

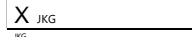


Thaw and Culture Details

Cell Line Name	WISC014i-SC1
WiCell Lot Number	WB66706
Provider	University of Wisconsin – Dr. Igor Slukvin
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: TeSR™-E8™
	Matrix: Matrigel®
Protocol	WiCell Feeder Independent E8 Medium Protocol
Passage Number	p53 Cells were modified from WISC011i-inGFPpuro at passage 40. These cells were cultured for 12 passages post modification and prior to freeze. WiCell adds +1 to the passage number at freeze to best represent the overall passage number of the cells at thaw. Plated cells at thaw should be labeled passage 53.
Date Vialied	11-DECEMBER-2017
Vial Label	WISC014i-SC1 p13 WB66706
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.

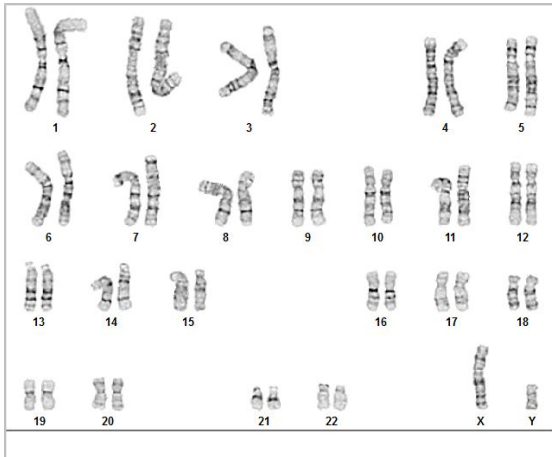
Testing Performed by WiCell

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
Expression of Reporter Proteins	WiCell	SOP-CH-032	Expression of reporter proteins reported	Pass

Approval Date	Quality Assurance Approval
19-May-2018	<div style="text-align: right;">5/19/2018</div>  <small>JKG Quality Assurance Signed by Gay, Jenna</small>

Date Reported: Wednesday, January 17, 2018
Cell Line: WISC014i-SC1-WB66706 13208
Passage#: 13
Date of Sample: 1/11/2018
Specimen: Human iPSC
Results: 46,XY

Cell Line Gender: Male
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: 475 - 525

Interpretation:

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

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 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.

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.

Sample Report:

13208-STR

Sample Name on Tube: 13208-STR115.3 ng/ μ L, (A260/280=1.88)**Sample Type:** Cells**Cell Count:** ~2 million cells**Requestor:**

WiCell Research Institute

Quality Department

Sample Date: N/A**Receive Date:** 01/22/18**Assay Date:** 01/23/18**File Name:** 180124 STR TCS**Report Date:** 01/26/18

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 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 13208-STR cells submitted by WiCell QA dated and received on 01/22/18, this sample (Label on Tube: 13208-STR) defines the STR profile of the human stem cell line WISC014i-SC1 comprising 27 allelic polymorphisms across the 15 STR loci analyzed.

Interpretation: No STR polymorphisms other than those corresponding to the human WISC014i-SC1 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 13208-STR sample submitted corresponds to the WISC014i-SC1 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%.



Digitally Signed on 01/29/18


BA
TRIP Laboratory, Molecular

Digitally Signed on 01/29/18


PhD, Director / Co-Director
UWHC Molecular Diagnostics Laboratory / UWSPH 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



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

SAMPLE #: 17121502
DATE RECEIVED: 21-Dec-17
TEST INITIATED: 26-Dec-17
TEST COMPLETED: 09-Jan-18

SAMPLE NAME / DESCRIPTION: UCSD050i-54-1 WB54411 13186
UCSD051i-55-1 WB54717 13187
UCSD052i-56-1 WB57717 13188
UCSD053i-57-1 WB55067 13189
UCSD054i-58-1 WB55461 13190
UCSD055i-59-1 WB54168 13191
UCSD056i-60-1 WB57571 13192
UCSD057i-61-1 WB55674 13193
UCSD058i-62-1 WB57057 13194
UCSD059i-63-1 WB63472 13195
UCSD060i-64-1 WB57102 13196
UCSD063i-20-1 WB62421 13197
WISCO15i-SC7 WB66708 13198
UCSD235i-SAD2-4 WB66703 13199
STAN053i-149-1 WB66707 13200
HVRDi002-A WB66709 13201
WISCO14i-SC1 WB66706 13202
CREM032i-SS48-1 WB66711 13203
UCSD207i-31-2 WB66716 13204
UCSD065i-20-3 WB60829 13205

