

Thaw and Culture Details

| Cell Line Name | WA09 |
|-------------------------------------|---|
| WiCell Lot Number | WB67615 |
| Parent Material | WA09-WB0090 |
| Provider | University of Wisconsin – Laboratory of Dr. James Thomson |
| Banked By | WiCell |
| Thaw and Culture Recommendations | WiCell recommends thawing 1 vial into 3 wells of a 6 well plate using mTeSR [™] Plus and Matrigel [®] |
| Protocol | WiCell Feeder Independent Pluripotent Stem Cell Protocol |
| Culture Platform Prior to Freeze | Feeder Independent |
| | Medium: mTeSR [™] Plus |
| | Matrix: Matrigel® |
| Passage Number | p26 These cells were cultured for 25 passages prior to freeze. WiCell adds +1 to the passage number at freeze to best represent the overall passage number of the cells at thaw. Plated cells at thaw should be labeled passage 26. |
| Date Vialed | 12-January-2021 |
| Vial Label | WA09 p26 WB67615 |
| Biosafety and Use Information | Appropriate biosafety precautions should be followed when working with these cells. The end user is responsible for ensuring that the cells are handled and stored in an appropriate manner. WiCell is not responsible for damages or injuries that may result from the use of these cells. Cells distributed by WiCell are intended for research purposes only and are not intended for use in humans. |

Testing Performed by WiCell

| Test Description | Test Provider | Test Method | Test Specification | Result | | |
|-----------------------------------|---|---|--|------------|--|--|
| | WiCell | SOP-49 | Expected karyotype | See Report | | |
| Karyotype by G-banding | Results: 46, XX Nonclonal Findings: 47,XX,+13 Interpretation: This is a normal karyotype; no clonal abnormalities were detected at the stated band level of resolution. There is a nonclonal finding, listed above. Nonclonal findings may result from technical artifact, but may be due to a developing clonal abnormality or to low level measures. | | | | | |
| Post-Thaw Viable Cell Recovery | WiCell | SOP-99 | ≥ 15 Undifferentiated Colonies prior to passage, ≤ 30% Differentiation prior to passage, and recoverable attachment after passage | Pass | | |
| Identity by STR | WiCell | PowerPlex 16 HS System by Promega | Consistent with STR profile of deposited cell line | Pass | | |
| Sterility | Steris | ST/07 | Negative | Pass | | |
| Mycoplasma | WiCell | SOP-79 | Negative | Pass | | |

©2021 WiCell Research Institute

The material provided under this certificate has been subjected to the tests specified and the results and data described herein are accurate based on WiCell's reasonable knowledge and belief. Appropriate Biosafety Level practices and universal precautions should always be used with this material. For clarity, the foregoing is governed solely by WiCell's Terms and Conditions of Service, which can be found at http://www.wicell.org/privacyandterms.



| Approval Date | Quality Assurance Approval |
|------------------|---|
| 11-February-2021 | 2/11,0021 XIG Vici Quality Assurance Signed by Gay, Jenna |

©2021 WiCell Research Institute

The material provided under this certificate has been subjected to the tests specified and the results and data described herein are accurate based on WiCell's reasonable knowledge and belief. Appropriate Biosafety Level practices and universal precautions should always be used with this material. For clarity, the foregoing is governed solely by WiCell's Terms and Conditions of Service, which can be found at http://www.wicell.org/privacyandterms.



Chromosome Analysis Report: 084477

Date Reported: Monday, January 25, 2021 Cell Line: WA09-WB67615 Submitted Passage #: 26 Date of Sample: 1/19/2021 Specimen: Human ESC Results: 46,XX Cell Line Sex: Female Reason for Testing: LOT_RELEASE

Investigator: WiCell Stem Cell Bank, WiCell

Nonclonal Findings: 47,XX,+13

| CORDINATION OF THE OWNER OWNE ОНИ ОНИ ОНИ ОНИ ОНИ ОНИ ОНИ ОНИ ОНИ ОНИ | Charlenter | | | | Children 4 | fice s |
|---|------------------|-------------|------------|----------|------------|----------|
| Sano 6 | antan " | Santa Santa | e one e | 10 | | 12 |
| 13 13 | 14 14 | 97 15 | | 16 16 | 17 17 | 18 18 |
| 8 19 | 警 員 20 | | 21 21 | 8 a | della . | TADO Y |

Cell: 54 Slide: G02 Slide Type: Karyotype Total Counted: 20 Total Analyzed: 9 Total Karyogrammed: 4 Band Resolution: 400 - 475

Interpretation:

This is a normal karyotype; no clonal abnormalities were detected at the stated band level of resolution.

