

Takara Bio Europe AB

# Cellartis® DEF-CS™ Basal Medium with Additives User Manual

Cat. No. Y30017  
(111518)

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**Takara Bio Europe AB**

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## I. Introduction

Cellartis DEF-CS 500 Basal Medium with Additives is optimized for use with Cellartis DEF-CS 500 COAT-1 (Cat. No. Y30012) for efficient expansion and scale-up manufacturing of human pluripotent stem (hPS) cells in a feeder-free and defined environment.

The basal medium, coating substrate, and additives are sold as the Cellartis DEF-CS 500 Culture System (Cat. No. Y30010).

All procedures described in the manual are optimized for Cellartis hPS cell lines cultured with the DEF-CS 500 Culture System. If you wish to use Cellartis DEF-CS Culture Medium for other human induced pluripotent stem cells, or with other coating reagents, please be aware that procedures and protocols may have to be adjusted.

This product should only be handled by persons who have been trained in laboratory techniques and should only be used in accordance with the principles of good cell culture practice. Takara Bio Europe AB recommends the use of media and reagents according to this manual. Takara Bio Europe AB cannot guarantee correct technical feedback on customer cultures unless the below culture instructions have been followed.

## II. List of Components

### Cellartis DEF-CS 500 Basal Medium with Additives (Cat. No. Y30017)

- 500 ml Cellartis DEF-CS 500 Basal Medium (Cat. No. Y30011; not sold separately)
- Cellartis DEF-CS 500 Additives (Cat. No. Y30016; not sold separately)
  - 2 x 750 µl DEF-CS GF-1
  - 500 µl DEF-CS GF-2
  - 200 µl DEF-CS GF-3

## III. Additional Materials Required

The following materials are required but not supplied:

- PBS Dulbecco's w/o Ca<sup>2+</sup> & Mg<sup>2+</sup> (D-PBS –/–)
- TrypLE Select Enzyme (1X), no phenol red
- Cell culture vessels, Tissue culture treated polystyrene surface
- General cell culture equipment used in cell culture laboratory

## IV. Recommended Materials

The following materials are recommended but not supplied:

- Cellartis DEF-CS 500 COAT-1 (Cat. No. Y30012)
- Cellartis Human ES Cell Line 121 (SA121) Kit (Cat. No. Y00025)
- Cellartis Human ES Cell Line 167 (SA167) Kit (Cat. No. Y00065)
- Cellartis Human ES Cell Line 181 (SA181) Kit (Cat. No. Y00105)
- Cellartis Human ES Cell Line 461 (SA461) Kit (Cat. No. Y00145)
- Cellartis Human iPS Cell Line 7 (ChiPSC7) Kit (Cat. No. Y00275)
- Cellartis Human iPS Cell Line 12 (ChiPSC12) Kit (Cat. No. Y00285)
- Cellartis Human iPS Cell Line 18 (ChiPSC18) Kit (Cat. No. Y00305)
- Cellartis Human iPS Cell Line 22 (ChiPSC22) Kit (Cat. No. Y00325)

## V. General Considerations

### A. Storage and Handling

Cellartis DEF-CS Basal Medium should be stored at 2–8°C; shelf life specified on product label. The Cellartis DEF-CS Basal Medium formulation contains Penicillin and Streptomycin.

Cellartis DEF-CS Additives (GF-1, GF-2, and GF-3) should be stored at –20°C; shelf life specified on product label. At first use, thaw provided vials and aliquot each component separately into appropriate volumes (mix gently before aliquoting). Store at –20°C according to expiry date on original vial. Thawed vials may be stored at 2–8°C for up to one week. Do not re-freeze aliquots after thawing.

### B. Recommended Coating Substrate

We strongly recommend using Cellartis DEF-CS 500 Basal Medium with Additives together with Cellartis DEF-CS COAT-1 (Cat. No. Y30012). For instructions on using Cellartis DEF-CS 500 Basal Medium with Additives with Cellartis DEF-CS COAT-1, see the Cellartis DEF-CS Culture System User Manual (Y30010) and/or the Cellartis DEF-CS 500 COAT-1 User Manual (Y30012), which are available at [www.takarabio.com/manuals](http://www.takarabio.com/manuals).

If using an alternative coating reagent, please see the manufacturer's instructions. Takara Bio Europe AB cannot guarantee technical feedback for non-recommended coatings and use of non-recommended reagents may require optimization.

## VI. Preparing Cellartis DEF-CS Medium

**NOTE:** All three Cellartis DEF-CS Additives (GF-1, GF-2 and GF-3) are used when thawing and passaging hPS cells. Only Additives DEF-CS GF-1 and DEF-CS GF-2 are needed when changing medium on hPS cells.

### A. Medium for Thawing or Passaging hPS Cells

1. Decontaminate the external surface of all additives and the medium bottle with an appropriate disinfectant and place in the biological safety cabinet.
2. Prepare the appropriate volume of “Cellartis DEF-CS medium for thawing or passaging” by adding DEF-CS GF-1 (dilute 1:333), GF-2 (dilute 1:1000), and GF-3 (dilute 1:1000) to Cellartis DEF-CS Basal Medium.
3. Prepare fresh medium on the day of intended use.

**Table I. Recommended volumes for seeding of the cell suspension at passage, for different cell culture vessels**

Format	DEF-CS medium (ml)	Format	DEF-CS medium (ml)
6-well	2.0	T75 flask	15.0
T12.5 flask	3.0	T150 flask	25.0
T25 flask	4.0	T225 Flask	35.0

### B. Medium for Maintenance of hPS Cells

1. Decontaminate the external surface of all additives and the medium bottle with an appropriate disinfectant and place into the biological safety cabinet.
2. Prepare the appropriate volume of “Cellartis DEF-CS medium for maintenance” by adding DEF-CS GF-1 (dilute 1:333) and GF-2 (dilute 1:1000) to Cellartis DEF-CS Basal Medium.

**NOTE:** Do not add DEF-CS GF-3 to the maintenance medium.

3. Prepare fresh medium on the day of intended use.

**Table II. Recommended volumes of DEF-CS medium at medium change, for different cell culture vessels**

Format	DEF-CS medium (ml)	Format	DEF-CS medium (ml)
6-well	4.0	T75 flask	20.0
T12.5 flask	4.0	T150 flask	40.0
T25 flask	7.0	T225 Flask	60.0

## Notice to Purchaser

This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals. Also, do not use this product as food, cosmetic, or household item, etc.

This product may not be resold or transferred, modified for resale or transfer, or used to manufacture commercial products without written approval from Takara Bio Europe AB.

If you require licenses for other use, please contact us by phone at +46.(0)31.758.0900.

Your use of this product is also subject to compliance with any applicable licensing requirements as detailed in our catalogues, on our website at <http://www.takarabio.com>, on the label or other documentation accompanying the goods. It is your responsibility to review, understand and adhere to any restrictions imposed by such statements.

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