Thaw and Culture Details

Cell Line Name	WA09
WiCell Lot Number	WB66595
Parent Material	WA09-MCB-01
Provider	University of Wisconsin – Dr. James Thomson
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	p23 These cells were cultured for 22 passages prior to freeze. WiCell adds +1 to the passage number to best represent the overall passage number of the cells at thaw.
Date Vialed	11-September-2017
Vial Label	WA09 p23 WB66595
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

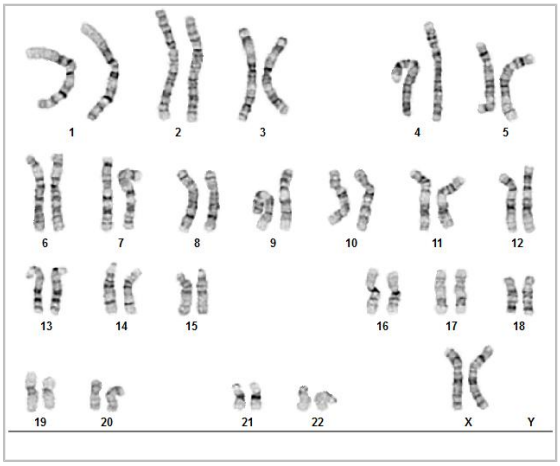
Test Description	Test Provider	Test Method	Test Specification	Result
Karyotype by G-banding	WiCell	SOP-CH-003	Expected karyotype	Pass
Post-Thaw Viable Cell Recovery	WiCell	SOP-CH-305	≥ 15 Undifferentiated Colonies, ≤ 30% Differentiation and recoverable attachment after passage	Pass
Identity by STR	UW Translational Research Initiatives in Pathology Laboratory	PowerPlex 16 HS System by Promega	Consistent with known profile	Pass
Sterility	Biotest Laboratories	ST/07	Negative	Pass
Mycoplasma	WiCell	SOP-QU-004	Negative	Pass

Approval Date	Quality Assurance Approval
20-October-2017	10/20/2017 X RK RK Quality Assurance Signed by: Kremers, Erik

Chromosome Analysis Report: 068676

Date Reported: Thursday, October 12, 2017
Cell Line: WA09-WB66595 12941
Passage#: 23
Date of Sample: 10/2/2017
Specimen: Human ESC
Results: 46,XX

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



Cell: 11
Slide: G01
Slide Type: Karyotype

Total Counted: 20
Total Analyzed: 8
Total Karyogrammed: 4
Band Resolution: 450 - 550

Interpretation:

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

Completed by: [redacted]
Reviewed and Interpreted by: [redacted]

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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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:
12941-STR
Sample Name on Tube: 12941-STR
86.7 ng/µL, (A260/280=1.78)
Sample Type: Cells
Cell Count: ~2 million cells

Requestor:
WiCell Research Institute
Quality Department

Sample Date: N/A
Receive Date: 10/09/17
Assay Date: 10/10/17
File Name: 171011 STR WMR
Report Date: 10/12/17

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	26,28
TPOX	6-13	10,11
D8S1179	7-18	8,14
vWA	10-22	17,17
Amelogenin	X,Y	X,X
Penta_D	2.2, 3.2, 5, 7-17	9,13
CSF1PO	6-15	11,11
D16S539	5, 8-15	12,13
D7S820	6-14	9,11
D13S317	7-15	9,9
D5S818	7-16	11,12
Penta_E	5-24	11,14
D18S51	8-10, 10.2, 11-13, 13.2, 14-27	13,13
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	30,30
TH01	4-9,9.3,10-11,13.3	9.3,9.3
D3S1358	12-20	13,16

<u>Results:</u> Based on the 12941-STR cells submitted by WiCell QA dated and received on 10/09/17, this sample (Label on Tube: 12941-STR) exactly matches the STR profile of the human stem cell line WA09 comprising 24 allelic polymorphisms across the 15 STR loci analyzed.

<u>Interpretation:</u> No STR polymorphisms other than those corresponding to the human WA09 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 12941-STR sample submitted corresponds to the WA09 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 10/13/17**

[redacted]
TRIP Laboratory, Molecular

X *WMR* **Digitally Signed on 10/13/17**

[redacted], *PhD, Director / Co-Director*
UWHC Molecular Diagnostics Laboratory / UWSMPH TRIP Laboratory

Native Product Sterility Report

STERIS

CORRECTED REPORT

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

SAMPLE #:	17091273
DATE RECEIVED:	21-Sep-17
TEST INITIATED:	25-Sep-17
TEST COMPLETED:	09-Oct-17

SAMPLE NAME / DESCRIPTION:
UCSD132i-78-1-WB61728 12898
UCSD153i-11-4-WB60259 12899
STAN053i-149-1-WB66592 12900
WA09-WB66593 12901
WA09-WB66594 12902
WA09-WB66595 12903
JFMD1-WB66599 12904
JFWT5-WB66596 12905
STAN008i-165-1-WB66600 12906
UCSD079i-1-12-WB58931 12907

UNIQUE IDENTIFIER: NA

PRODUCT REGISTRATION: Other: Human iPS cells

TEST RESULTS:

# Tested	# Positives (Growth)	- Control
10	1	3 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

Native Product Sterility Report

STERIS

COMMENTS: Sample labeled as WA09-WB66594 12902 was positive.
Report revised due to corrected Comment.

CORRECTED REPORT

REVIEWED BY _____ DATE 21Nov17

Mycoplasma Detection Assay Report

Testing Performed by WiCell

Lot Release Testing

October 3, 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	WA09-WB66595 12941	227	232	229.5	79	78	78.5	0.34	Negative	
2	Positive (+) Control	439	428	433.5	32189	32447	32318	74.55	Positive	
3	Negative (-) Control	699	716	707.5	79	80	79.5	0.11	Negative