

mTeSR™1

Defined, feeder-free maintenance medium for human ES and iPS cells

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|----------------|-------------|
| Catalog #85850 | 500 mL |
| Catalog #85857 | 1 L |
| Catalog #85870 | 10 x 500 mL |
| Catalog #85875 | 25 x 500 mL |



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Product Description

mTeSR™1 medium is a complete, serum-free, defined formulation designed for the feeder-free maintenance and expansion of human embryonic stem (ES) cells^{1,2} and human induced pluripotent stem (iPS) cells³⁻⁵ in the undifferentiated state. Complete mTeSR™1 medium (Basal Medium + 5X Supplement) contains recombinant human basic fibroblast growth factor (rh bFGF) and recombinant human transforming growth factor β (rh TGF β). Addition of further growth factors is not required.

mTeSR™1 may be used with either Corning® Matrigel® hESC-Qualified Matrix (Corning Catalog #354277) or Vitronectin XF™ (Catalog #07180, a matrix developed and manufactured by Nucleus Biologics) as the culture matrix.

Each lot of mTeSR™1 5X Supplement is used to prepare complete mTeSR™1 medium and then performance-tested in a culture assay using human pluripotent stem cells (hPSCs).

Product Information

| PRODUCT NAME | CATALOG # | SIZE | COMPONENTS |
|--------------|-----------|-------------|--|
| mTeSR™1 | 85850 | 500 mL | <ul style="list-style-type: none">mTeSR™1 Basal Medium (400 mL)mTeSR™1 5X Supplement (100 mL) |
| mTeSR™1 | 85857 | 1 L | <ul style="list-style-type: none">mTeSR™1 Basal Medium (800 mL)mTeSR™1 5X Supplement (2 x 100 mL) |
| mTeSR™1 | 85870 | 10 x 500 mL | <ul style="list-style-type: none">mTeSR™1 Basal Medium (10 x 400 mL)mTeSR™1 5X Supplement (10 x 100 mL) |
| mTeSR™1 | 85875 | 25 x 500 mL | <ul style="list-style-type: none">mTeSR™1 Basal Medium (25 x 400 mL)mTeSR™1 5X Supplement (25 x 100 mL) |

Component Storage and Stability

The following components are sold as part of the mTeSR™1 medium kits (see Product Information) and are not available for individual sale.

| COMPONENT NAME | COMPONENT # | STORAGE | SHELF LIFE |
|-------------------------------|-------------|-------------------|------------------------------------|
| mTeSR™1 Basal Medium (400 mL) | 85851 | Store at 2 - 8°C. | Stable until expiry date on label. |
| mTeSR™1 Basal Medium (800 mL) | 85871 | Store at 2 - 8°C. | Stable until expiry date on label. |
| mTeSR™1 5X Supplement | 85852 | Store at -20°C. | Stable until expiry date on label. |

Preparation of Complete mTeSR™1 Medium

Use sterile techniques to prepare complete mTeSR™1 medium (Basal Medium + 5X Supplement). The following example is for preparing 500 mL of complete medium. If preparing 1 L of complete medium, add 2 x 100 mL of 5X Supplement to 800 mL of Basal Medium. If preparing other volumes, adjust accordingly.

NOTE: Thaw supplements or complete medium at room temperature (15 - 25°C) or overnight at 2 - 8°C. Do not thaw in a 37°C water bath.

1. Thaw mTeSR™1 5X Supplement and warm to room temperature. Mix thoroughly.

NOTE: mTeSR™1 5X Supplement may appear slightly cloudy after thawing. If this is noted, place in a 37°C water bath for approximately 5 minutes, swirling occasionally until supplement becomes clear. Supplement must be free of cloudiness before adding to basal medium (step 2).

NOTE: Once thawed, use supplement immediately or aliquot and store at -20°C for up to 3 months. Do not exceed the shelf life of the supplement. After thawing the aliquoted supplement, use immediately. Do not re-freeze.

- Add 100 mL of mTeSR™1 5X Supplement to 400 mL of mTeSR™1 Basal Medium. Mix thoroughly.

NOTE: If not used immediately, store complete mTeSR™1 medium at 2 - 8°C for up to 2 weeks. Alternatively, aliquot and store at -20°C for up to 6 months. Do not exceed the shelf life of the individual components. After thawing the aliquoted complete medium, use immediately or store at 2 - 8°C for up to 2 weeks. Do not re-freeze.

If prepared aseptically, complete mTeSR™1 medium is ready for use. If desired, the medium can be filtered using a 0.2 - 0.22 µm low protein binding polyethersulfone (PES) filter unit (e.g. Fisher 09-741-04 [0.2 µm, 250 mL]; Fisher SCGP00525 [0.22 µm, 50 mL]).

Directions for Use

For complete instructions on how to maintain human ES and iPS cells in mTeSR™1, refer to the Technical Manual: Maintenance of Human Pluripotent Stem Cells in mTeSR™1 (Document #10000005505) available at www.stemcell.com or contact us to request a copy.

Assessment of hPSCs

The following antibodies can be used to characterize hPSCs by flow cytometry or immunocytochemistry:

- Anti-Human SSEA-4 Antibody, Clone MC-813-70 (Catalog #60062)
- Anti-Human TRA-1-60 Antibody, Clone TRA-1-60R (Catalog #60064)
- Anti-Human OCT4 (OCT3) Antibody, Clone 3A2A20 (Catalog #60093)

For complete flow cytometry protocols and antibodies that can be used, refer to the Technical Manual: Maintenance of Human Pluripotent Stem Cells in mTeSR™1 (Document #10000005505), available at www.stemcell.com or contact us to request a copy.

Related Products

For related products, including specialized cell culture and storage media, matrices, antibodies, cytokines, and small molecules, visit www.stemcell.com/hPSCworkflow or contact us at techsupport@stemcell.com.

References

- Ludwig TE et al. (2006) Derivation of human embryonic stem cells in defined conditions. *Nat Biotechnol* 24(2): 185–7.
- Ludwig TE et al. (2006) Feeder-independent culture of human embryonic stem cells. *Nat Methods* 3(8): 637–46.
- Yu J et al. (2007) Induced pluripotent stem cell lines derived from human somatic cells. *Science* 318(5858): 1917–20.
- Masaki H et al. (2007) Heterogeneity of pluripotent marker gene expression in colonies generated in human iPS cell induction culture. *Stem Cell Res* 1(2): 105–15.
- Sun N et al. (2009) Feeder-free derivation of induced pluripotent stem cells from adult human adipose stem cells. *Proc Natl Acad Sci USA* 106(37): 15720–5.



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