



Certificate of Analysis

Thaw and Culture Details

Cell Line Name	STAN073i-180-1	
WiCell Lot Number	DB31159	
Provider/Client	Stanford University – Laboratory of Dr. Marlene Rabinovitch	
Banked By	Stanford University – Laboratory of Dr. Marlene Rabinovitch	
Thaw and Culture Recommendations	WiCell recommends thawing 1 vial into 1 well of a 6 well plate using E8 and Matrigel®. 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: Matrigel®
Passage Number	p10 Cells were cultured for 10 passages prior to freeze and post reprogramming. Plated cells at thaw should be labeled passage 11.	
Date Vialied	04-December-2015	
Vial Label	12/04/2015 E 180 D#####-### ip SCVI180C1 P10 V#####	The label on vial only includes information applicable to the entire lot. “D#####-###” and “V#####” are vial specific and therefore are not included on this CoA.
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

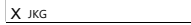
Test Description	Test Provider	Test Method	Test Specification	Result
Karyotype	WiCell	G-T-L Banding performed on 20 metaphase cells	Expected karyotype	See Report
	Results: 46,XY Interpretation: This is a normal karyotype; no clonal abnormalities were detected at the stated band level of resolution.			
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

Test Description	Method	Result
Identity	SNP	iPSCs match the donor material
Mycoplasma	Lonza MycoAlert™ kit	Negative

The Provider stated that the additional analysis 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.

- Infinium® Expanded Multi-Ethnic Genotyping Array (MEGAEX)

Approval Date	WiCell Quality Assurance Approval
21-October-2021	<div style="text-align: right; font-size: small;">10/21/2021</div>  <div style="font-size: x-small;"> X JKG JKG WiCell Quality Assurance Signed by: Clay, Jenna </div>

Date Reported: Thursday, September 9, 2021

Cell Line Sex: Male

Cell Line: STAN073i-180-1-DB31159

Reason for Testing: LOT_RELEASE

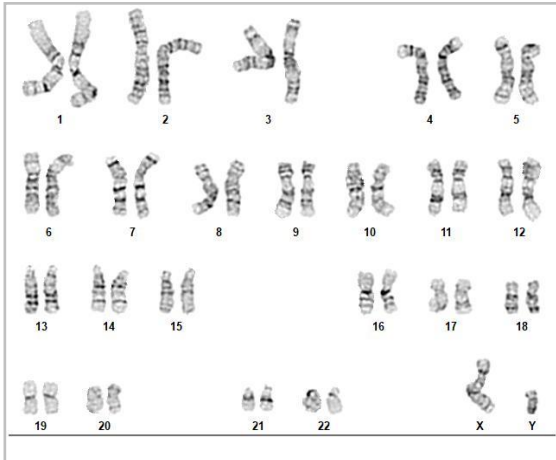
Submitted Passage #: 12

Date of Sample: 9/2/2021

Investigator: WiCell Stem Cell Bank, WiCell

Specimen: Human IPSC

Results: 46,XY



Cell: 40

Slide: G01

Slide Type: Karyotype

Total Counted: 20

Total Analyzed: 8

Total Karyogrammed: 4

Band Resolution: 400 - 425

Interpretation:

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

Completed by: Dawn Davis, CG(ASCP)

Reviewed and Interpreted by: Vanessa Horner, PhD, FACMG

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

Form SOP-89.01

Version 7.0

Requestor: WiCell Stem Cell Bank, WiCell

Samples Received: 30Aug21, 01Sep21, 02Sep21, 03Sep21, 07Sep21, 08Sep21

STR Amplification Date: 08Sep21, 13Sep21

Sample Name	STAN073i-180-1-DB31159 p12						
Label on tube	88235						
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	27	27	27	27	28	27	27
Matches*	See Matches Comment	See Matches Comment	See Matches Comment	See Matches Comment	88314	See Matches Comment	See Matches Comment
Comments							

