



Thaw and Culture Details

| | |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cell Line Name | MCW053i-U2213 |
| WiCell Lot Number | WB67054 |
| Provider | Medical College of Wisconsin – Laboratory of Dr. Ulrich Broeckel |
| Banked By | WiCell |
| Thaw and Culture Recommendations | WiCell recommends thawing 1 vial into 2 wells of a 6 well plate. |
| Culture Platform | Feeder Independent |
| | Medium: TeSR™-E8™ |
| | Matrix: Matrigel® |
| Protocol | WiCell Feeder Independent E8 Medium Protocol |
| Passage Number | p15 These cells were cultured for 14 passages prior to freeze and post colony selection. 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 15. |
| Date Vialied | 12-March-2019 |
| Vial Label | MCW053i-U2213 p15 WB67054 |
| 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 |
| | <p>Results: 46,XY,add(17)(p13)[5]/46,XY[15] Interpretation: This is an abnormal karyotype. Five of twenty cells examined contain an unbalanced structural aberration in the short (p) arm of chromosome 17. This abnormality, in which additional material of unknown origin translocated to chromosome 17p, cannot be characterized by G-banded chromosome analysis. Additional testing, e.g., chromosomal microarray or spectral karyotyping (SKY), may be helpful in characterization of this specimen. No other clonal abnormalities were detected at the stated band level of resolution.</p> | | | |
| Post-Thaw Viable Cell Recovery | WiCell | SOP-CH-305 | ≥ 15 Undifferentiated Colonies prior to passage, ≤ 30% Differentiation prior to passage, and recoverable attachment after passage | Pass |
| Identity by STR | UW Translational Research Initiatives in Pathology Laboratory | PowerPlex 16 HS System by Promega | Defines STR profile of deposited cell line | Pass |
| Sterility | Steris | ST/07 | Negative | Pass |
| Mycoplasma | WiCell | SOP-CH-044 | Negative | Pass |



Testing Reported by Provider

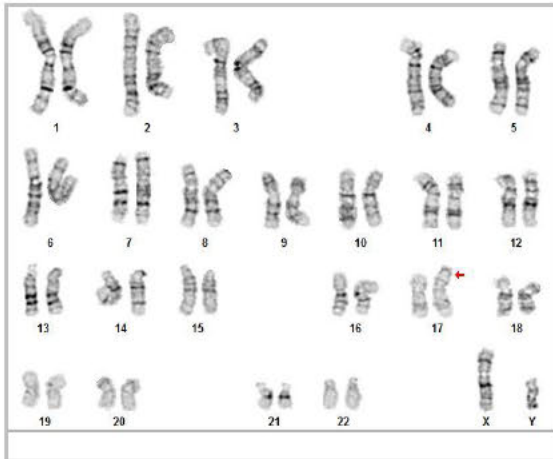
The Provider stated that some or all of the additional analyses listed below may have been performed for this cell line. For more information, publication and dbGaP links, where available, are provided on the cell line specific web page on the WiCell website.

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

| Approval Date | Quality Assurance Approval |
|---------------|------------------------------------------------------------------------------------------------------------------------|
| 12-May-2018 | <p style="text-align: right;">5/21/2020</p> <p>X JKG _____ JKG Quality Assurance Signed by: Gay, Jenna</p> |

Date Reported: Monday, March 25, 2019
Cell Line: MCW053i-U2213-WB67054 14436
Passage#: 15
Date of Sample: 3/20/2019
Specimen: Human IPS
Results: 46,XY,add(17)(p13)[5]/46,XY[15]

Cell Line Sex: Male
Reason for Testing: lot release testing
Investigator: [REDACTED] WiCell



Cell: 2
Slide: G02
Slide Type: Karyotype

Total Counted: 20
Total Analyzed: 10
Total Karyogrammed: 7
Band Resolution: 375 - 425

Interpretation:

This is an abnormal karyotype. Five of twenty cells examined contain an unbalanced structural aberration in the short (p) arm of chromosome 17. This abnormality, in which additional material of unknown origin translocated to chromosome 17p, cannot be characterized by G-banded chromosome analysis. Additional testing, e.g., chromosomal microarray or spectral karyotyping (SKY), may be helpful in characterization of this specimen. No other clonal abnormalities were detected at the stated band level of resolution.