There is a nonclonal finding, listed above. Nonclonal findings may result from technical artifact, but may be due to a developing clonal abnormality or to low-level mosaicism.

| Completed by: Reviewed and Interpreted by: | | , PhD, FACMG | |
|---|----------|--------------|---------------|
| Date: | Sent By: | Sent To: | QC Review By: |

Limitations: This assay allows for microscopic visualization of numerical and structural chromosome abnormalities. The size of structural abnormality that can be detected is >3-10Mb, dependent upon the G-band resolution obtained from this specimen. For the purposes of this report, band level is defined as the number of G-bands per haploid genome. It is documented here as "band level", i.e., the range of bands determined from the four karyograms in this assay. Detection of heterogeneity of clonal cell populations in this specimen (i.e.,mosaicism) is limited by the number of metaphase cells examined, documented here as "# of cells counted".

This assay was conducted solely for listed investigator/institution. The results of this assay are for research use only. Unless otherwise mutually agreed in writing, the services provided to you hereunder by WiCell Research Institute, Inc. ("WiCell") are governed solely by WiCell's Terms and Conditions of Service, found at www.wicell.org/privacyandterms. Any terms you may attach to a purchase order or other document that are inconsistent, add to, or conflict with WiCell's Terms and Conditions of Service are null and void and of no legal force or effect.



Form SOP-89.01 Version 3.0

Requestor: WiCell Stem Cell Bank, WiCell Samples Received: 11Jan21, 14Jan21, 19Jan21, 21Jan21, 25Jan21, 26Jan21 STR Amplification Date: 25Jan21, 28Jan21

| Sample Name | JHU053i- DB36209 p6 | JHU157i- DB36352 p16 | EMe-TPint5GCA5- DB67600 p40 | EMe-TPint5GCC1- DB67601 p40 | MIN28i-35833.A- WB67616 p14 | MIN29i-35833.B- WB67612 p12 | WA09-WB67614 p26 |
|-----------------------|------------------------|-------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|------------------------|
| Label on tube | 84425 | 84426 | 84447 | 84448 | 84468 | 84469 | 84476 |
| FGA | | | | | | | |
| ΤΡΟΧ | | | | | | | |
| D8S1179 | | | | Identifying | | | |
| vWA | | | | been redacted to | | | |
| Amelogenin | | | | protect donor | | | |
| Penta_D | | | | more information | | | |
| CSF1PO | | | | is required, | | | |
| D16S539 | | | | please contact | | | |
| D7S820 | | | | | | | |
| D13S317 | | | | | | | |
| D5S818 | | | | | | | |
| Penta_E | | | | | | | |
| D18S51 | | | | | | | |
| D21S11 | | | | | | | |
| TH01 | | | | | | | |
| D3S1358 | | | | | | | |
| Allelic Polymorphisms | 27 | 26 | 24 | 24 | 25 | 25 | 24 |
| Matches* | | | | | | | See Matches Comment |
| Comments | | | | | | | |

*Note: The STR profile of the following sample is an exact match for the given sample/samples.



