

Thaw and Culture Details

| Cell Line Name | MCW060i-U2183 | | | | | | |
|-------------------------------------|---|--|--|--|--|--|--|
| WiCell Lot Number | WB66559 | | | | | | |
| Provider | Medical College of Wisconsin – Laboratory of Dr. Ulrich Broeckel | | | | | | |
| Banked By | WiCell | | | | | | |
| Thaw and Culture Recommendations | WiCell recommends thawing 1 vial into 3 wells of a 6 well plate. | | | | | | |
| Culture Platform | Feeder Independent | | | | | | |
| | Medium: TeSR [™] -E8 [™] | | | | | | |
| | Matrix: Matrigel® | | | | | | |
| Protocol | WiCell Feeder Independent E8 Medium Protocol | | | | | | |
| Passage Number | p16 These cells were cultured for 15 passages prior to freeze and post colony picking. WiCell adds +1 to the passage number at freeze to best represent what the overall passage number of the cells at thaw. Plated cells at thaw should be labeled passage 16. | | | | | | |
| Date Vialed | 29-August-2017 | | | | | | |
| Vial Label | MCW060i-U2183 p16 WB66559 | | | | | | |
| 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 | | | | | |
|-----------------------------------|---|---|---|------------|--|--|--|--|--|
| Karyotype by G-banding | WiCell | SOP-CH-003 | Expected karyotype | See Report | | | | | |
| Post-Thaw Viable Cell Recovery | WiCell | SOP-CH-305 | ≥ 15 Undifferentiated Colonies, ≤ 30% Differentiation and recoverable attachment after passage | Pass | | | | | |
| Identity by STR | UW Translational Research Initiatives in Pathology Laboratory | PowerPlex 16 HS System by Promega | Defines profile | Pass | | | | | |
| Sterility | Steris | ST/07 | Negative | Pass | | | | | |
| Mycoplasma | Mycoplasma WiCell | | Negative | Pass | | | | | |

Testing Reported by Provider

The Provider stated that some or all of the additional analyses listed below may have been performed for this cell line. For more information, publication and dbGaP links, where available, are provided on the cell line specific web page on the WiCell website.

- Tra1-60 marker expression
- mRNA expression by qPCR
- Infinium[®] Expanded Multi-Ethnic Genotyping Array (MEGA^{EX})

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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 | | | |
|---------------|---|--|--|--|
| 14-March-2018 | 10/11/2018 XIG Quality Assurance Signed by: Gay, Jenna | | | |

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Date Reported: Wednesday, September 19, 2018 **Cell Line Sex:** Female Cell Line: MCW060i-U2183-WB66559-13775 Reason for Testing: lot release testing Passage#: 16 Date of Sample: 9/11/2018 Investigator: , WiCell Specimen: Human IPS Results: 46,XX CILLADO STATE: -COMPLEX **Cell: 26** Slide: G03 CONTRACTOR OF THE OWNER Ś Slide Type: Karyotype Here was 11 12 6 Total Counted: 20 COM Å 四日日 Ha Ha Total Analyzed: 8 Total Karyogrammed: 4 CHICK ST Band Resolution: 400 - 475 湯泉 88 **静** 88 19 20

Interpretation:

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

| Completed by: Reviewed and Interpreted by: | · | G(ASCP) D, 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.



HISTOLOGY - IHC - MOLECULAR - IMAGING

Department of Pathology and Laboratory Medicine TRIP Laboratory (Molecular) http://www.pathology.wisc.edu/research/trip

Sample Report: 13775-STR Sample Name on Tube: 13775-STR 139.8 ng/µL, (A260/280=1.87) Sample Type: Cells Cell Count: ~2 million cells **Requestor:** WiCell Research Institute Quality Department WiCell[®] info@wicell.org (888) 204-1782

Sample Date: N/A Receive Date: 09/17/18 Assay Date: 09/25/18 File Name: STR 180926 wmr Report Date: 09/28/18

| STR Locus | STR Genotype Repeat # | STR Genotype |
|-------------|---|---------------------------------------|
| FGA | 16–18,18.2,19,19.2,20,20.2,21,21.2,22, 22.2, 23, 23.2, 24, 24.2, 25, 25.2, 26–30, 31.2, 43.2, 44.2,45.2, 46.2 | Identifying information has |
| TPOX | 6-13 | been redacted to |
| D8S1179 | 7-18 | protect donor |
| vWA | 10-22 | confidentiality. If |
| Amelogenin | X,Y | more information |
| Penta D | 2.2, 3.2, 5, 7-17 | is required, |
| CSF1PO | 6-15 | please, contact WiCell's Technical |
| D16S539 | 5, 8-15 | Support. |
| D7S820 | 6-14 | |
| D13S317 | 7-15 | |
| D5S818 | 7-16 | |
| Penta E | 5-24 | |
| D18S51 | 8-10, 10.2, 11-13, 13.2, 14-27 | |
| D21S11 | 24,24.2,25,25.2,26-28,28.2,29,29.2, 30, 30.2,31, 31.2,32,32.2,33,33.2, 34,34.2,35,35.2,36-38 | |
| TH01 | 4-9,9.3,10-11,13.3 | |
| D3S1358 | 12-20 | |

<u>Results:</u> Based on the 13775-STR cells submitted by WiCell QA dated and received on 09/17/18, this sample (Label on Tube: 13775-STR) defines the STR profile of the human stem cell line MCW060i-U2183 comprising 26 allelic polymorphisms across the 15 STR loci analyzed.

