



Certificate of Analysis

Thaw and Culture Details

Cell Line Name	PENN166i-M15-4	
WiCell Lot Number	DB36113	
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 1 well 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	P12 These cells were cultured for 12 passages prior to freeze and post colony picking. Therefore, plated cells at thaw should be labeled passage 13.	
Date Vialled	15-April-2013	
Vial Label	iPS-PB M15-4 P12 4/15/13 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.	



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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.

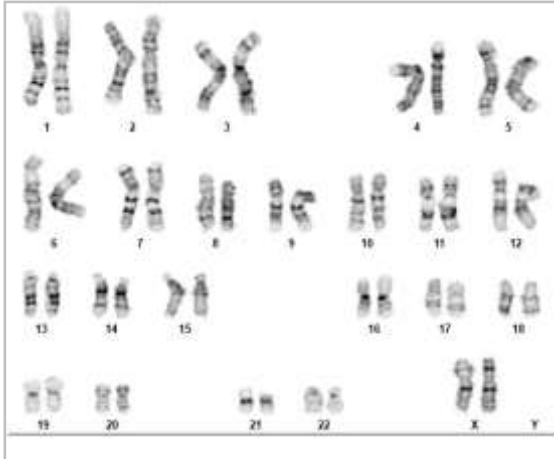
- SNP microarray
- Flow Cytometry (Tra1-60 and SSEA-4)
- Differentiation into hepatocytes
- Infinium® Expanded Multi-Ethnic Genotyping Array (MEGA^{EX})

Approval Date	WiCell Quality Assurance Approval
20-November-2025	<div>11/20/2025</div> <div>X HEB</div> <div>HEB</div> <div>WiCell Quality Assurance</div> <div>Signed by: Bruner, Haley</div>

The material provided under this certificate has been subjected to the tests specified and the results and data described herein are accurate based on WiCell's reasonable knowledge and belief. Appropriate Biosafety Level practices and universal precautions should always be used with this material. For clarity, the foregoing is governed solely by WiCell's Terms and Conditions of Service, which can be found at <http://www.wicell.org/privacyandterms>.

Date Reported: September 25, 2025
Cell Line: PENN166i-M15-4-DB36113
Submitted Passage #: 15
Date of Sample: 9/23/2025
Specimen: Human iPSC
Results: 46,XX

Cell Line Sex: Female
Reason for Testing: LOT_RELEASE
Investigator: WiCell Stem Cell Bank, WiCell



Cell: 31
Slide: G01
Slide Type: Karyotype
Total Counted: 20
Total Analyzed: 8
Total Karyogrammed: 4
Band Resolution: 425 - 500

Interpretation:

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

Completed by: Korrine Thornell, CG(ASCP)
Reviewed and Interpreted by: Justin Schleede, PhD, FACMG

For internal use only

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
Sample Receipt Date: 22Sep25, 23Sep25, 24Sep25, 19Sep25
STR Amplification Date: 03Oct25

Form SOP-89.01
Version 15.0

Sample Name	PENN159i-M14-4-DB36347 p19	PENN166i-M15-4-DB36113 p15	PENN162i-M14-11-DB36340 p20	CVCL_C7VJ-WB69026 p49	PENN139i-M5-4-DB35092 p29	CVCL_C7UX-WB69034 p49
WiCell CTR No. ¹	Identifying information has been redacted to protect donor confidentiality. If more information is required, please contact info@wicell.org					
FGA						
TPOX						
D8S1179						
vWA						
Amelogenin						
Penta_D						
CSF1PO						
D16S539						
D7S820						
D13S317						
D5S818						
Penta_E						
D18S51						
D21S11						
TH01						
D3S1358						
Allelic Polymorphisms	26	25	26	28	23	28
Matches ²	109233		109247	See Results	109159	See Results
Comments						

¹ CTR No.: Characterization Test Request Number; also known as a laboratory accessioning number.

² The STR profile of the sample(s) listed are a 100% match for the given sample unless otherwise specified.



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Assay Description: Short Tandem Repeat (STR) analysis is performed using the PowerPlex® 16 HS System by Promega™. Results are reported as 13 CODIS STR markers, Amelogenin for sex determination and two low-stutter, highly discriminating pentanucleotide STR markers.

Results: The genotypic profiles comprise a range of 23-28 allelic polymorphisms across the 15 STR loci analyzed. Samples 109232 and 109197 are a 100% match to each other and to 109158, 108996, 108982, 108953, 108864, 108863, 108862, 108861, 108816, 108815, and additional profiles. Additional matches can be provided upon request.

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 suggest 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 ~2-4%.

10/6/2025	10/6/2025	10/8/2025
<div>X Amber Kuhn</div> <div>Tech #1 Characterization Signed by: Kuhn, Amber</div>	<div>X Steph Dos Santos</div> <div>Tech #2 Characterization Signed by: Dos Santos, Stephany</div>	<div>X Hunter Hefti</div> <div>QA Review Quality Assurance Signed by: Hefti, Hunter</div>

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Mycoplasma Assay Report

PCR-based assay performed by WiCell
WiCell Stem Cell Bank, WiCell
30Sep25

Form SOP-83.01
Version 7.0

Sample Name	Result	Interpretation
PENN159i-M14-4-DB36347 p19 (109247)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
PENN166i-M15-4-DB36113 p15 (109234)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
PENN162i-M14-11-DB36340 p20 (109233)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
CVCL_C7VJ-WB69026 p49 (109232)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
PENN139i-M5-4-DB35092 p29 (109221)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
CVCL_C7UX-WB69034 p49 (109197)	Negative	Band was not seen at 270bp, indicating the absence of mycoplasma.
Positive (+) Control	Positive	
Negative (-) Control	Negative	

Assay Description

Sample is tested for presence of mycoplasma using EZ-PCR™ Mycoplasma Detection Kit (Sartorius).

9/30/2025	10/1/2025	10/1/2025
<div>X Nina Montgomery</div> <div>Tech #1 Characterization Signed by: Montgomery, Nina</div>	<div>X Steph Dos Santos</div> <div>Tech #2 Characterization Signed by: Dos Santos, Stephany</div>	<div>X Dawn Graham</div> <div>QA Review Quality Assurance Signed by: Graham, Dawn</div>

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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 #: 22101452
DATE RECEIVED: 27-Oct-22
TEST INITIATED: 04-Nov-22
TEST COMPLETED: 18-Nov-22

SAMPLE NAME / DESCRIPTION: CBiPS-6.13-PCBC-WB68020
WC007i-FX13-2-WB68026
PENN142i-M3-19-DB35077
PENN155i-M3-21-DB35100
PENN160i-M6-6-DB35109
PENN073i-133-8-DB36093
PENN166i-M15-4-DB36113
PENN072i-187-3-DB36097
PENN040i-134-2-DB34912
PENN079i-33-1-DB34964

UNIQUE IDENTIFIER: N/A

TEST RESULTS:

# Tested	# Positives (Growth)	- Control
10	1	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: Sample marked as PENN155i-M3-21-DB35100 is positive

AUTHORIZED BY

DATE 21 Nov 2022

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.