

TeSR™-E7™

Feeder-Free, Xeno-Free Reprogramming Medium for Human iPS Cell Induction

Catalog #05910

500 mL Kit



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Product Description

TeSR™-E7™ is a serum-free, low-protein, and xeno-free medium that was originally developed for reprogramming fibroblasts with episomally delivered reprogramming vectors.¹ TeSR™-E7™ has a similar formulation to TeSR™-E8™, with the removal of TGF- β , to reduce fibroblast overgrowth and promote mesenchymal-to-epithelial transition. TeSR™-E7™ is intended for cellular reprogramming of human somatic cells (e.g. fibroblasts) to induced pluripotent stem (iPS) cells.

This medium may be used with either Vitronectin XFT™ (Catalog #07190), developed and manufactured by Primorigen Biosciences, or Corning® Matrigel® hESC-qualified matrix (Corning Catalog #354277).

Product Information

The following components are sold as a complete kit (Catalog #05910) and are not available for individual sale.

COMPONENT NAME	COMPONENT #	SIZE	STORAGE	SHELF LIFE
TeSR™-E7™ Basal Medium	05911	474 mL	Store at 2 - 8°C.	Stable for 12 months from date of manufacture (MFG) on label.
TeSR™-E7™ 20X Supplement	05912	25 mL	Store at -20°C.	Stable for 18 months from date of manufacture (MFG) on label.
TeSR™-E7™ 500X Supplement	05913	1 mL	Store at -20°C.	Stable for 12 months from date of manufacture (MFG) on label.

Please refer to the Safety Data Sheet (SDS) for hazard information.

Preparation of Complete TeSR™-E7™ Medium

Use sterile techniques to prepare complete TeSR™-E7™ medium (Basal Medium + 20X Supplement + 500X Supplement). The following example is for preparing 500 mL of complete medium. If preparing other volumes, adjust accordingly.

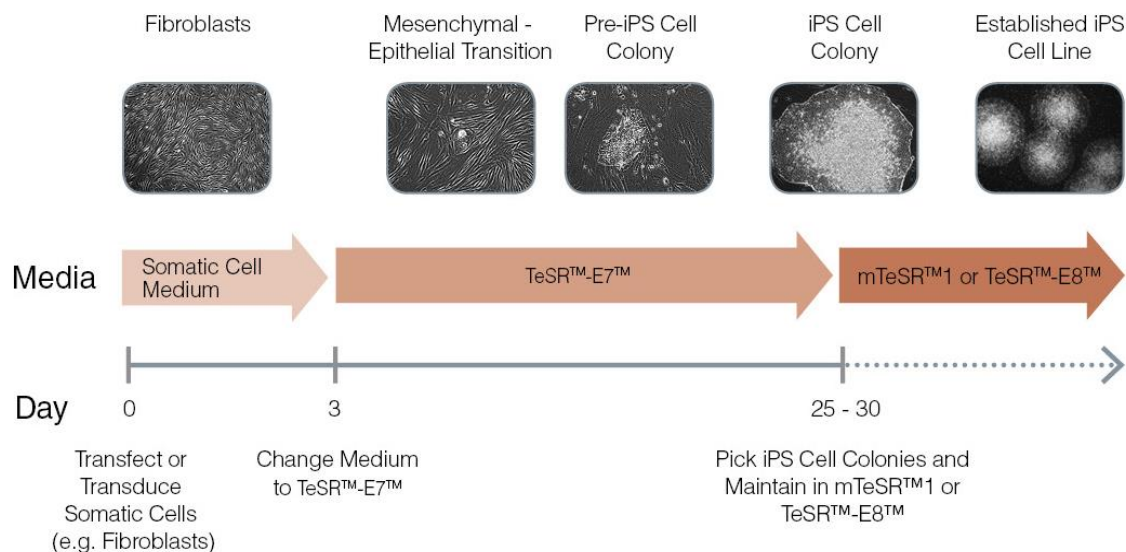
1. Thaw 20X Supplement and 500X Supplement at room temperature (15 - 25°C) or at 2 - 8°C just prior to use. Mix thoroughly.