<u>Interpretation:</u> No STR polymorphisms other than those corresponding to the human MCW060i-U2183 stem cell line were detected and 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. This result suggests that the 13775-STR sample submitted corresponds to the MCW060i-U2183 stem cell line and was not contaminated with any other human stem cells or a significant amount of mouse feeder layer cells.

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

| X RMB Digitally Signed on 09/28/18 | X WMR Digitally Signed on 09/28/18 |
|------------------------------------|---|
| , BA | PhD, Director / Co-Director |
| TRIP Laboratory Molecular | UWHC Molecular Diagnostics Laboratory / UWSMPH TRIP Laborat |

Testing was accomplished by analysis of human genetic polymorphisms at STR loci. This methodology has not yet been approved by the FDA and is for investigational use only. Acknowledge TRIP in your publications, posters & presentations. For details, see: http://www.pathology.wisc.edu/research/trip/acknowledging TRIP agrees to maintain the confidentiality of any information provided to it in connection with its performance of this STR analysis on the same conditions as set forth in paragraph 2 of WiCell's Terms and Conditions of Service (http://www.wicell.org/media.acux/1a429b84-2b54-44a4-8ad8-5c05db93dd8a).



Analysis

Native Product Sterility Report



| WiCell 504 S Rosa Rd, Rm 101 Madison, WI 53719 | CORRECTED REPORT | SAMPLE #: DATE RECEIVED: TEST INITIATED: TEST COMPLETED: | 17090875 14-Sep-17 18-Sep-17 02-Oct-17 |
|--|---|---|--|
| SAMPLE NAME / DESCRIPTION: | MCW071i-U2177-WB66552_ MCW090i-40000374-WB6655 MCW097i-400001654-WB665 WB66551_12842, MCW116i- WB66570_12844, MCW060i- JFHZ5-WB66587_12847, JFHZ JFNY2-WB66584_12850, JFRE JFWT4-WB66582_12853, UCS U2341-WB66575_12881, MC WB66588_12883, UCSD035i- WB63303_12885, UCSD143i- | 53_12835, MCW047i-U2234-WB6654 12837, MCW086i-40000176-WB6654 57_12839, MCW091i-U2202-WB6655 548_12841, MCW112i-40000893- 40001890-WB66550_12843, MCW07 U2183-WB66559_12845, JFHZ4-WB6 26-WB66583_12848, JFMD6-WB6658 515-WB66569_12851, JFWT2-WB6658 515-WB66569_12851, JFWT2-WB6658 50239i-APP2-1-WB66585_12854, MC W114i-U2144-WB66566_12882, iPS(4-4-WB62259_12884, UCSD064i-20-2 87-1-WB57685_12886, UCSD161i-93- 107-1-WB59910_12888, UCSD209i-24 1-14-WB61903_12890 | 5_12838, 4_12840, 3i-40000527- 6573_12846, 1_12849, 36_12852, W100i- IMR90)-2- 2- -1- |
| PRODUCT RECISTRATION | Others Human iPS Calls | | |

U PRODUCT REGISTRATION:

Other: Human iPS Cells

Positives

TEST RESULTS:

| | # Tested | (Growth) | - Control | | |
|---|-----------|---|-------------|------------------------------------|----------------------------------|
| | 30 | 0 | 2 Negatives | | |
| TEST SUMMARY: | # Samples | Media Type | Volume (mL) | Incubation Temperature (° C) | Incubation Duration (Days) |
| | 30 | TSB | 40 | 20-25 | 14 |
| | 30 | FTG | 40 | 30-35 | 14 |
| REFERENCE: METHOD VALIDATIO TEST METHODOLOG | | Processed accord 000053 USP - Direct Tran | - | terility Test Procedu | ire |

Native Product Sterility Report



COMMENTS:

Sample # 17090875 Report revised due to Customer request to update Sample Name / Description.

REVIEWED BY

DATE

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.



Mycoplasma Detection Assay Report Testing Performed by WiCell

Testing Performed by WiCell Lot Release Testing September 14, 2018 FORM SOP-QU-004.01 Version G Edition 02 Reported by: AP Reviewed by: DF BD Monolight 180

| | | Read | ing A | Α | Read | ling B | В | Ratio | | |
|---|-----------------------------|------|-------|-------|-------|--------|-------|--------|----------|-----------------------------|
| # | Sample Name | RLU1 | RLU2 | Ave | RLU1 | RLU2 | Ave | B/A | Result | Comments/Suggestions |
| 1 | MCW060i-U2183-WB66559 13775 | 262 | 265 | 263.5 | 99 | 98 | 98.5 | 0.37 | Negative | |
| 2 | Positive (+) Control | 364 | 362 | 363 | 54874 | 55120 | 54997 | 151.51 | Positive | |
| 3 | Negative (-) Control | 831 | 858 | 844.5 | 107 | 92 | 99.5 | 0.12 | Negative | |

