

Product Information Sheet

Human CD34⁺ Induced Pluripotent Stem Cells (iPSCs)
Catalog Number: CR1003-500

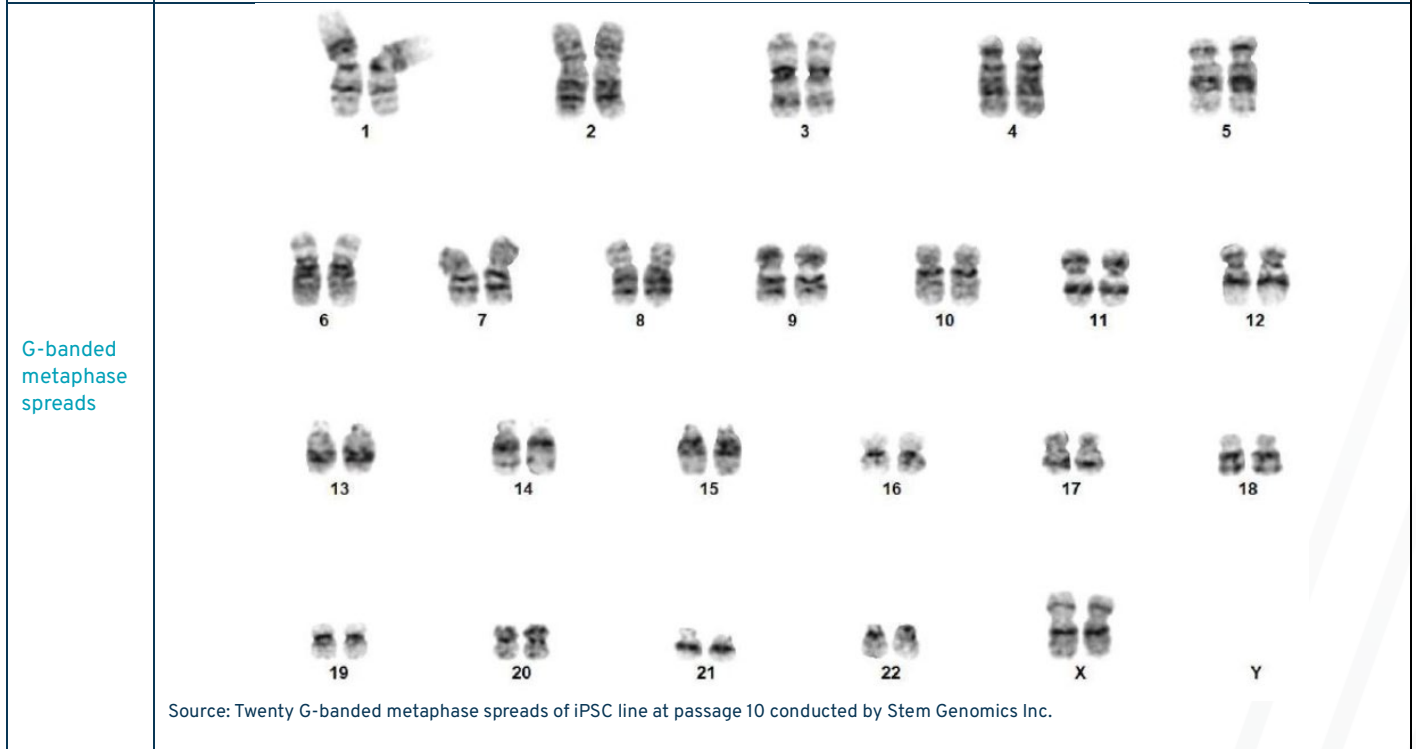
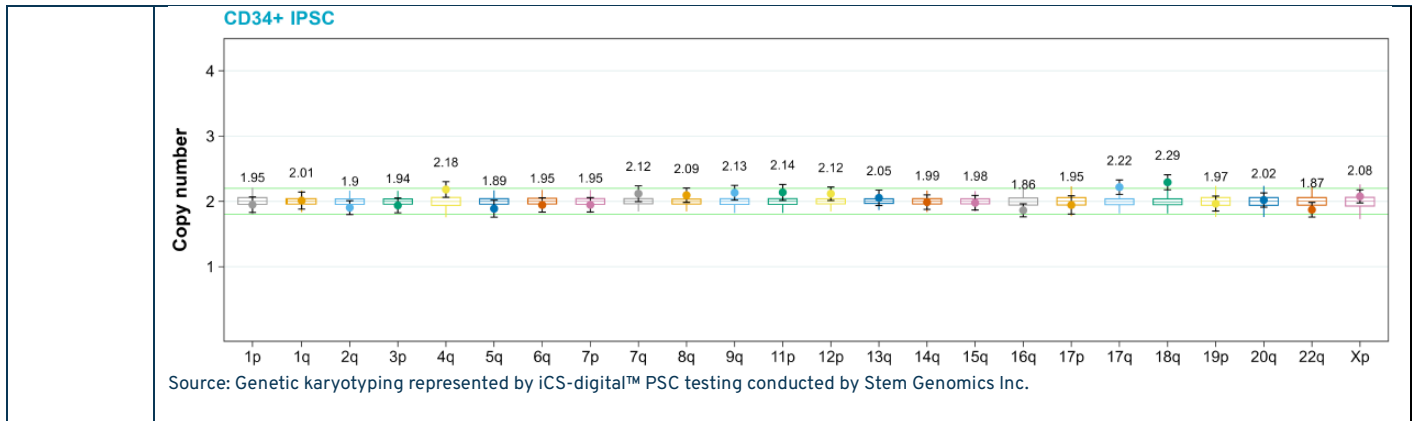
Product Overview	
Product Name	Human CD34 ⁺ Induced Pluripotent Stem Cells (iPSCs)
Catalog #s	CR1003-500
Quantity	1 vial (approx. 500,000 cells)
Product Form	Frozen
Cell Type	Human Induced Pluripotent Stem Cells
Reagents Needed	Penicillin/Streptomycin/Amphotericin B solution or Penicillin/Streptomycin solution, 100x (not included) ¹

