



Certificate of Analysis

Thaw and Culture Details

Cell Line Name	JHU048i	
WiCell Lot Number	DB41068	
Provider/Client	Johns Hopkins University – Laboratory of Dr. Lewis Becker	
Banked By	Johns Hopkins University – Laboratory of Dr. Lewis Becker	
Thaw and Culture Recommendations	WiCell recommends thawing 6 vials into 1 well of a 6 wells plate using TeSR™ - E8™ and Recombinant Human Vitronectin. WiCell recommends thawing using ROCK Inhibitor for best results.	
Protocol	WiCell Feeder Independent Pluripotent Stem Cell Protocol	
Culture Platform Prior to Freeze	Medium: E8	Matrix: Vitronectin
Passage Number	p4 Cells were cultured for 4 passages prior to freeze and post reprogramming. Plated cells at thaw should be labeled passage 5.	
Date Vialied	16-JUNE-2016	
Vial Label	P048 P4 6/16/16 0.6M	
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
	<p>Results: 46,XX,t(2;8)(q35;q13),t(2;16)(q37;q22)[2]/46,XX[17]</p> <p>Interpretation: This is an abnormal karyotype. Two apparently balanced translocations are present in two of twenty cells examined. The first apparently balanced translocation is between the long (q) arm of chromosome 2 and the long arm of chromosome 8. The second apparently balanced translocation is between the long arm of the other chromosome 2 and the long arm of chromosome 16. No other clonal abnormalities were detected at the stated band level of resolution.</p> <p>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.</p>			
Post-Thaw Viable Cell Recovery	WiCell	Thaw using specified Thaw & Culture Recommendations	Recoverable attachment after passage	Pass
Identity by STR	WiCell	PowerPlex 16 HS System by Promega™	Defines STR profile of deposited cell line	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

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.

- Embryoid bodies
- Infinium® Expanded Multi-Ethnic Genotyping Array (MEGA^{EX})



Certificate of Analysis

Approval Date	WiCell Quality Assurance Approval
02-June-2022	<p style="text-align: right;">6/2/2022</p> <p style="text-align: center;">X JKG</p> <hr/> <p>JKG Director, Quality Assurance Signed by: Gay, Jenna</p>

Date Reported: Friday, April 15, 2022

Cell Line Sex: Female

Cell Line: JHU048i-DB41068

Reason for Testing: LOT_RELEASE

Submitted Passage #: 5

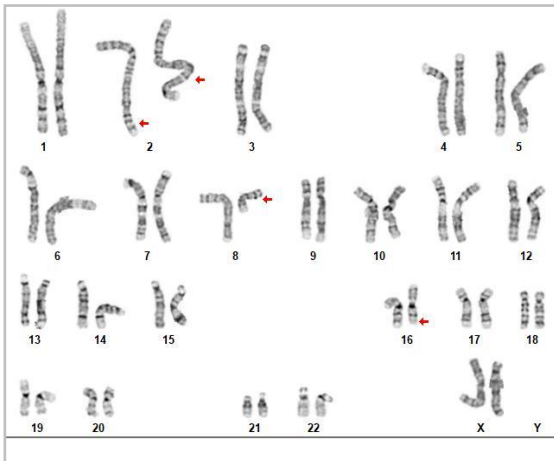
Date of Sample: 4/12/2022

Investigator: WiCell Stem Cell Bank, WiCell

Specimen: Human iPSC

Results: 46,XX,t(2;8)(q35;q13),t(2;16)(q37;q22)[2]/46,XX[17]

Nonclonal findings: 46,XX,t(2;8)(q21;q22)



Cell: 15

Slide: G01

Slide Type: Karyotype

Total Counted: 20

Total Analyzed: 9

Total Karyogrammed: 5

Band Resolution: 450 - 525

Interpretation:

This is an abnormal karyotype. Two apparently balanced translocations are present in two of twenty cells examined. The first apparently balanced translocation is between the long (q) arm of chromosome 2 and the long arm of chromosome 8. The second apparently balanced translocation is between the long arm of the other chromosome 2 and the long arm of chromosome 16. No other 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: Dawn Davis, CG(ASCP)

Reviewed and Interpreted by: Kaitlin C. Lenhart, PhD, DABMGG

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

Requestor: WiCell Stem Cell Bank, WiCell

Samples Received: 11Apr22, 12Apr22

STR Amplification Date:13Apr22

Form SOP-89.01

Version 8.0

Sample Name	JHU048i-DB41068 p5	JHU039i-DB40991 p5	JHU171i-DB36374 p10
Label on tube	91540	91532	91531
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	25	29	28
Matches*			
Comments			¹ See Allelic Imbalance Comment

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



Short Tandem Repeat

Requestor: WiCell Stem Cell Bank, WiCell
Samples Received: 11Apr22, 12Apr22
STR Amplification Date:13Apr22

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

Results: The genotypic profiles comprise a range of 25-29 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%.

Allelic Imbalance: Allelic imbalance was observed in sample 91531 at the **Amelogenin** loci. This could be the result of chromosomal gains, losses, and/or amplifications in the cell line.

4/16/2022	4/17/2022	4/21/2022
<p>X Hannah Rueth</p> <hr/> <p>Tech #1 Characterization Signed by: Rueth, Hannah</p>	<p>X Molly Miles</p> <hr/> <p>Tech #2 Characterization Signed by: Miles, Molly</p>	<p>X Dawn Graham</p> <hr/> <p>QA Review Quality Assurance Signed by: Graham Dawn</p>

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Raw data is available upon request.






Mycoplasma Assay Report

PCR-based assay performed by WiCell
WiCell Stem Cell Bank, WiCell
12Apr22

Form SOP-83.01
Version 5.0

Sample Name	Result	Interpretation
JHU048i-DB41068 p5 (91540)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
JHU039i-DB40991 p5 (91532)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
JHU171i-DB36374 p10 (91531)	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).

4/12/2022	4/12/2022	4/15/2022
 Kayla Janke	 Hannah Rueth	 Dawn Graham
Tech #1 Characterization Signed by: Janke, Kayla	Tech #2 Characterization Signed by: Rueth, Hannah	QA Review Quality Assurance Signed by: Graham Dawn

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A gel image is available upon request.

Native Product Sterility Report



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

SAMPLE #: 22040783
DATE RECEIVED: 14-Apr-22
TEST INITIATED: 28-Apr-22
TEST COMPLETED: 12-May-22

SAMPLE NAME / DESCRIPTION: JHU038i-DB40987
JHU039i-DB40991
JHU040i-DB41044
JHU043i-DB41052
JHU048i-DB41068
JHU055i-DB41083
JHU158i-DB36358
JHU171i-DB36374
JHU197i-DB41411
JHU235i-DB37044
[REDACTED]
JHU185i-DB41395
JHU052i-DB41077
iPS(IMR90)-4-WB67850
iPS(IMR90)-4-WB67851
iPS(IMR90)-4-WB67852
iPS(IMR90)-4-WB67853
PENN102i-96-1-DB36580
PENN104i-321-6-DB34693

UNIQUE IDENTIFIER: N/A

TEST RESULTS:

# Tested	# Positives (Growth)	- Control
19	0	2 Negatives

TEST SUMMARY:

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

Native Product Sterility Report



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

PD #: 000053

TEST METHODOLOGY: USP - Direct Transfer

COMMENTS: NA

REVIEWED BY *Aimee Burkhard*

DATE 23 May 2022

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.