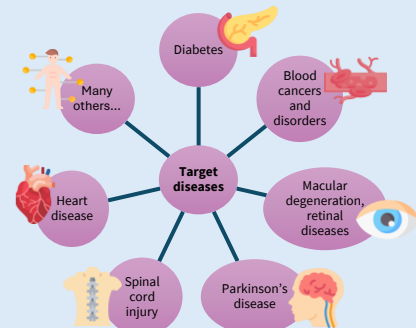
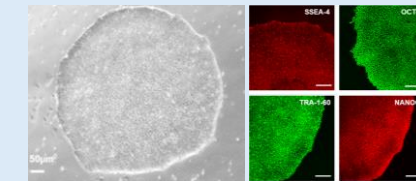


## Induced Pluripotent Stem Cells, a Platform Technology

### Why Does It Matter?

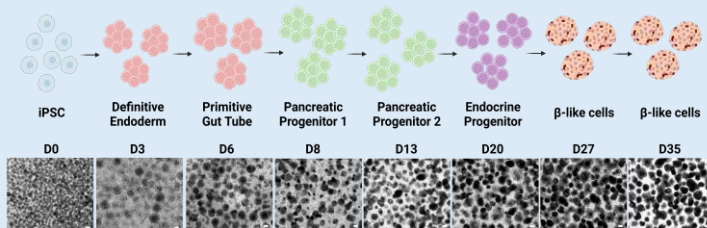


**Diabetes is a health crisis** that affects more than 530 million people globally. More than half of all diabetes patients live in APAC, with a dominant proportion in China. Market growth is expected at **CAGR of over 10%**. The **insulin therapy** market is estimated at USD 6.3 billion, treating over 70 million patients. Yet, insulin therapy is **not effective enough** for some patient groups.



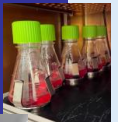
## Off-The-Shelf iPSC-Derived Pancreatic Islet Cell Therapy

Human iPSCs undergo a proprietary, controlled, multi-step directed differentiation process to turn into functional pancreatic islet cells.

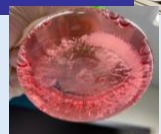
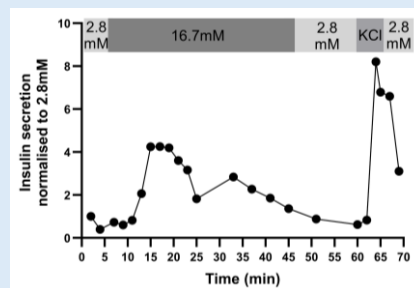
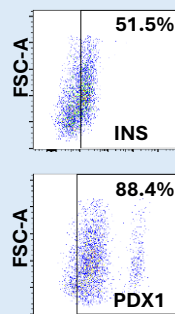
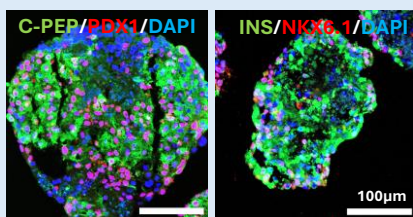


### iPSC-Islet Cells

- ✓ Can be manufactured in unlimited quantity
- ✓ Can restore insulin secretion function
- ✓ Are produced on-demand
- ✓ Can be both universal or personalised



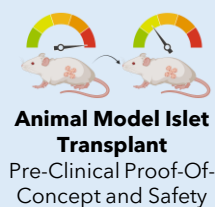
Expression of insulin and beta cell markers are confirmed in iPSC-islet cells



Lab-developed iPSC-islet cells secrete insulin in response to high glucose challenge.

## Pre-Clinical and Clinical Development Pathway

We have obtained **proof of concept** that iPSC-islet cells are **functional in vitro** and when transplanted in animal models. We are seeking **partnerships and investment** for early phase clinical trials to evaluate safety and efficacy in patients.



**Clinical Phase I**  
Safety and Tolerability (<50)

**Clinical Phase II**  
Safety, Efficacy and Tolerability (>100)

**Clinical Phase III + Long-Term Effectiveness (>1000)**

Please contact us if you are interested to work together.

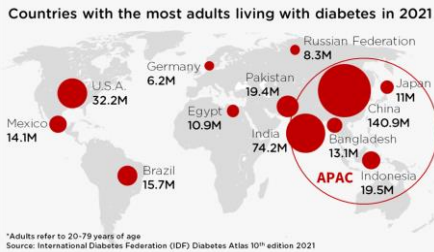
### References:

1. Ho BX, Teo AKK and Ng NHJ (2024) Innovations in bio-engineering and cell-based approaches to address immunological challenges in islet transplantation. *Front. Immunol.* 15:1375177. doi: 10.3389/fimmu.2024.1375177
2. Tan, L.S., Chen, J.T., Lim, Y.X.L., and Teo, K.K.A. (2022). Manufacturing clinical-grade human induced pluripotent stem cell-derived beta cells for diabetes treatment. *Cell Proliferation* 55(8), e12332. Apr 26
3. Lim, Y.X.L., Ching, C., Kong, D.W., Chan, S.Y., and Teo, K.K.A. (2022). Generating pancreatic beta-like cells from human pluripotent stem cells. *Methods in Cell Biology*