Product Description
<p>Ethically sourced, healthy CD34⁺ hematopoietic stem cells isolated from cord blood and reprogrammed to a pluripotent state using our patented method, which utilizes non-integrating episomal DNA with our proprietary mix of transcription factors and small molecule chemistry.</p> <p>The CD34⁺ IPS cells are reprogrammed without the use of transcription factors <i>c-Myc</i> and <i>Lin28</i>, which are linked to neoplastic formation, to ensure downstream safety. Reprogrammed cells exhibit a clean genetic profile and do not accumulate deletions, insertions, or translocations as a result of the reprogramming step.</p> <p>These cells are ready-to-use and exhibit robust growth with approximately 20-hour doubling times. CD34⁺ IPS cells exhibit higher proliferative cell growth, engraftment capabilities, and pluripotency compared to IPS cells reprogrammed using other methods. This IPS cell line was validated for pluripotency based on colony morphology, positive alkaline phosphatase staining, and expression of SSEA-4. Cells are free of mycoplasma and exhibit classic iPSC colony morphology.</p> <p>The vial contains approximately 500,000 cells. Shipped with dry ice.</p> <p><small>Note: This product is designed and tested to function with Cellular Engineering Technologies Inc. ("CET") product MR1001 Human iPSC Cell Growth Media (not included). Although investigators are welcome to use this product with other media formulations, CET cannot and will not guarantee this product's performance. Additionally, such use of third-party media with this product will void CET's warranty should they not function as indicated. Please refer to CET's Terms & Conditions, available at www.celleng-tech.com.</small></p>



