

PRODUCT INFORMATION

iSTEM™

Catalog Number: Y40010

Size: iSTEM consists of two components which must be combined prior to use:

- 100 mL media
- 100 μ L supplement (NOTE: Supplement contains DMSO)

Larger volumes are available upon request.

Applications: Demonstrated applications of iSTEM include:

- Culture of mouse embryonic stem (ES) cells in serum-free, feeder-free conditions, in the absence of stimulatory signalling pathways
- Derivation of mouse ES cell lines from recalcitrant mouse strains

Description: iSTEM is a proprietary, defined, cell culture medium, for the derivation, maintenance and propagation of mouse (ES) cells in the 'ground state' of self-renewal¹. The medium contains three selective small molecule inhibitors that act to eliminate differentiation-inducing signals and promote cell survival, enabling the maintenance of the pluripotent, ground state without the requirement for stimulatory cytokines. This makes iSTEM the medium of choice for studying the molecular basis of pluripotency.

iSTEM can also be used to derive mouse ES lines from mouse strains refractory to ES cell derivation under standard conditions¹, and for developmental biology and embryology studies.

Mouse ES cells cultured in iSTEM show continual expansion at a doubling rate comparable to that of culture in Leukemia Inhibitory Factor (LIF) plus serum/Bone Morphogenetic Protein (BMP)¹. Culture in iSTEM also leads to cells exhibiting enhanced clonogenicity, with a higher frequency of pluripotent colonies established after single cell deposition than seen in LIF plus serum/BMP conditions.

Storage: Upon receipt, store at -20°C until ready to use. When stored under these conditions, the product is stable for 12 months from the date of manufacture (see label). Once thawed, store at 4°C and use within 2 weeks.

This product is light sensitive, and should be protected from light.

Preparation: Thaw the medium in a water bath (37°C) in the dark, and remove it from the water bath just before the medium has completely thawed (i.e., do not allow the media to warm up). Then, mix the medium gently and thaw completely. Alternatively, thaw the medium at 4°C while protecting from light. If a precipitate appears in the medium, leave it at 4°C overnight to completely dissolve the precipitate. Do not use media with visible precipitate; ensure it is dissolved before use.

Thaw the 100 μ L supplement at room temperature (for no longer than 5 minutes), and microfuge immediately. Add aseptically to warmed medium and mix to ensure the supplement is thoroughly distributed. Do not filter sterilize.

Additional Reagents Required: For mouse ES cells
Use culture vessels precoated with 0.1% gelatin type A in PBS (at room temperature for 15 minutes or more), or precoated sequentially with 0.01% poly-L-ornithine hydrobromide (at 37°C for 30 minutes or more), washing twice with PBS, followed by 10 μ g/mL laminin in PBS (at 37°C for 3 hours or more).

Quality Control: SC Proven™ media products undergo rigorous quality control procedures before release.

References: Ying QL, Wray J, Nichols J, Battle-Morera L, Doble B, Woodgett J, Cohen P, and Smith A. The ground state of embryonic stem cell self-renewal. *Nature*. (2008) **453**: 519-523.

Note

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. Takara products may not be resold or transferred, modified for resale or transfer, or used to manufacture commercial products without written approval from TAKARA BIO INC.

If you require licenses for other use, please contact us by phone at +81 77 565 6973 or from our website at www.takara-bio.com. Your use of this product is also subject to compliance with any applicable licensing requirements described on the product web page. It is your responsibility to review, understand and adhere to any restrictions imposed by such statements.

All trademarks are the property of their respective owners. Certain trademarks may not be registered in all jurisdictions.