

Thaw and Culture Details

| Cell Line Name | UCSD202i-108-1 | | | | | |
|-------------------------------------|---|--|--|--|--|--|
| WiCell Lot Number | WB57850 | | | | | |
| Provider | University of California, San Diego – Dr. Kelly Frazer | | | | | |
| Banked By | WiCell | | | | | |
| Thaw and Culture Recommendations | WiCell recommends thawing 1 vial into 4 wells of a 6 well plate. | | | | | |
| Culture Platform | Feeder Independent | | | | | |
| | Medium: mTeSR™1 | | | | | |
| | Matrix: Matrigel® | | | | | |
| Protocol | WiCell Feeder Independent mTeSR [™] 1 Protocol | | | | | |
| Passage Number | p18 These cells were cultured for 17 passages prior to freeze and post reprogramming. WiCell adds +1 to the passage number to best represent the overall passage number of the cells at thaw. | | | | | |
| Date Vialed | 20-January-2017 | | | | | |
| Vial Label | UCSD202i-108-1 p18 WB57850 | | | | | |
| 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 | WiCell | SOP-QU-004 | 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.

- Illumina® HumanCoreExome BeadChip Array
- RNA-Seq
- Flow Cytometry (SSEA-4, Tra 1-81)
 Infinium[®] Expanded Multi-Ethnic Genotyping Array (MEGA^{EX})

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| Approval Date | Quality Assurance Approval | | | |
|------------------|---|--|--|--|
| 07-February-2017 | 2/25/0018 XIG Quality Assurance Signed by Gay, Jenna | | | |

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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.

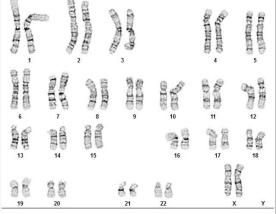


 Date Reported: Monday, February 12, 2018
 Cell Line Gender: Female

 Cell Line: UCSD202i-108-1-WB57850 13368
 Reason for Testing: lot release testing

 Passage#: 18
 Date of Sample: 2/5/2018
 Investigator:

 Specimen: Human IPSC
 Results: 46,XX



Investigator: WiCell CDM Cell: 7 Slide: G02 Slide Type: Karyotype Total Counted: 20 Total Analyzed: 8

Total Karyogrammed: 4 Band Resolution: 475 - 525

Interpretation:

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

A signed copy of this report is available upon request.

| 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 may not be relied upon by any other party without the prior written consent of the Director of the WiCell Cytogenetics Laboratory. The results of this assay are for research use only. If the results of this assay are to be used for any other purpose, contact the Director of the WiCell Cytogenetics Laboratory.

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HISTOLOGY - IHC - MOLECULAR - IMAGING

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

Sample Report: 13368-STR Sample Name on Tube: 13368-STR 25.3 ng/µL, (A260/280=6.03) Sample Type: Cells Cell Count: ~2 million cells **Requestor:** WiCell Research Institute Quality Department

Short Tandem Repeat

Analysis

WiCell[®] info@wicell.org (888) 204-1782

Sample Date: N/A Receive Date: 02/12/18 Assay Date: 02/13/18 File Name: STR 180214 wmr Report Date: 02/16/18

| 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 |
| ТРОХ | 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 13368-STR cells submitted by WiCell QA dated and received on 02/12/18, this sample (Label on Tube: 13368-STR) defines the STR profile of the human stem cell line UCSD202i-108-1 comprising 27 allelic polymorphisms across the 15 STR loci analyzed.

<u>Interpretation:</u> No STR polymorphisms other than those corresponding to the human UCSD202i-108-1 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 13368-STR sample submitted corresponds to the UCSD202i-108-1 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 02/16/18 | X WMR | Digitally Signed on | 02/16/18 |
|------------------------------------|------------------|-------------------------|----------|
| , BA TRIP Laboratory Molecular | UWHC Molecular I | PhD, Director / Co-Dire | |

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).