Cell Characteristics																																																																									
Growth Properties	Adherent																																																																								
Donor Age	Neonate																																																																								
Ethnicity	Caucasian																																																																								
Gender	Female																																																																								
Genetic Karyotyping	<table border="1"> <thead> <tr> <th colspan="22">SUMMARY OF THE DETECTED COPY NUMBER VARIATIONS</th> </tr> <tr> <th>CHROMOSOME</th> <th>1p</th> <th>1q</th> <th>2q</th> <th>3p</th> <th>4q</th> <th>5q</th> <th>6q</th> <th>7p</th> <th>7q</th> <th>8q</th> <th>9q</th> <th>11p</th> <th>12p</th> <th>13q</th> <th>14q</th> <th>15q</th> <th>16q</th> <th>17p</th> <th>17q</th> <th>18q</th> <th>19p</th> <th>20q</th> <th>22q</th> <th>Xp</th> </tr> </thead> <tbody> <tr> <td>CD34⁺ iPSC</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> <td>Green</td> </tr> </tbody> </table> <p>p-value scale: 0, 0.01, 0.05, 1, 0.05, 0.01, 0</p> <p>CNV scale: Loss (red), Trend to loss (orange), Normal (green, 1.8 - 2.2), Trend to gain (purple), Gain (dark purple)</p>	SUMMARY OF THE DETECTED COPY NUMBER VARIATIONS																						CHROMOSOME	1p	1q	2q	3p	4q	5q	6q	7p	7q	8q	9q	11p	12p	13q	14q	15q	16q	17p	17q	18q	19p	20q	22q	Xp	CD34 ⁺ iPSC	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
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Media Formulation Instructions (for MR1001-K Human iPSC Growth Media Kit <u>not</u> included)	
Defrosting / Preparation	<p>Defrost the iPSC Growth Supplement at 4°C (the day before the media is prepared) and 5mL of antibiotic/antimycotic solution (not included) in a 37°C water bath until ice in the tubes is no longer visible. Never defrost the iPSC Growth Supplement in a 37°C water bath. It is normal for the iPSC Growth Supplement to appear hazy or have suspended solutes. Gently mix by inversion.</p> <p>Immediately disinfect the tubes and the bottle containing the iPSC Base Media with 70% isopropanol (not included).</p>
Mixing	<p>Working in a laminar flow hood, remove 12mL of iPSC Base Media (not included with cells) from the bottle and discard. This and all other procedures must be done in a sterile manner.</p> <p>Add the complete contents of the iPSC Growth Supplement to the iPSC Base Media. Add 5mL of the antibiotic/antimycotic solution to the iPSC Base Media. Cap the bottle containing the mixed liquid solution and gently swirl a few times. This formulated media is now considered complete media and ready to use with cells.</p>
Feeding	<p>CET recommends that cells should be fed with fresh complete media every 24 hours, and old media should be discarded before complete media is added.</p>

Cell Thawing and Plating Instructions

Thawing	Before thawing the cells, substrate-coated dishes should be prepared accordingly. 30 minutes before thawing the iPS cells, the coating solution on the plates must be fully replaced with complete media (see Media Formulation Instructions) containing 5 µM Y-27632 (not included) and equilibrated to room temperature. Remove the Human CD34+ iPS Cells vial from dry ice or a storage unit. Defrost the vial of cells in a 37°C water bath with constant, moderate agitation until ice in the ampoule is barely visible. DO NOT OVERTHAW. Immediately disinfect with 70% isopropanol (not included).
Plating	Working in a laminar flow hood, open the vial and transfer the contents to a sterile 15 mL tube. Very slowly, add approximately 9 mL of complete media (see Media Formulation Instructions) containing 5 µM Y-27632, pre-warmed to 37°C before use. Centrifuge suspended cells at 200 x g for 10 minutes. Decant the medium and gently resuspend the pellet in 6 mL of complete media containing 5 µM Y-27632. Do this gently to avoid shearing the colonies. Gently pipette the resuspended cells onto the previously coated dishes. One vial of iPS cells contains enough colonies to seed 6 wells of a standard 6-well tissue culture plate or 3-100 mm tissue culture dishes. Distribute the colonies evenly and gently rock the plate back and forth. Place the dish in an incubator at 37°C, 5% CO ₂ , and 95% humidity. After 24 hours, aspirate media from the dish and replenish with fresh complete media (WITHOUT 5µM Y-27632), pre-warmed to 37°C before use. Repeat media changes every 24 hours.
Observation/ Expansion	The cells should attach over a period of 24 hours. It is normal for CD34+ iPS Cells to grow slowly initially for one-week post-thaw and for some colonies to be shed during media changes. Subculture cells at a 1:6 split ratio using Versene (not included).

Storage and Stability

	Storage Temperature	Storage Time
Human CD34+ iPSCs	-80°C (preferably in the vapor phase of a liquid nitrogen storage unit)	12 months
Human iPSC Base Media (not included)	4°C	3 months
complete media (see Media Formulation Instructions)	4°C	14 days
Human iPS Growth Supplement (not included)	-20°C	Not applicable (use entire contents)

Avoid repeated freeze-thaw cycles for cells. Avoid repeated exposure to room temperature and light for media.

Publications and Product Citations

[Reduction of Activin A Gives Rise to Comparable Expression of Key Definitive Endoderm and Mature Beta Cell Marker](#)

Willey, A et al. | Regenerative Medicine 2024 JAN.

¹ These solutions should be portioned in 5mL aliquots, stored at -20C and never frozen/thawed. Although antimycotics are not necessary, CET highly recommends their usage for long-term cell culture. Antibiotics and antimycotics should not be used as an alternative to proper aseptic techniques.