Thaw and Culture Details

Cell Line Name	WISCi004-A-1
WiCell Lot Number	DB46582
Provider	Brigham & Women's Hospital – Dr. Tracy Young-Pearse
Banked By	Brigham & Women's Hospital – Dr. Tracy Young-Pearse
Thaw and Culture Recommendations	WiCell recommends thawing 1 vial into 4 wells of a 6 well plate. WiCell recommends thawing using ROCK Inhibitor for best results.
Culture Platform	Feeder Dependent
	Medium: iPS Medium (similiar to WiCell cKOSR Medium)
	Matrix: MEF
Protocol	WiCell Feeder Dependent Protocol
Passage Number	p177 These cells were cultured for 176 passages after colony picking. The provider adds +1 to the passage number to best represent the overall passage number of the cells at thaw.
Date Vialed	11-February-2016
Vial Label	1.4WT P177 2.11.16
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	Fail
	Result from report: There appears to be an interstitial duplication in the long arm of chromosome 20 in six of twenty cells examined. There is a known recurrent acquired duplication at this location in human pluripotent stem cell cultures; we recommend that this potential abnormality be confirmed by higher resolution (fluorescence insitu hybridization—FISH) testing. No other clonal defined abnormalities were found.			
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	Biotest Laboratories	ST/07	Negative	Pass
Mycoplasma	WiCell	SOP-QU-004	Negative	Pass

©2016 WiCell Research Institute
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.

- Expression of Nanog, Oct4, SSEA4, Sox2, and TRA-1-60 by immunostaining

Test Description	Method	Result
Genetic Analysis	G-Band Karyotype	Normal

Approval Date	Quality Assurance Approval
22-September-2016	8/9/2017 X AMK AMK Quality Assurance Signed by: Klade, Anjelica

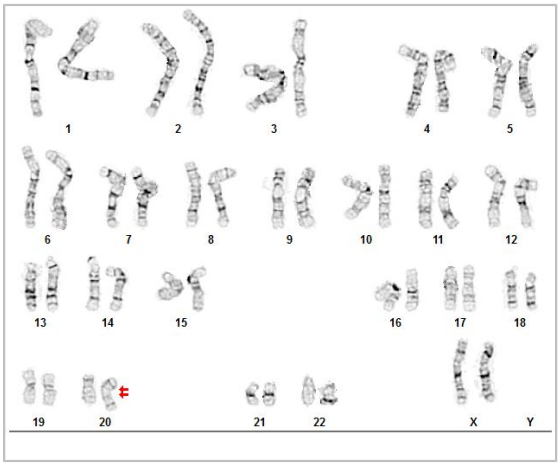
©2016 WiCell Research Institute
The material provided under this certificate has been subjected to the tests specified and the results and data described herein are accurate based on WiCell's reasonable knowledge and belief. Appropriate Biosafety Level practices and universal precautions should always 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.

Chromosome Analysis Report: 058273

Date Reported: Saturday, January 28, 2017
Cell Line: WISCi004-A-1-DB46582 12179
Passage#: 177
Date of Sample: 1/23/2017
Specimen: iPSC
Results: 46,XX,?dup(20)(q11.2q11.2)[6]/46,XX[14]

Cell Line Gender: Female
Reason for Testing: lot release testing

Investigator: [redacted], WiCell CDM



Cell: 21
Slide: 1
Slide Type: Karyotype

Total Counted: 20
Total Analyzed: 8
Total Karyogrammed: 4
Band Resolution: 475 - 550

Interpretation:

There appears to be an interstitial duplication in the long arm of chromosome 20 in six of twenty cells examined. There is a known recurrent acquired duplication at this location in human pluripotent stem cell cultures; we recommend that this potential abnormality be confirmed by higher resolution (fluorescence in situ hybridization—FISH) testing. No other clonal defined abnormalities were found.

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.

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 Analysis

School of Medicine and Public Health
UNIVERSITY OF WISCONSIN-MADISON
Department of Pathology and Laboratory Medicine
TRIP Laboratory (Molecular)
http://www.pathology.wisc.edu/research/trip

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

Sample Report:
12179-STR
Sample Name on Tube: 12179-STR
215.1 ng/µL, (A260/280=1.96)
Sample Type: Cells
Cell Count: ~2 million cells

Requestor:
WiCell Research Institute
Quality Department

Sample Date: N/A
Receive Date: 02/06/17
Assay Date: 02/06/17
File Name: STR 170207 wmr
Report Date: 02/09/17
Revised: 02/13/17

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 12179-STR cells submitted by WiCell QA dated and received on 02/06/17, this sample (Label on Tube: 12179-STR) defines the STR profile of the human stem cell line WISCi004-A-1 comprising 28 allelic polymorphisms across the 15 STR loci analyzed.

Interpretation: No STR polymorphisms other than those corresponding to the human WISCi004-A-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 12179-STR sample submitted corresponds to WISCi004-A-1 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 02/13/17**

[redacted]
TRIP Laboratory, Molecular

X *WMR* **Digitally Signed on 02/13/17**

[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).

Sterility Report

Biotest Laboratories, Inc.
Making life-saving products possible

WiCell Research Institute, Inc.
WiCell Quality Assurance
504 South Rosa Road, Room 101
Madison, WI 53719

BIOTEST SAMPLE # 17010571

VALIDATION # NG

TEST PURPOSE NG

PRODUCT	MIN15i-33363.D-WB53917 12106, PENN042i-258-12-DB34949 12107, PENN124i-28-3-DB34980 12108, PENN010i-486-2-DB34783 12109, PENN011i-719-2-DB34753 12110, PENN090i-111-4-DB34793 12111, WISCi004-A-1-DB46582 12112, WISCi004-A-2-DB46585 12113, WISCi004-A-3-DB46588 12114, WISCi004-A-4-DB46591 12115
PRODUCT LOT	NA
STERILE LOT	NA
STERILIZATION LOT	NA
STERILIZATION DATE	NA
STERILIZATION METHOD	NA
SAMPLING BLDG / ROOM	NA
BI LOT	NA
BI EXPIRATION DATE	NA
DATE RECEIVED	2017-01-10
TEST INITIATED	2017-01-16
TEST COMPLETED	2017-01-30

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

Ten (10) products were each divided between 40 mL TSB and 40 mL FTG. The samples were then cultured at 20-25 C and 30-35 C respectively and were monitored for a minimum of 14 days.

☒ USP
☐ BI Manufacturers Specifications
☐ Other

RESULTS	# POSITIVES	# TESTED	POSITIVE CONTROL	NEGATIVE CONTROL
Sterile	0	10	NA	2 Negatives

COMMENTS NA

REVIEWED BY _____ DATE 02 FEB 17

Specific test results may not be indicative of the characteristics of any other samples from the same lot or similar lots. Liability is limited to the costs of the tests. The uncertainty of measurement associated with the measurement result reported in this certificate is available from the organization upon request.

Mycoplasma Detection Assay Report

Testing Performed by WiCell

Lot Release Testing

January 9, 2017

FORM SOP-QU-004.01
Version F Edition 02
Reported by: OG
Reviewed by: JB
Berthold Flash n' Glo 539

#	Sample Name	Reading A		A Ave	Reading B		B Ave	Ratio B/A	Result	Comments/Suggestions
		RLU1	RLU2		RLU1	RLU2				
1	WISCi004-A-1-DB46582 12122	227	232	229.5	86	82	84	0.37	Negative	
2	Positive (+) Control	174	167	170.5	12268	12252	12260	71.91	Positive	
3	Negative (-) Control	336	319	327.5	33	30	31.5	0.10	Negative