Completed by: [REDACTED], CG(ASCP)

Reviewed and Interpreted by: [REDACTED], 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.



HISTOLOGY - IHC - MOLECULAR - IMAGING

Department of Pathology and Laboratory Medicine
TRIP Laboratory (Molecular)
<https://research.pathology.wisc.edu/trip/>
(608) 265-9168

Short Tandem Repeat Analysis



Your Lab Partner

characterization@wicell.org
(608) 316-4145

Sample Report:

14436-STR

Sample Name on Tube: 14436-STR

69.2 ng/ μ L, (A260/280=1.86)

Sample Type: Cells

Cell Count: ~2 million cells

Requestor:

WiCell Research Institute

Quality Assurance Department

Receive Date: 03/25/19

Report Sent: 04/01/19

Assay Date: 03/28/19

File Name: STR 190329 wmr

Report Date: 03/29/19

| 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 been redacted to protect donor confidentiality. If more information is required, please, contact WiCell's Technical Support . |
| TPOX | 6-13 | |
| D8S1179 | 7-18 | |
| vWA | 10-22 | |
| Amelogenin | X,Y | |
| Penta D | 2.2, 3.2, 5, 7-17 | |
| CSF1PO | 6-15 | |
| D16S539 | 5, 8-15 | |
| 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 | |

Results: Based on the 14436-STR cells submitted by WiCell QA dated and received on 03/25/19, this sample (Label on Tube: 14436-STR) defines the STR profile of the human stem cell line MCW053i-U2213 comprising 26 allelic polymorphisms across the 15 STR loci analyzed.

Interpretation: No STR polymorphisms other than those corresponding to the human MCW053i-U2213 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 14436-STR sample submitted corresponds to the MCW053i-U2213 stem cell line and was not contaminated with any other human stem 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 stem cell lines is ~2-5%.

X *RMB*

Digitally Signed on 04/01/19

X *WMR*

Digitally Signed on 04/01/19

██████████, BA
TRIP Laboratory, Molecular

██████████ PhD, Director / Co-Director
UWHC Molecular Diagnostics Laboratory / UWSMPH TRIP Laboratory

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>

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Native Product Sterility Report



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

SAMPLE #: 19032457
DATE RECEIVED: 28-Mar-19
TEST INITIATED: 01-Apr-19
TEST COMPLETED: 15-Apr-19

SAMPLE NAME / DESCRIPTION: WA07 WB67046 14469
MCW012i-A7156 WB67051 14470
MCW014i-50000395 WB67052 14471
MCW032i-A7214 WB67053 14472
MCW053i-U2213 WB67054 14473
MCW043i-U2326 WB67056 14474
MCW045i-U2033 WB67057 14475
WC042e-H1dCGG0-B7 WB67063 14476
WC043e-H13dCGG0-23 WB67069 14477
WC044i-IVF15-36 WB67062 14478

UNIQUE IDENTIFIER: NA

TEST RESULTS:

| # Tested | # Positives (Growth) | - Control |
|----------|----------------------|-------------|
| 10 | 1 | 2 Negatives |

TEST SUMMARY:

| # Samples | Media Type | Volume (mL) | Incubation Temperature (° C) | Incubation Duration (Days) |
|-----------|------------|-------------|------------------------------|----------------------------|
| 10 | TSB | 40 | 20-25 | 14 |
| 10 | TSB | 40 | 30-35 | 14 |

REFERENCE: Processed according to LAB-003: Sterility Test Procedure

PD #: 000053

TEST METHODOLOGY: USP - Direct Transfer

COMMENTS: Sample labeled as WC044i-IVF15-36 WB67062 14478 was positive

REVIEWED BY 

DATE 16 Apr 19

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

Lot Release Testing

25Mar19

FORM SOP-CH-044.03

Version B Edition 01

| # | Sample Name | Result | Comments/Suggestions |
|---|-----------------------------|----------|-------------------------------------------------------------------|
| 1 | MCW053i-U2213-WB67054 14436 | Negative | Band was not seen at 270bp, indicating the absence of mycoplasma. |
| 2 | Positive (+) Control | Positive | |
| 3 | Negative (-) Control | Negative | |

Reported by: [REDACTED], Cell Culture Specialist

Reviewed by: [REDACTED], Cell Culture Specialist

Date: _____ Sent By: _____ Sent To: _____

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A gel image is available upon request.