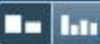


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**Name of Journal:** *World Journal of Stem Cells*

**Manuscript NO:** 55028

**Manuscript Type:** REVIEW

**Human embryonic stem cells as an *in vitro* model for studying the developmental origin of type 2 diabetes**

Chen ACH *et al.* hESCs as a model for studying DOHaD

Andy Chun-Hang Chen, Kai Fai Lee, William Shu Biu Yeung, Yin Lau Lee

**Abstract**

The developmental origins of health and diseases (DOHaD) is a concept stating that adverse intrauterine environments contribute to the health risks of offspring. Since

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## [Insulin Production by Human Embryonic Stem Cells | Diabetes](#)

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Aug 01, 2001 - In the current study, we used pluripotent undifferentiated human embryonic stem (hES) cells as a model system for lineage-specific differentiation. Using hES cells in both adherent and suspension culture conditions, we observed spontaneous in vitro differentiation that included the generation of cells with characteristics of insulin-producing  $\beta$ -cells.

Cited by: 1415

Author: Suheir Assady, Gila Maor, Michal Amit, J...

Publish Year: 2001

## [Gene-edited human stem cell-derived \$\beta\$ cells from a patient ...](#)

<https://stm.sciencemag.org/content/12/540/eaax9106> ▾

8 hours ago - INTRODUCTION. Derivation of induced pluripotent stem cells (iPSCs) from patients followed by differentiation into disease-relevant cell types holds great promise for in vitro disease modeling, drug screening, and autologous cell replacement therapy for multiple diseases (1, 2). Diabetes mellitus is caused by the death or dysfunction of insulin-producing  $\beta$  cells within the pancreas.

## [Human pluripotent stem cells: an emerging model in ...](#)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3557771>

Feb 15, 2013 - Developmental biology has long benefited from studies of classic model organisms.

Recently, human pluripotent stem cells (hPSCs), including human embryonic stem cells and human induced pluripotent stem cells, have emerged as a new model system that offers unique advantages for





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## Human embryo-like model created from human stem cells

<https://www.cam.ac.uk/stories/human-embryo-like-model-from-human-stem-cells>

2 hours ago · The **human** embryos are donated for research with consent; some of these come from eggs that were fertilised at in vitro fertilisation clinics but not used. The **embryonic stem cells** extracted from these embryos have the ability to develop into any **type** of specialised **cell** in the body, or can divide into more **stem cells**. The 14-day rule

## Human Embryonic Stem Cells as a Powerful Tool for ...

<https://www.nature.com/articles/pr2006205>

Aug 01, 2006 · **Human embryonic stem cells** (HESC) are pluripotent **stem cell** lines derived from the inner cell mass (ICM) of **human** blastocyst-stage embryos. They are ...

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Author: Tamar Dvash, Dalit Ben-Yosef, Rachel Ei...

Publish Year: 2006

## UK scientists use human stem cells to create laboratory ...

<https://www.msn.com/en-gb/news/newslondon/uk...> ▾

UK scientists have for the first time created a laboratory “**model**” of the early stages of life by using **human stem cells**. They believe it “holds huge potential” to help understand causes ...

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<https://www.dailymail.co.uk/sciencetech/article...>

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<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4958687>

Jul 26, 2016 · Type 2 **diabetes mellitus** (T2DM) is the most common lifestyle disorder nowadays. At present, there is no cure for diabetes. **Human embryonic stem cells** (hESCs) **therapy** is a new approach to treat it. **hESCs** can produce unlimited number of **pancreatic islet cells** and are ...

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## Human embryonic stem cells: prospects for development ...

<https://dev.biologists.org/content/131/22/5515>

Nov 15, 2004 · It is widely anticipated that **human embryonic stem** (ES) **cells** will serve as an experimental **model for studying** early development in our species, and, conversely, that studies of development in **model** systems, the mouse in particular, will inform our efforts to manipulate **human stem cells** in **vitro**. A comparison of primate and mouse ES **cells** suggests that a common underlying ...

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