UNIQUE IDENTIFIER: NA
PRODUCT REGISTRATION: Other: Human iPS cells

TEST RESULTS:

# Tested	# Positives (Growth)	- Control
20	0	2 Negatives

TEST SUMMARY:

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

REFERENCE: Processed according to LAB-003: Sterility Test Procedure
METHOD VALIDATION / PD #: 000053

Native Product Sterility Report



TEST METHODOLOGY: USP - Direct Transfer

COMMENTS: Sample # 17121502

REVIEWED BY *[Signature]*

DATE 10 JAN 18

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

January 12, 2018

FORM SOP-QU-004.01

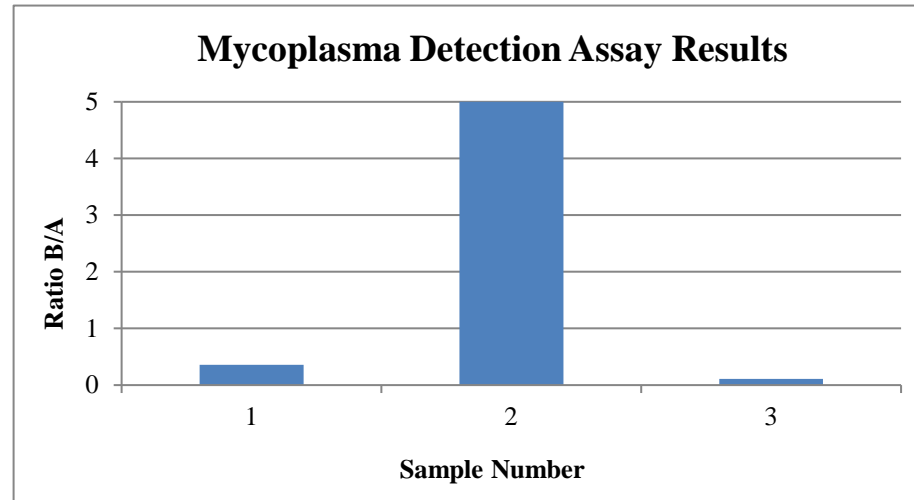
Version G Edition 02

Reported by: KR

Reviewed by: JB

BD Monolight 180

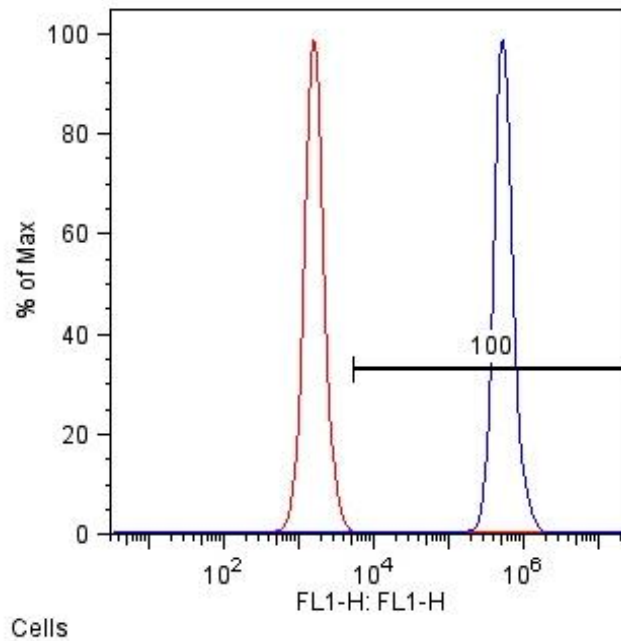
#	Sample Name	Reading A		A Ave	Reading B		B Ave	Ratio B/A	Result	Comments/Suggestions
		RLU1	RLU2		RLU1	RLU2				
1	WISC014i-SC1-WB66706 13208	211	215	213	82	70	76	0.36	Negative	
2	Positive (+) Control	340	347	343.5	17780	17867	17824	51.89	Positive	
3	Negative (-) Control	556	577	566.5	66	59	62.5	0.11	Negative	



Cell Line-Lot Number	WISC014i-SC1-WB66706
Sample ID	13208
Passage Number	p15
Reported By/Date	KR 25JAN18
QA Review By/Date	RK 26Jan18
Percent Positive for Reporter Protein	100%
Deviations from Procedure	<input checked="" type="checkbox"/> N/A
Notes	<input checked="" type="checkbox"/> N/A

Histogram Plot Indicating Positive Percentage of the Reporting Gene

Red peak is negative control population. Blue peak is test population.



█	A01 WISC014-SC1-WB66706-T104	67.8
█	A01 iPSDF1997TFTDL01-T1042396.fcs	56.3