




Certificate of Analysis

Thaw and Culture Details

| | | |
|----------------------------------|--|-------------------|
| Cell Line Name | WA01 | |
| WiCell Lot Number | WB69058 | |
| Provider/Client | 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™ 1 and Matrigel®. | |
| Protocol | WiCell Feeder Independent Pluripotent Stem Cell Protocol | |
| Culture Platform Prior to Freeze | Medium: mTeSR™ 1 | Matrix: Matrigel® |
| Passage Number | p22 Cells were cultured for 21 passages prior to freeze. Plated cells at thaw should be labeled passage 22. | |
| Date Vialied | 09-August-2025 | |
| Vial Label | WA01 p22 WB69058 Store at -135C or colder Made in United States Research Use Only  | |
| 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. | |



Certificate of Analysis

Results

| Test Description | Test Provider | Test Method | Test Specification | Result |
|--------------------------------|---|--|---|------------|
| Karyotype | WiCell | G-T-L Banding performed on 20 metaphase cells | Expected karyotype | See Report |
| | Results: 46,XY Interpretation: This is a normal karyotype; no clonal abnormalities were detected at the stated band level of resolution. | | | |
| Post-Thaw Viable Cell Recovery | WiCell | Thaw using specified Thaw & Culture Recommendations | ≥ 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 donor material | See Report |
| Mycoplasma | WiCell | PCR | Amplification of mycoplasma specific DNA detected with negative result | Pass |
| Sterility | Steris | Native Product Direct Transfer using FTM and TSB (ST/07) | Negative for growth following 14 days of culture | Pass |

| Approval Date | WiCell Quality Assurance Approval |
|------------------|--|
| 25-February-2026 | <p style="text-align: right;">2/25/2026</p> <p>X HEB HEB WiCell Quality Assurance Signed by: Bruner, Haley</p> |

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>.

Date Reported: September 19, 2025

Cell Line Sex: Male

Cell Line: WA01-WB69058

Reason for Testing: LOT_RELEASE

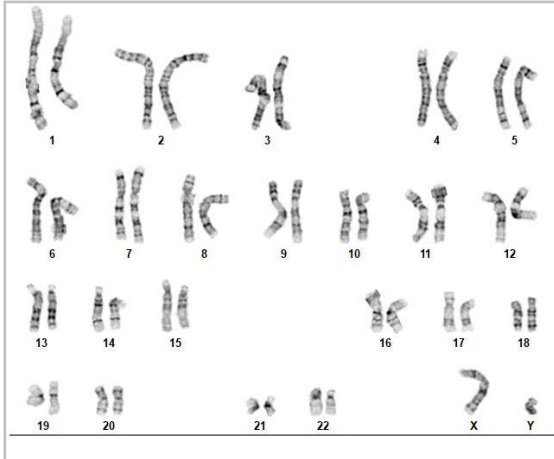
Submitted Passage #: 22

Date of Sample: 9/16/2025

Investigator: WiCell Stem Cell Bank, WiCell

Specimen: Human ESC

Results: 46,XY



Cell: 2

Slide: G01

Slide Type: Karyotype

Total Counted: 20

Total Analyzed: 8

Total Karyogrammed: 4

Band Resolution: 425 - 475

Interpretation:

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

This report has been revised to update the cell line sex from unknown at the request of the client 19Sep25.

Completed by: *Korrine Thornell, CG(ASCP)*

Reviewed and Interpreted by: *Xiangqiang Shao, PhD, FACMG*

For internal use only

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.



Short Tandem Repeat

Form SOP-89.01

Version 15.0

Requestor: WiCell Stem Cell Bank, WiCell
 Sample Receipt Date: 18Sep25, 17Sep25, 16Sep25
 STR Amplification Date: 23Sep25

| Sample Name | WA01-WB69061 p23 | PENN167i-M5-3-DB34994 p27 | CVCL_C7UV-WB69028 p52 | WA01-WB69058 p22 | WA01-WB69060 p23 | WA14-WB69050 p20 |
|-----------------------------|--|---------------------------|-----------------------|------------------|--|---------------------|
| WiCell CTR No. ¹ | 109171 | 109159 | 109158 | 109118 | 109117 | 109116 |
| FGA | Identifying information has been redacted to protect donor confidentiality. If more information is required, please contact info@wicell.org | | | 20, 24 | Identifying information has been redacted to protect donor confidentiality. If more information is required, please contact info@wicell.org | |
| TPOX | | | | 8, 11 | | |
| D8S1179 | | | | 12, 13 | | |
| vWA | | | | 15, 17 | | |
| Amelogenin | | | | X, Y | | |
| Penta_D | | | | 10, 13 | | |
| CSF1PO | | | | 12, 13 | | |
| D16S539 | | | | 9, 13 | | |
| D7S820 | | | | 8, 12 | | |
| D13S317 | | | | 8, 11 | | |
| D5S818 | | | | 9, 11 | | |
| Penta_E | | | | 10, 12 | | |
| D18S51 | | | | 17, 18 | | |
| D21S11 | | | | 28, 32.2 | | |
| TH01 | | | | 9.3, 9.3 | | |
| D3S1358 | 15, 15 | | | | | |
| Allelic Polymorphisms | 28 | 23 | 28 | 28 | 28 | 27 |
| Matches ² | See Results | | See Results | See Results | See Results | 36299, 33113, 20303 |
| Comments | | | | | | |

¹ CTR No.: Characterization Test Request Number; also known as a laboratory accessioning number.

² The STR profile of the sample(s) listed are a 100% match for the given sample unless otherwise specified.



