

## Stem Cell Products

# Robust culture system for undifferentiated human stem cells

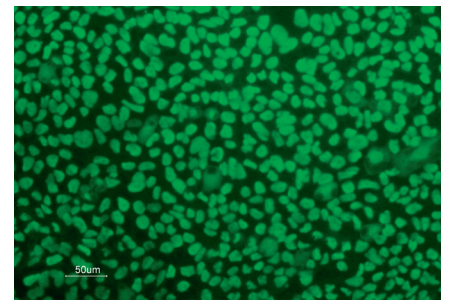


## DEF-CS™ – Defined culture system for efficient expansion and scale up of hPSC.

An easy-to-use and robust culture system for the efficient expansion and of human pluripotent stem cells in a feeder-free and defined environment. The highly reproducible nature of the system coupled with the stable high growth rate makes it ideal for the mass production of cells.

### Features

- Includes additives and coating compound
- Single cell passaging
- Single cell applications
- Efficient expansion
- Robust system with high reproducibility
- No cell selection is needed
- Virtually no background differentiation
- Obtain controlled material for subsequent differentiation in any format



**Figure 1.** Human pluripotent stem cells remain undifferentiated when cultured in DEF-CS over time. Human iPSC cells cultured for 23 passages in DEF-CS characterised by Oct-4 staining.

The fact that cells are maintained in an undifferentiated state with virtually no background differentiation means that no cell selection is required. Enzymatic passaging as single cells also makes DEF-CS perfect for single cell applications including high-throughput screening, transfection and seeding onto scaffolds.

**DEF-CS** is a complete culture system including basal medium as well as additives and coating compound. A number of human pluripotent stem cell lines cultured in DEF-CS are also available for purchase.



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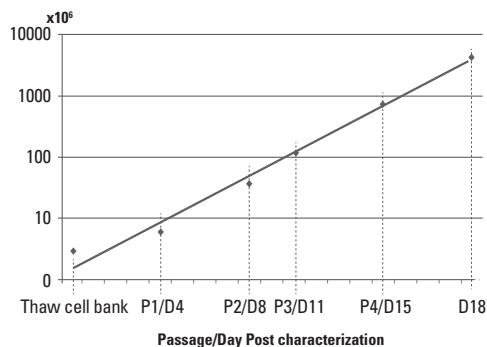
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**Applications**

- Scale up and mass production of human pluripotent stem cells
- Bioreactor
- Transfection and reprogramming
- Single cell seeding for high throughput screening
- Seeding in scaffolds (Tissue engineering, maturation of human pluripotent stem cells towards tissue-like structures)

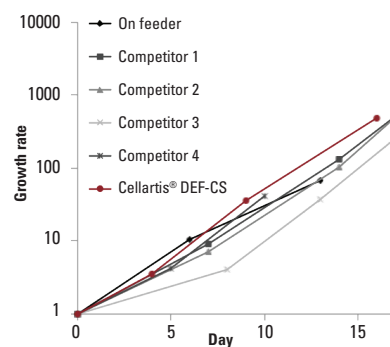


**Expansion potential from cell bank**



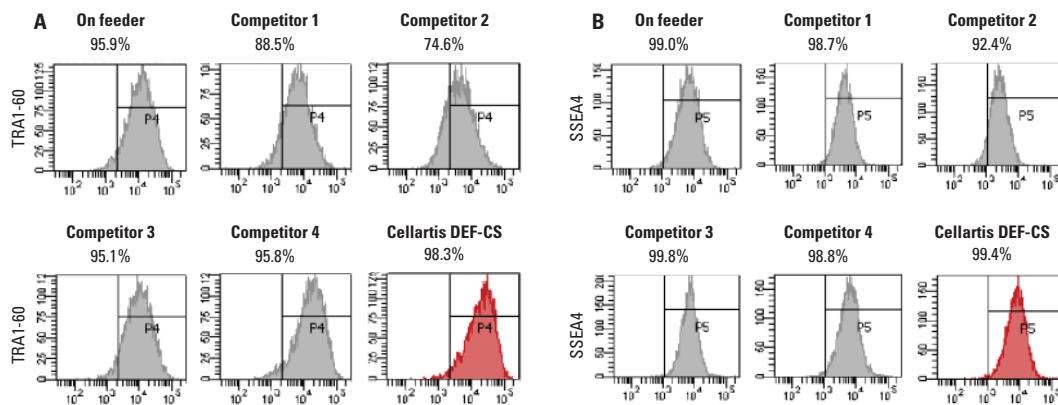
**Figure 2.** Expansion potential from characterized working cell bank. The system can produce in the region of  $2 \times 10^9$  pluripotent stem cells within 4 passages (18-20 days) from a thawed cell bank vial ( $2-2.5 \times 10^6$  cells).

**Comparison of growth characteristics**



**Figure 3.** DEF-CS showed the highest and most robust growth rate compared to other stem cell culture systems. Cells were cultured for 3 weeks prior to testing.

**Quantitative pluripotent marker analysis**



**Figure 4.** Pluripotency of cells grown for 5 weeks in DEF-CS stem cell culture media as compared to other available culture systems. DEF-CS revealed the highest proportion and intensity of TRA1-60 (A), and SSEA4 (B).

**PRODUCTS**

Cat. #	Product	Description
Y30010 <b>SAMPLE AVAILABLE</b>	DEF-CS 500	Complete kit for culturing human pluripotent stem cells, including 500 ml basal medium, additives and coating compound
<b>Related products</b>		
Y00260	DEF-hiPSC™ ChiPSC4	From source cell line DEF-hiPSC™ ChiPSC4 and DEF-hiPSC™ ChiPSC18, cultured and frozen in DEF-CS – Approximately $3 \times 10^6$ cells/vial
Y00300	DEF-hiPSC™ ChiPSC18	

Learn more at [www.clontech.com/stemcells](http://www.clontech.com/stemcells)

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