Form SOP-89.01 Version 3.0

Requestor: WiCell Stem Cell Bank, WiCell Samples Received: 11Jan21, 14Jan21, 19Jan21, 21Jan21, 25Jan21, 26Jan21 STR Amplification Date: 25Jan21, 28Jan21

| | | MIN30i- | | | | | |
|-----------------------|------------------|-------------|------------------|---------------------------|-----------------|------------------|-----------------|
| Sample Name | WA09-WB67615 | 33109.2G- | MIN27i-35326.K- | MIN26i-35326.I- | BWHi009- | MIN25i-35613.SF- | EMe-TPint5GC42- |
| | <mark>p26</mark> | WB67613 p35 | WB67617 p10 | WB67609 p26 | WB66301 p180 | 1-WB67607 p17 | DB67599 p39 |
| Label on tube | 84477 | 84496 | 84531 | 84534 | 84550 | 84551 | 84552 |
| FGA | 26, 28 | | | | | | |
| ΤΡΟΧ | 10, 11 | | | | | | |
| D8S1179 | 8, 14 | | | | | | |
| vWA | 17, 17 | | | Identifying | has | | |
| Amelogenin | Х, Х | | | been reda | cted to | | |
| Penta_D | 9, 13 | | | protect do | nor ality_lf | | |
| CSF1PO | 11, 11 | | more information | | | | |
| D16S539 | 12, 13 | | is required, | | | | |
| D7S820 | 9, 11 | | | info@wice | ll.org | | |
| D13S317 | 9, 9 | | | | | | |
| D5S818 | 11, 12 | | | | | | |
| Penta_E | 11, 14 | | | | | | |
| D18551 | 13, 13 | | | | | | |
| D21S11 | 30, 30 | | | | | | |
| TH01 | 9.3, 9.3 | | | | | | |
| D3S1358 | 13, 16 | | | | | | |
| Allelic Polymorphisms | 24 | 26 | 29 | 34 | 28 | 26 | 24 |
| Matches* | See Matches | | | | | | |
| Wateries | Comment | | | | | | |
| | | | | ¹ See Triploid | | | |
| Comments | | | | Genotype | | | |
| | | | | Comment | | | |

*Note: The STR profile of the following sample is an exact match for the given sample/samples.



Requestor: WiCell Stem Cell Bank, WiCell Samples Received: 11Jan21, 14Jan21, 19Jan21, 21Jan21, 25Jan21, 26Jan21 STR Amplification Date: 25Jan21, 28Jan21 Form SOP-89.01 Version 3.0

| Sample Name | EMe-TPint5GC23- DB67598 p40 |
|-----------------------|--------------------------------|
| Label on tube | 84553 |
| FGA | |
| ΤΡΟΧ | |
| D8S1179 | Identifying |
| vWA | been redacted to |
| Amelogenin | protect donor |
| Penta_D | more information |
| CSF1PO | is required, |
| D16S539 | please contact |
| D7\$820 | into e wicon.org |
| D13\$317 | |
| D5\$818 | |
| Penta_E | |
| D18S51 | |
| D21S11 | |
| TH01 | |
| D3S1358 | |
| Allelic Polymorphisms | 24 |
| Matches* | |
| Comments | |

*Note: The STR profile of the following sample is an exact match for the given sample/samples.



Requestor: WiCell Stem Cell Bank, WiCell Samples Received: 11Jan21, 14Jan21, 19Jan21, 21Jan21, 25Jan21, 26Jan21 STR Amplification Date: 25Jan21, 28Jan21 Form SOP-89.01 Version 3.0

<u>Results:</u> The genotypic profiles comprise a range of 24-34 allelic polymorphisms across the 15 STR loci analyzed.

Interpretation: The concentration of DNA required to achieve an acceptable STR genotype (signal/ noise) was equivalent to that required for the standard procedure (~1 ng/amplification reaction) from human genomic DNA. These results suggests that the cells submitted correspond to the cell lines as named and were not contaminated with any other human cells or a significant amount of mouse feeder layer cells.

Sensitivity: Sensitivity limits for detection of STR polymorphisms unique to either this or other human cell lines is ~2-5%.

¹Triploid Genotype: A triploid genotype was detected at the vWA, Penta_D, D16S539, Penta_E, and D18S51 loci. This observation could be the result of chromosomal gain, loss, and/or amplification in this cell line.

Matches: Samples 84476 and 84477 are exact matches to each other and to 14630, 74319, 74844, 74924, 74925, 83593, 84032, 84034, and 84095.