Native Product Sterility Report



WiCell

504 S Rosa Rd, Rm 101 Madison, WI 53719

SAMPLE NAME / DESCRIPTION:



 SAMPLE #:
 18020925

 DATE RECEIVED:
 15-Feb-18

 TEST INITIATED:
 20-Feb-18

 TEST COMPLETED:
 06-Mar-18

UCSD084i-6-1 WB61879 13391, UCSD089i-15-1 WB61822 13392 UCSD131i-77-1 WB62260 13393, UCSD134i-80-1 WB62286 13394 UCSD145i-89-1 WB61873 13395, UCSD156i-12-2 WB61889 13396 UCSD171i-100-1 WB62271 13397, UCSD174i-18-2 WB62018 13398 UCSD183i-102-1 WB62287 13399, UCSD186i-103-1 WB62268 13400 UCSD211i-32-1 WB62424 13401, UCSD087i-6-4 WB63448 13402 UCSD090i-15-2 WB62824 13403, UCSD120i-39-1 WB63446 13404 UCSD124i-7-1 WB62648 13405, UCSD149i-10-4 WB63469 13406 UCSD169i-22-2 WB63540 13407, UCSD203i-109-1 WB62436 13408 UCSD096i-34-1 WB64879 13409, UCSD101i-36-2 WB63523 13410 UCSD121i-39-2 WB64666 13411, UCSD122i-73-1 WB63538 13412 UCSD130i-76-1 WB64881 13413, UCSD138i-84-1 WB63874 13414 UCSD141i-37-2 WB65028 13415, UCSD144i-88-1 WB63539 13416 UCSD157i-12-3 WB64922 13417, UCSD159i-91-1 WB64880 13418 UCSD123i-74-1 WB53944 13419, UCSD126i-7-3 WB53933 13420 UCSD185i-8-2 WB54165 13421, UCSD086i-6-3 WB58711 13422 UCSD091i-15-3 WB58791 13423, UCSD118i-38-1 WB57664 13424 UCSD127i-7-4 WB58690 13425, UCSD137i-83-1 WB58970 13426 UCSD142i-86-1 WB58721 13427, UCSD146i-10-1 WB58698 13428 UCSD148i-10-3 WB58204 13429, UCSD162i-94-1 WB58792 13430 UCSD176i-17-1 WB58933 13431, UCSD177i-17-2 WB57849 13432 UCSD202i-108-1 WB57850 13433, UCSD205i-110-1 WB58200 13434 MCW038i-40000503 WB66475 13435, MCW005i-40002552 WB66498 13436 MCW019i-A7230 WB66534 13437, MCW022i-A2965 WB66509 13438 MCW023i-A2121 WB66535 13439, MCW027i-50000784 WB66536 13440

UNIQUE IDENTIFIER:

NA

PRODUCT REGISTRATION:

Other: Human iPS cells

Native Product Sterility Report



| TEST RESULTS: | # Tested | # Positives (Growth) | - Control | | |
|---|-----------|---|-------------|------------------------------------|----------------------------------|
| | 50 | 0 | Negative | | |
| TEST SUMMARY: | # Samples | Media Type | Volume (mL) | Incubation Temperature (° C) | Incubation Duration (Days) |
| | 50 | TSB | 40 | 20-25 | 14 |
| | 50 | FTG | 40 | 30-35 | 14 |
| REFERENCE: METHOD VALIDATIO TEST METHODOLOO | | Processed accord 000053 USP - Direct Tran | · | erility Test Procedu | ire |

COMMENTS: Report revised due to incorrect Volume.

Sample #18020925

"Reported As" per packing slip

REVIEWED BY

DATE 10008

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 February 8, 2018 FORM SOP-QU-004.01 Version G Edition 02 Reported by: AP Reviewed by: JB 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 | UCSD202i-108-1-WB57850 13368 | 208 | 207 | 207.5 | 76 | 73 | 74.5 | 0.36 | Negative | |
| 2 | Positive (+) Control | 370 | 382 | 376 | 9411 | 9544 | 9478 | 25.21 | Positive | |
| 3 | Negative (-) Control | 575 | 582 | 578.5 | 53 | 55 | 54 | 0.09 | Negative | |