Short Tandem Repeat

Form SOP-89.01

Version 15.0

Requestor: WiCell Stem Cell Bank, WiCell
Sample Receipt Date: 18Sep25, 17Sep25, 16Sep25
STR Amplification Date: 23Sep25

| | |
|-----------------------------------|--|
| Sample Name | WC-24-02-DS-P-WB69081 p17 |
| WiCell CTR No.¹ | 109115 |
| FGA | Identifying information has been redacted to protect donor confidentiality. If more information is required, please contact info@wicell.org |
| TPOX | |
| D8S1179 | |
| vWA | |
| Amelogenin | |
| Penta_D | |
| CSF1PO | |
| D16S539 | |
| D7S820 | |
| D13S317 | |
| D5S818 | |
| Penta_E | |
| D18S51 | |
| D21S11 | |
| TH01 | |
| D3S1358 | |
| Allelic Polymorphisms | 28 |
| Matches² | See Results |
| Comments | |

¹ CTR No.: Characterization Test Request Number; also known as a laboratory accessioning number.

² The STR profile of the sample(s) listed are a 100% match for the given sample unless otherwise specified.



Short Tandem Repeat

Requestor: WiCell Stem Cell Bank, WiCell
Sample Receipt Date: 18Sep25, 17Sep25, 16Sep25
STR Amplification Date: 23Sep25

Assay Description: Short Tandem Repeat (STR) analysis is performed using the PowerPlex® 16 HS System by Promega™. Results are reported as 13 CODIS STR markers, Amelogenin for sex determination and two low-stutter, highly discriminating pentanucleotide STR markers.

Results: The genotypic profiles comprise a range of 23-28 allelic polymorphisms across the 15 STR loci analyzed. Samples 109171, 109118, and 109117 are a 100% match to each other and to 105103, 105671, 105203, 104962, 104606, 104361, 103887, 103763, 96463, 101599, and additional profiles. Sample 109158 is a 100% match to 108776, 108996, 108953, 108863, 108780, 108864, 108982, 108861, 108862, 108816, and additional profiles. Sample 109115 is a 100% match to 103592, 102657, 102115, 101953, 101596, 92525, and additional profiles. Sample 109115 is also a 93.33% match to 103288, 103130, 95322, 18976, and additional profiles. Additional matches can be provided upon request.

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 suggest 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 ~2-4%.

| | | |
|--|---|---|
| 9/25/2025 | 9/25/2025 | 9/26/2025 |
| X Steph Dos Santos | X Anna Lisa Larson | X Dawn Graham |
| Tech #1 Characterization Signed by: Dos Santos, Stephany | Tech #2 Characterization Signed by: Larson, Anna Lisa | QA Review Quality Assurance Signed by: Graham, Dawn |

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Mycoplasma Assay Report

PCR-based assay performed by WiCell
 WiCell Stem Cell Bank, WiCell
 23Sep25

Form SOP-83.01
 Version 7.0

| Sample Name | Result | Interpretation |
|------------------------------------|----------|---|
| WA01-WB69061 p23 (109171) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| PENN167i-M5-3-DB34994 p27 (109159) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| CVCL_C7UV-WB69028 p52 (109158) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| CVCL_C7VD-WB69009 p39 (109139) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| WA01-WB69058 p22 (109118) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| WA01-WB69060 p23 (109117) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| WA14-WB69050 p20 (109116) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| WC-24-02-DS-P-WB69081 p17 (109115) | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| Positive (+) Control | Positive | |
| Negative (-) Control | Negative | |

| Assay Description |
|---|
| Sample is tested for presence of mycoplasma using EZ-PCR™ Mycoplasma Detection Kit (Sartorius). |

| | | |
|--|---|---|
| 9/23/2025 | 9/24/2025 | 9/24/2025 |
| X Dylan Peters <hr/> Tech #1 Characterization Signed by: Peters, Dylan | X Steph Dos Santos <hr/> Tech #2 Characterization Signed by: Dos Santos, Stephany | X Dawn Graham <hr/> QA Review Quality Assurance Signed by: Graham, Dawn |

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A gel image is available upon request.

Native Product Sterility Report



WiCell Research Institute
504 S Rosa Road, Rm 101
Madison, WI 53719

SAMPLE #: 25090688
DATE RECEIVED: 18-Sep-25
TEST INITIATED: 19-Sep-25
TEST COMPLETED: 03-Oct-25

SAMPLE NAME / DESCRIPTION: WA01-WB69058
WA01-WB69060
WA01-WB69061
CVCL_C7V9-WB69059
EIFIIIi001-A-WB69083
EIFIIIi002-A-WB69082
WC-24-02-DS-P-WB69081
STAN224i-514C3-WB69036
STAN336i-963C1-WB69031
STAN225i-514C4-WB69029
STAN337i-963C3-WB69030

UNIQUE IDENTIFIER: N/A

TEST RESULTS:

| # Tested | # Positives (Growth) | - Control |
|----------|----------------------|-------------|
| 11 | 0 | 2 Negatives |

TEST SUMMARY:

| # Samples | Media Type | Volume (mL) | Incubation Temperature (° C) | Incubation Duration (Days) |
|-----------|------------|-------------|------------------------------|----------------------------|
| 11 | TSB | 40 | 20-25 | 14 |
| 11 | FTG | 40 | 30-35 | 14 |

REFERENCE: Processed according to LAB-003: Sterility Test Procedure
PD #: 000053
TEST METHODOLOGY: USP - Direct Transfer

COMMENTS: NA

AUTHORIZED BY 

DATE 06 OCT 2025

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.