NOTE: Once thawed, use immediately or aliquot and store at -20°C. Do not exceed the shelf life of the supplement. After thawing the aliquots, use immediately. Do not re-freeze.

2. Add 25 mL of 20X Supplement and 1 mL of 500X Supplement to 474 mL of Basal Medium. Mix thoroughly.

NOTE: If prepared using sterile techniques, complete TeSR™-E7™ medium is ready for use and does not require filtering. If not used immediately, store complete TeSR™-E7™ medium at 2 - 8°C for up to 2 weeks. Alternatively, aliquot and store at -20°C for up to 1 month. Do not exceed the shelf life of the individual components. Thaw complete TeSR™-E7™ medium at room temperature (15 - 25°C) or overnight at 2 - 8°C. Once thawed, use medium within 1 week. Do not re-freeze.

Reprogramming Time Course



Directions for Use

Please read the entire protocol before proceeding.

Indicated volumes are for a single well of a 6-well plate. If using alternative cultureware, adjust volumes accordingly.

- On **Day 0**, transfect or transduce somatic cells using desired reprogramming vector system. Plate transfected/transduced cells onto desired matrix, such as Vitronectin XF™ or Corning® Matrigel®.
NOTE: Transfection/transduction protocol should be optimized for each vector system and cell type. For a detailed example refer to the Technical Bulletin: Reprogramming Human Dermal Fibroblasts in TeSR™-E7™ to Induced Pluripotent Stem Cells Using an Episomal Vector System (Document #28065), available on our website at www.stemcell.com or contact us to request a copy.
- On **Day 1**, aspirate medium and add 2 mL of medium specific to the somatic cell type being reprogrammed. Incubate at 37°C for 48 hours.
- On **Day 3**, aspirate medium and add 2 mL of complete TeSR™-E7™ medium. Incubate at 37°C for 24 hours.
- Perform daily medium changes (2 mL/well) using complete TeSR™-E7™. Monitor the cells until iPS cell colonies appear.
NOTE: iPS cell colonies typically arise between days 20 - 30 but may vary depending on cell type and vector system used. To achieve optimal reprogramming efficiency, it is recommended to use somatic cells at low passage. For a representative example of an iPS cell colony, refer to the figure.
NOTE: It is acceptable once per week to double feed the cells (i.e. add 4 mL of TeSR™-E7™ per well) and skip a medium change the following day during the first 2 weeks of reprogramming.
- Manually isolate putative iPS cell colonies. Use either a 22 - 25 gauge needle or a pulled glass pipette to cut the putative iPS cell colony into small fragments. Then use a 200 µL micropipette with a filtered pipette tip to scrape and aspirate colony fragments.
NOTE: If there are many untransfected, partially reprogrammed and/or differentiated cells surrounding the putative iPS cell colony, these may need to be scraped away prior to isolating the iPS cell colony.
- Immediately plate iPS cell colony fragments on cultureware coated with desired matrix (e.g. Vitronectin XF™ or Corning® Matrigel®) and containing iPS cell maintenance medium (e.g. mTeSR™1 or TeSR™-E8™).
NOTE: To facilitate the initial attachment of iPS cell colony fragments, add Y-27632 (Dihydrochloride; Catalog #72302) to the maintenance medium at a final concentration of 10 µM. After 24 hours, replace the maintenance medium (without the Y-27632).
- Incubate at 37°C and perform iPS cell maintenance medium changes accordingly.
NOTE: For complete instructions on how to maintain iPS cells using mTeSR™1 or TeSR™-E8™, please refer to the corresponding documents listed in the table below. Documents are available on our website at www.stemcell.com or contact us to request a copy.

PRODUCT	CATALOG #	DOCUMENT #
mTeSR™1	05850/05857/05870/05875	29106
TeSR™-E8™	05940	29267

References

1. Chen G et al. (2011) Chemically defined conditions for human iPSC derivation and culture. Nat Methods 8(5): 424–9.



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