



Certificate of Analysis

Thaw and Culture Details

Cell Line Name	PENN023i-82-1	
WiCell Lot Number	DB35098	
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 and 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	p14 Cells were cultured for 13 passages prior to freeze and post or colony selection. Plated cells at thaw should be labeled passage 14.	
Date Vialied	27-January-2015	
Vial Label	iPS-82-1572 Sev1 P14 01-27-15 JS	
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

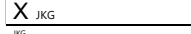
Results

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,XX 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
15-July-2021	<div style="text-align: right; font-size: small;">7/15/2021</div>  <div style="font-size: x-small;"> X JKG JKG WiCell Quality Assurance Signed by Gay Jenna </div>

Date Reported: Wednesday, July 7, 2021

Cell Line: PENN023i-82-1-DB35098

Submitted Passage #: 16

Date of Sample: 6/24/2021

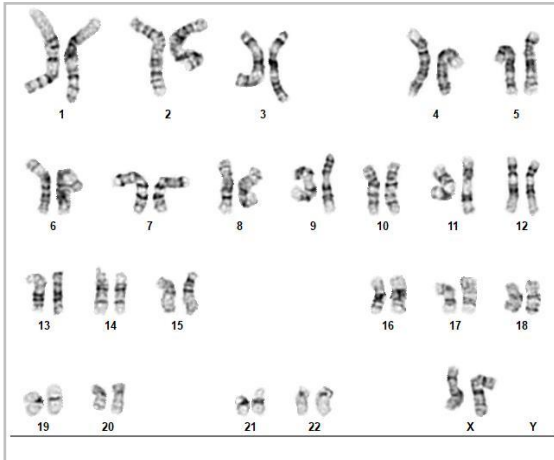
Specimen: Human iPSC

Results: 46,XX

Cell Line Sex: Female

Reason for Testing: LOT_RELEASE

Investigator: WiCell Stem Cell Bank, WiCell



Cell: 88

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: Timm Gonzales, CG(ASCP)

Reviewed and Interpreted by: Kaitlin C. Lenhart, Ph.D.

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: 24Jun21

STR Amplification Date: 28Jun21

Form SOP-89.01

Version 5.0

Sample Name	PENN121i-69-1-DB34956 p14	PENN023i-82-1-DB35098 p16
Label on tube	86810	86811
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
Matches*		
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: 24Jun21

STR Amplification Date: 28Jun21

Form SOP-89.01

Version 5.0

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 25-27 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%.

6/30/2021	6/30/2021	6/30/2021
<p>X Hannah Rueth</p> <hr/> <p>Tech #1 Characterization Signed by: Cyto genetics</p>	<p>X Amber Kuhn</p> <hr/> <p>Tech #2 Characterization Signed by: Kuhn, Amber</p>	<p>X Dawn Graham</p> <hr/> <p>QA Review Quality Assurance Signed by: Graham Dawn</p>

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Raw data is available upon request.



Mycoplasma Assay Report

PCR-based assay performed by WiCell

WiCell
15Jun21

FORM SOP-83.01

Version 3.0

Sample Name	Result	Interpretation
WA01-WB67656 p22 (86570)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
PENN023i-82-1-DB35098 p15 (86623)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
PENN111i-222-5-DB36511 p13 (86624)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
PENN121i-69-1-DB34956 p13 (86625)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
Positive (+) Control	Positive	
Negative (-) Control	Negative	

6/15/2021

6/16/2021

6/16/2021

X Callum Walker

Tech #1
Characterization
Signed by: Walker, Callum

X Amber Kuhn

Tech #2
Characterization
Signed by: Kuhn, Amber

X Dawn Graham

QA Review
Quality Assurance
Signed by: Graham, Dawn

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A gel image is available upon request.

Native Product Sterility Report



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

SAMPLE #: 21050267
DATE RECEIVED: 06-May-21
TEST INITIATED: 12-May-21
TEST COMPLETED: 26-May-21

SAMPLE NAME / DESCRIPTION: CHB-4-WB67645
WIZ02e-H9CAGhM4Di-WB67644
PENN111i-222-5-DB36511
PENN121i-69-1-DB34956
PENNO23i-82-1-DB35098
PENN114i-127-2-DB34717
PENN132i-131-5-DB35044
SCR5003i-DB42961
SCR5508i-DB42969
SCR5603i-DB42976

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 Chris Buckhard

DATE 26 May 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.