## 多功能干细胞技术平台

### 为什么值得关注？

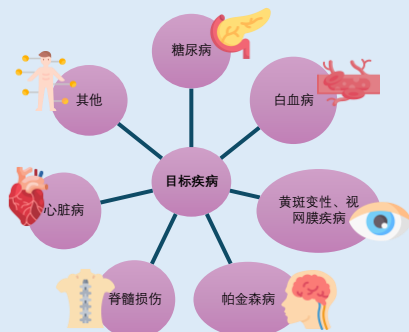
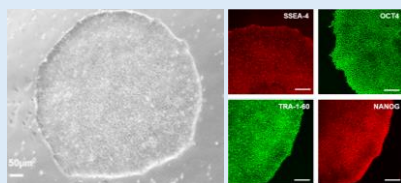


糖尿病是一种健康危机，影响全球超过5.3亿人。超过一半的糖尿病患者生活在亚洲，在中国具有很大比例的患者。糖尿病的市场预计年复合增长率为10%，在某些亚洲国家甚至更高。

亚洲胰岛素治疗市场规模估计为63亿美元（总可服务性市场），针对7000多万糖尿病患者。然而，胰岛素治疗对某些患者群体来说不够有效。

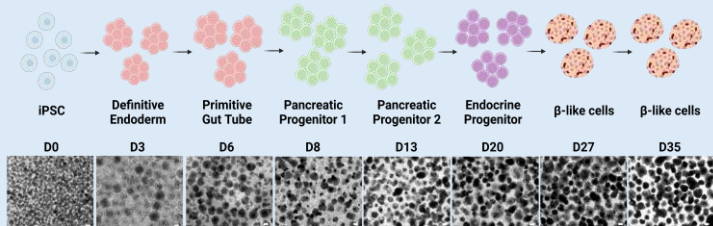
人体诱导多功能干细胞是具有胚胎特性的独特细胞类型。细胞来源易于获取（血液、皮肤），拥有无限的成长潜力，也能够分化成身体的任何细胞类型。

基于人类多能干细胞的细胞疗法使得再生和修复受损/受伤的组织成为可能。慢性病的增加将推动对基于多能干细胞的疗法的需求。



## 多功能干细胞分化的现有胰岛细胞

多功能干细胞经过专有的、受控的、多步骤定向分化过程，转变为功能性胰岛细胞。

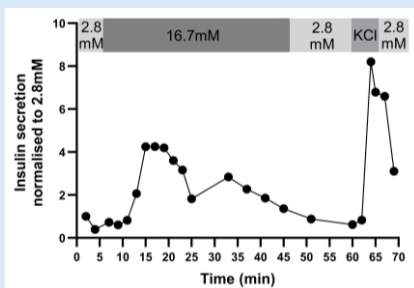
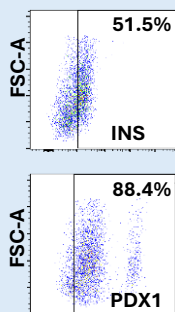
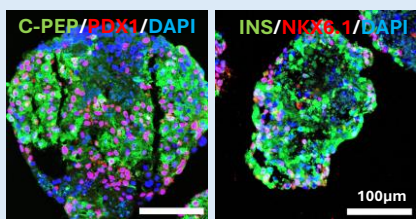


### 现有胰岛细胞

- ✓ 可以无限量生产
- ✓ 恢复胰岛素分泌功能
- ✓ 是按需、现成的细胞替代疗法
- ✓ 既可以通用也可以个性化



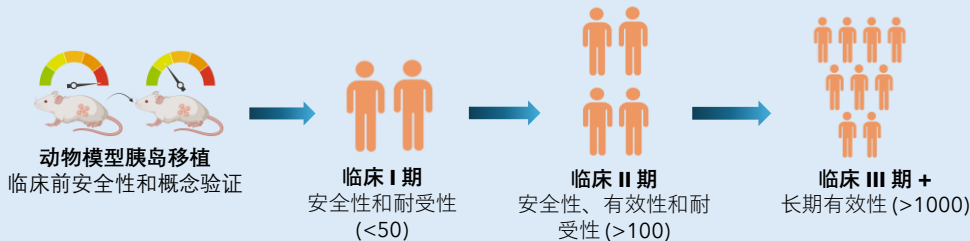
荧光显微镜图像显示胰岛球体内胰岛素激素（绿色）和β细胞标记物（红色）。



实验室开发的胰岛细胞分泌胰岛素以应对高糖挑战。

## 临床前和临床发展途径

我们已经获得了多能干细胞分化的胰岛细胞在体外和移植到动物模型中时具有功能的概念证明。我们正在寻求早期临床试验和细胞制造的合作伙伴关系和投资，以评估患者的安全性和药物疗效。



如果您有兴趣合作，请与我们联系。

### 科学参考文献：

1. Ho BX, Teo AKK and Ng NHJ (2024) Innovations in bio-engineering and cell-based approaches to address immunological challenges in islet transplantation. *Front. Immunol.* 15:1375177. doi: 10.3389/fimmu.2024.1375177
2. Tan, L.S.#, Chen, J.T.#, Lim, Y.X.L., and Teo, K.K.A. (2022). Manufacturing clinical-grade human induced pluripotent stem cell-derived beta cells for diabetes treatment. *Cell Proliferation* 55(8), e13232. Apr 26
3. Lim, Y.X.L., Ching, C.#, Kong, D.W.#, Chan, S.Y., and Teo, K.K.A. (2022). Generating pancreatic beta-like cells from human pluripotent stem cells. *Methods in Cell Biology*