Unless otherwise mutually agreed in writing, the services provided to you hereunder by WiCell Research Institute, Inc. ("WiCell") are governed solely by WiCell's Terms and Conditions of Service, found at www.wicell.org/privacyandterms. Any terms you may attach to a purchase order or other document that are inconsistent, add to, or conflict with WiCell's Terms and Conditions of Service are null and void and of no legal force or effect.

Raw data is available upon request.

Native Product Sterility Report



| | | SAMPLE #: | 21010718 |
|----------------------------|------------------------|-----------------|-----------|
| WiCell | | DATE RECEIVED: | 14-Jan-21 |
| 504 S Rosa Road, Rm 101 | | TEST INITIATED: | 20-Jan-21 |
| Madison, WI 53719 | | TEST COMPLETED: | 03-Feb-21 |
| SAMPLE NAME / DESCRIPTION: | BWHi009-WB66301 | | |
| | PENN038i-366-6-DB36313 | | |
| | JHU042i-DB41048 | | |
| | JHU133i-DB41335 | | |
| | JHU053i-DB36209 | | |
| | JHU157i-DB36352 | | |
| | JHU233i-DB37038 | | |
| | JHU214i-WB67611 | | |
| | WA09-WB67614 | | |
| | WA09-WB67615 | | |
| UNIQUE IDENTIFIER: | N/A | | |

| TEST RESULTS: | # Tested | # Positives (Growth) | - Control | | |
|---------------------|-----------|-------------------------|---------------------|---------------------------|------------------------|
| | 10 | 0 | 2 Negatives | | |
| TEST SUMMARY: | | | | Incubation Temperature | Incubation Duration |
| | # Samples | Media Type | Volume (mL) | (° C) | (Days) |
| | 10 | TSB | 40 | 20-25 | 14 |
| | 10 | FTG | 40 | 30-35 | 14 |
| REFERENCE: PD #: | | Processed accord 000053 | ding to LAB-003: St | erility Test Procedu | Ire |
| TEST METHODOLOG | àΥ: | USP - Direct Tran | isfer | | |
| COMMENTS | NA | | 11 | | |

REVIEWED BY

0

DATE OY FEB 2021

Specific test results may not be indicative of the characteristics of any other samples from the same lot or similar lots. This test report shall not be reproduced, except in full, without prior written approval. Liability is limited to the costs of the tests. Results applied to samples as received.



Mycoplasma Assay Report

PCR-based assay performed by WiCell WiCell 27Jan21

| Sample Name | Result | Interpretation |
|--|----------|---|
| WA09-WB67614 p26 (84476) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| WA09-WB67615 p26 (84477) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| MIN30i-33109.2G-WB67613 p35 (84496) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| MIN32i-33109.2B.3A12-DB67579 (84497) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| MIN33i-33109.2G.1A4-DB67580 (84498) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| MIN34i-33109.2G.2F2-DB67581 (84499) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| INC169 21Jan21MMM 1 of 2 (84500) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| INC169 21Jan21MMM 2 of 2 (84501) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| INC123 21Jan21KR 1 of 2 (84502) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| INC123 21Jan21KR 2 of 2 (84503) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| MIN27i-35326.K-WB67617 p10 (84531) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| MIN26i-35326.I-WB67609 p26 (84534) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| MIN31i-33363.D.3C2-DB67578 p22 (84540) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| EMe-TPint5GC42-DB67599 p39 (84541) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| EMe-TPint5GC23-DB67598 p40 (84542) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| GCT27C4-DB67566 p6 (84543) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| GCT27DC1-DB67567 p8 (84544) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| Positive (+) Control | Positive | |
| Negative (-) Control | Negative | |

Reported by: Assistant Cell Culture Specialist Reviewed by: Senior Cell Culture Specialist

Unless otherwise mutually agreed in writing, the services provided to you hereunder by WiCell Research Institute, Inc. ("WiCell") are governed solely by WiCell's Terms and Conditions of Service, found at www.wicell.org/privacyandterms. Any terms you may attach to a purchase order or other document that are inconsistent, add to, or conflict with WiCell's Terms and Conditions of Service are null and void and of no legal force or effect.

A gel image is available upon request.