



Certificate of Analysis

Thaw and Culture Details

Cell Line Name	PENN140i-M12-7	
WiCell Lot Number	DB36335	
Provider/Client	University of Pennsylvania – Dr. Daniel Rader	
Banked By	Penn Institute for Regenerative Medicine iPS Core Facility	
Thaw and Culture Recommendations	WiCell recommends thawing 1 vial into 2 wells of a 6 well plate using Stem Cell Culture Medium MEF. WiCell recommends thawing using ROCK Inhibitor for best results.	
Protocol	WiCell Feeder Based (MEF) Pluripotent Stem Cell Protocol	
Culture Platform Prior to Freeze	Medium: Stem Cell Culture Medium	Matrix: MEF
Passage Number	p16 Cells were cultured for 16 passages prior to freeze and post colony selection. Plated cells at thaw should be labeled passage 17.	
Date Vialied	01-February-2013	
Vial Label	iPS-PB M12-7 Sev P16 2/1/2013 RY	
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

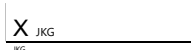
Results

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

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.

- SNP microarray
- Flow Cytometry (Tra1-60 and SSEA-4)
- Differentiation into hepatocytes
- Infinium® Expanded Multi-Ethnic Genotyping Array (MEGA^{EX})

Approval Date	WiCell Quality Assurance Approval
12-August-2021	<div style="text-align: right; font-size: small;">8/12/2021</div>  <div style="font-size: x-small; margin-top: 5px;"> JKG WiCell Quality Assurance Signed by Gay Jenna </div>

Date Reported: Wednesday, July 28, 2021

Cell Line Sex: Male

Cell Line: PENN140i-M12-7-DB36335

Reason for Testing: LOT_RELEASE

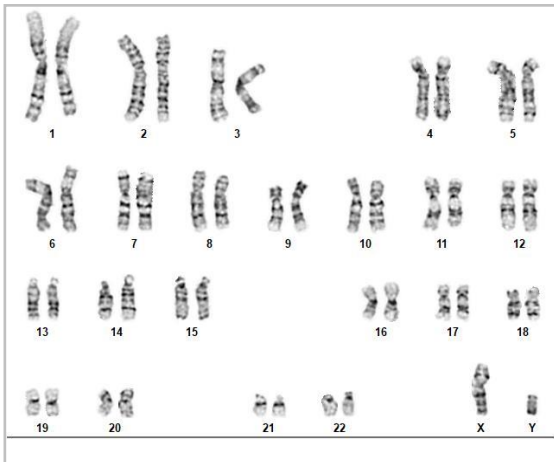
Submitted Passage #: 18

Date of Sample: 7/15/2021

Investigator: WiCell Stem Cell Bank, WiCell

Specimen: Human iPSC

Results: 46,XY



Cell: 83

Slide: G03

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: Timm Gonzales, 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

Requestor: WiCell Stem Cell Bank, WiCell
 Samples Received: 15Jul21, 16Jul21, 20Jul21
 STR Amplification Date: 21Jul21

Form SOP-89.01
 Version 6.0

Sample Name	PENN088i-854-7-DB34960 p16	PENN140i-M12-7-DB36335 p18	PENN158i-M12-4-DB36329 p20	UCSD239i-APP2-1-WB67672 p25	HVRDi001-A-WB67674 p35
Label on tube	87078	87079	87080	87113	87136
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	25	25	28	28
Matches*		87080	87079	67074, 67101, 68023, 75167	66403, 67688
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 6.0

Requestor: WiCell Stem Cell Bank, WiCell
Samples Received: 15Jul21, 16Jul21, 20Jul21
STR Amplification Date: 21Jul21

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 25-28 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%.

7/27/2021	7/27/2021	7/27/2021
X Molly Miles	X Callum Walker	X Haley Bruner
Tech #1 Characterization Signed by: Miles, Molly	Tech #2 Characterization Signed by: Walker, Callum	QA Review Quality Assurance Signed by: Bruner, Haley

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
06Jul21

FORM SOP-83.01

Version 3.0

Sample Name	Result	Interpretation
PENN088i-854-7-DB34960 p15 (86938)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
PENN140i-M12-7-DB36335 p17 (86939)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
PENN158i-M12-4-DB36329 p19 (86940)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
Positive (+) Control	Positive	
Negative (-) Control	Negative	

7/12/2021

7/9/2021

7/12/2021

X Anna Lisa Larson

Tech #1
Characterization
Signed by: Larson, Anna Lisa

X Hannah Rueth

Tech #2
Characterization
Signed by: Rueth, Hannah

X Dawn Graham

QA Review
Quality Assurance
Signed by: Graham Dawn

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

SAMPLE #: 21070013
DATE RECEIVED: 01-Jul-21
TEST INITIATED: 14-Jul-21
TEST COMPLETED: 28-Jul-21

SAMPLE NAME / DESCRIPTION: UCSD030i-23-2-WB67661
PENNO88i-854-7-DB34960
PENN158i-M12-4-DB36329
PENN129i-20-14-DB35019
PENN140i-M12-7-DB36335
PENNO42i-258-12-WB67671
STAN030i-46-1-WB67662
SCR7602i-DB43013
SCR7803i-DB43016
SCR7903i-DB43019

UNIQUE IDENTIFIER: N/A

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

PD #: 000053

TEST METHODOLOGY: USP - Direct Transfer

COMMENTS: NA

REVIEWED BY 

DATE 28 Jul 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.