Thaw and Culture Details

Cell Line Name	JHU199i
WiCell Lot Number	DB36795
Provider	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 1 vial into 1 wells of a 6 well plate. WiCell recommends thawing using ROCK Inhibitor for best results.
Culture Platform	Feeder Independent
	Medium: E8
	Matrix: Vitronectin
Protocol	WiCell Feeder Independent E8 Medium Protocol
Passage Number	p11 These cells were cultured for 11 passages post reprogramming prior to freeze. Add +1 to the passage number to best represent the overall passage number of the cells at thaw.
Date Vialed	09-November-2015
Vial Label	P199 P11 11/9/15 1.0x10^6
Biosafety and Use Information	This cell line is of human origin. 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	Fail
	Results: *46,XX,inv(12)(q13.3q22)[20]* ***Interpretation:*** *This is an abnormal karyotype. There is an apparently balanced paracentric inversion in chromosome 12 in twenty of twenty cells that were examined. No other clonal abnormalities were found. Comparison of this karyotype with the karyotype of the source (parental) specimen may be informative regarding the significance and origin of this abnormality.*			
Post-Thaw Viable Cell Recovery	WiCell	SOP-CH-305	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

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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.

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})

Approval Date	Quality Assurance Approval
14-July-2016	1/7/2018 X JKG JKG Quality Assurance Signed by: Gay, Jenna

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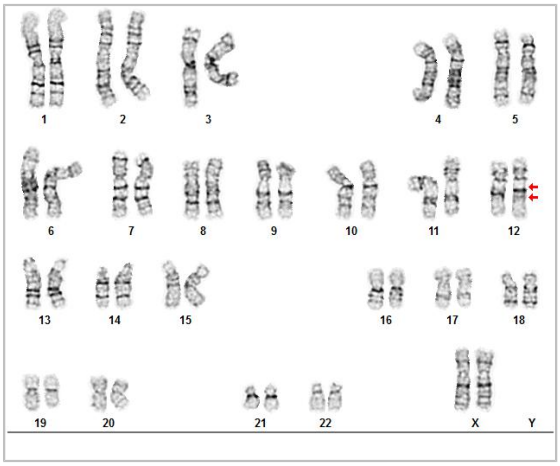
Chromosome Analysis Report: 069569

Date Reported: Tuesday, December 05, 2017
Cell Line: JHU199i-DB36795 13101
Passage#: 13
Date of Sample: 12/1/2017
Specimen: Human IPS
Results: 46,XX,inv(12)(q13.3q22)[20]

Cell Line Gender: Female
Reason for Testing: lot release testing
Investigator: [redacted], WiCell CDM



Cell: 43
Slide: G01
Slide Type: Karyotype

Total Counted: 20
Total Analyzed: 8
Total Karyogrammed: 4
Band Resolution: 425 - 500

Interpretation:

This is an abnormal karyotype. There is an apparently balanced paracentric inversion in chromosome 12 in twenty of twenty cells that were examined. No other clonal abnormalities were found.

Comparison of this karyotype with the karyotype of the source (parental) specimen may be informative regarding the significance and origin of this abnormality.

Completed by: [redacted], CG(ASCP)
Reviewed and Interpreted by: [redacted], PhD, FACMG

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 resu lts 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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TRIPath
HISTOLOGY - IHC - MOLECULAR - IMAGING
Department of Pathology and Laboratory Medicine
TRIP Laboratory (Molecular)
http://www.pathology.wisc.edu/research/trip

Short Tandem Repeat Analysis

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

Sample Report:
13101-STR
Sample Name on Tube: 13101-STR
74.0 ng/µL, (A260/280=1.79)
Sample Type: Cells
Cell Count: ~1.5 million cells

Requestor:
WiCell Research Institute
Quality Department

Sample Date: N/A
Receive Date: 12/04/17
Assay Date: 12/05/17
File Name: STR 171206 wmr
Report Date: 12/08/17

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 13101-STR cells submitted by WiCell QA dated and received on 12/04/17, this sample (Label on Tube: 13101-STR) defines the STR profile of the human stem cell line JHU199i comprising 28 allelic polymorphisms across the 15 STR loci analyzed.

Interpretation: No STR polymorphisms other than those corresponding to the human JHU199i 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 13101-STR sample submitted corresponds to the JHU199i 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 12/08/17**

[redacted] *BA*
TRIP Laboratory, Molecular

X *WMR* **Digitally Signed on 12/08/17**

[redacted], *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*
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

STERIS

SAMPLE #:	17110775
DATE RECEIVED:	09-Nov-17
TEST INITIATED:	14-Nov-17
TEST COMPLETED:	28-Nov-17

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

SAMPLE NAME / DESCRIPTION:
JHU019i-DB40960 13048
JHU050i-DB41074 13049
JHU199i-DB36795 13050
JHU206i-DB36823 13051
UCSD112i-2-11-WB66654 13052
UCSD177i-17-2-DB25459 13053
UCSD125i-7-2-DB25462 13054
UCSD174i-18-2-DB25465 13055
JHU002i-1-DB40935 13056
JHU004i-2-DB40945 13057

UNIQUE IDENTIFIER: NA

PRODUCT REGISTRATION: Human iPS cells

TEST RESULTS:

# Tested	# Positives (Growth)	- Control
10	0	2 Negatives

TEST SUMMARY:

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

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

METHOD VALIDATION / PD #: 000053

TEST METHODOLOGY: USP - Direct Transfer

COMMENTS: NA

REVIEWED BY _____ DATE 01DEC17

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

Lot Release Testing

November 20, 2017

FORM SOP-QU-004.01
Version G Edition 02
Reported by: KR
Reviewed by: JB
BD Monolight 180

#	Sample Name	Reading A		A Ave	Reading B		B Ave	Ratio B/A	Result	Comments/Suggestions
		RLU1	RLU2		RLU1	RLU2				
1	JHU199i-DB36795 13101	209	209	209	64	62	63	0.30	Negative	
2	Positive (+) Control	359	373	366	14265	14523	14394	39.33	Positive	
3	Negative (-) Control	618	647	632.5	84	81	82.5	0.13	Negative