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



Short Tandem Repeat

Form SOP-89.01

Version 7.0

Requestor: WiCell Stem Cell Bank, WiCell

Samples Received: 30Aug21, 01Sep21, 02Sep21, 03Sep21, 07Sep21, 08Sep21

STR Amplification Date: 08Sep21, 13Sep21

Sample Name	<p>Identifying information has been redacted to protect donor confidentiality. If more information is required, please contact info@wicell.org</p>						
Label on tube							
FGA							
TPOX							
D8S1179							
vWA							
Amelogenin							
Penta_D							
CSF1PO							
D16S539							
D7S820							
D13S317							
D5S818							
Penta_E							
D18S51							
D21S11							
TH01							
D3S1358							
Allelic Polymorphisms	27	27	27	27	27	27	27
Matches*	See Matches Comment	See Matches Comment	See Matches Comment	See Matches Comment	See Matches Comment	See Matches Comment	See Matches Comment
Comments							

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



Short Tandem Repeat

Form SOP-89.01

Version 7.0

Requestor: WiCell Stem Cell Bank, WiCell

Samples Received: 30Aug21, 01Sep21, 02Sep21, 03Sep21, 07Sep21, 08Sep21

STR Amplification Date: 08Sep21, 13Sep21

Sample Name	STAN074i-180-2-DB31166 p13
Label on tube	88314
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	28
Matches*	88235
Comments	

**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: 30Aug21, 01Sep21, 02Sep21, 03Sep21, 07Sep21, 08Sep21

STR Amplification Date: 08Sep21, 13Sep21

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 27-28 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%.

Matches: Samples 87938, 87939, 87940, 88164, 88236, 88237, 88238, 88264, 88265, 88270, 88281, 88282, and 88283 are exact matches to each other and to 87727, 87792, 87794, 87805, 87893, 87894, 87923, 87924, and 87925.

9/17/2021	9/17/2021	9/17/2021
<p>X Molly Miles</p> <hr/> <p>Tech #1 Characterization Signed by: Miles, Molly</p>	<p>X Callum Walker</p> <hr/> <p>Tech #2 Characterization Signed by: Walker, Callum</p>	<p>X Dawn Graham</p> <hr/> <p>QA Review Quality Assurance Signed by: Graham, Dawn</p>

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.

Raw data is available upon request.



Mycoplasma Assay Report

PCR-based assay performed by WiCell

WiCell
04Sep21

FORM SOP-83.01

Version 3.0

Sample Name	Result	Interpretation
[REDACTED]	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
[REDACTED]	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
[REDACTED]	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
STAN073i-180-1-DB31159 p12 (88235)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
[REDACTED]	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
STAN017i-171-1-DB31059 p11 (88257)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
Positive (+) Control	Positive	
Negative (-) Control	Negative	

9/14/2021

9/14/2021

9/15/2021

X Molly Miles

Tech #1
Characterization
Signed by: Miles, Molly

X Justin Hobson

Tech #2
Characterization
Signed by: Hobson, Justin

X Andy Arntz

QA Review
Quality Assurance
Signed by: Arntz, Andy

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.

A gel image is available upon request.

Native Product Sterility Report

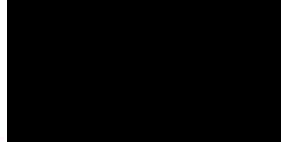


WiCell
504 S Rosa Road, Rm 101
Madison, WI 53719

CORRECTED REPORT

SAMPLE #: 21090138
DATE RECEIVED: 02-Sep-21
TEST INITIATED: 09-Sep-21
TEST COMPLETED: 23-Sep-21

SAMPLE NAME / DESCRIPTION: STAN061i-164-1-WB67675
CREM055i-BR37-1-WB67683
IMR90-TSC2Het-WB67712
IMR90-TSC2Null-WB67713
WC-52-TSC2Corr-WB67715
WC-52-TSC2Null-WB67719
STAN014i-121-2-DB31149
STAN073i-180-1-DB31159
STAN074i-180-2-DB31166



SCR9001i-DB43138
SCR9301i-DB43141
SCR9501i-DB43147
SCR9805i-DB43172
SCR9904i-DB43177
CREM031i-SS47-1-DB48067

UNIQUE IDENTIFIER: N/A

TEST RESULTS:

# Tested	# Positives (Growth)	- Control
19	1	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: Sample # 21090138

Report revised due to updated comment.

Sample labeled STAN014i-121-2-DB31149 is positive.

REVIEWED BY

A handwritten signature in blue ink, appearing to read "S. L. ...", written over a horizontal line.

DATE 15 OCT 2021

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.