



Certificate of Analysis

Thaw and Culture Details

Cell Line Name	WA01	
WiCell Lot Number	WB67656	
Provider/Client	University of Wisconsin – Laboratory of Dr. James Thomson	
Banked By	WiCell	
Thaw and Culture Recommendations	WiCell recommends thawing 1 vial into 3 wells of a 6 well plate using mTeSR™ Plus and Matrigel®.	
Protocol	WiCell Feeder Independent Pluripotent Stem Cell Protocol	
Culture Platform Prior to Freeze	Medium: mTeSR™ Plus	Matrix: Matrigel®
Passage Number	p22 Cells were cultured for 21 passages prior to freeze. Plated cells at thaw should be labeled passage 22.	
Date Vialled	25-May-2021	
Vial Label	WA01 p22 WB67656	
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	≥ 15 Undifferentiated Colonies prior to passage, ≤ 30% Differentiation prior to passage, and recoverable attachment after passage	Pass
Identity by STR	WiCell	PowerPlex 16 HS System by Promega™	Consistent with 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

Approval Date	WiCell Quality Assurance Approval
26-August-2021	<div>8/26/2021</div> <div>X JKG</div> <div>JKG WiCell Quality Assurance Signed by Gay Jenna</div>

Date Reported: Monday, June 21, 2021

Cell Line: WA01-WB67656

Submitted Passage #: 22

Date of Sample: 6/8/2021

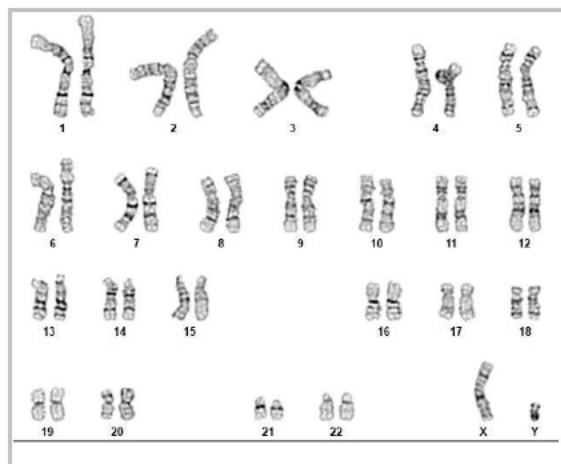
Specimen: Human ESC

Results: 46,XY

Cell Line Sex: Male

Reason for Testing: LOT_RELEASE

Investigator: WiCell Stem Cell Bank, WiCell



Cell: 45

Slide: G01

Slide Type: Karyotype

Total Counted: 20

Total Analyzed: 8

Total Karyogrammed: 4

Band Resolution: 400 - 450

Interpretation:

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

Completed by: Leah George, 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: 07Jun21, 08Jun21, 11Jun21
STR Amplification Date: 17Jun21

Form SOP-89.01
Version 5.0

Sample Name	STAN366i-282C2- WB67655 p19	WA01- WB67657 p22	WA01- WB67656 p22	PENN132i-131- 5-DB35044 p17
Label on tube	Identifying information has been redacted to protect donor confidentiality. If more information is required, please contact info@wicell.org		86570	Identifying information has been redacted to protect donor confidentiality. If more information is required, please contact info@wicell.org
FGA			20, 24	
TPOX			8, 11	
D8S1179			12, 13	
vWA			15, 17	
Amelogenin			X, Y	
Penta_D			10, 13	
CSF1PO			12, 13	
D16S539			9, 13	
D7S820			8, 12	
D13S317			8, 11	
D5S818			9, 11	
Penta_E			10, 12	
D18S51			17, 18	
D21S11			28, 32.2	
TH01			9.3, 9.3	
D3S1358			15, 15	
Allelic Polymorphisms			28	
Matches*	75318, 84404	67689, 74318, 86570	67689, 74318, 86550	
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: 07Jun21, 08Jun21, 11Jun21
STR Amplification Date: 17Jun21

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 25-28 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%.

6/18/2021	6/21/2021	6/22/2021
<div>X Amber Kuhn</div> <div>Tech #1 Characterization Signed by: Cytogenetics</div>	<div>X Callum Walker</div> <div>Tech #2 Characterization Signed by: Walker, Callum</div>	<div>X Dawn Graham</div> <div>QA Review Quality Assurance Signed by: Graham, Dawn</div>

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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 #: 21070812
DATE RECEIVED: 14-Jul-21
TEST INITIATED: 27-Jul-21
TEST COMPLETED: 10-Aug-21

SAMPLE NAME / DESCRIPTION:

CREM017i-SS19-1-WB67673
PENN042i-258-12-WB67671
UCSD239i-APP2-1-WB67672
STAN151i-303C3-DB35736
STAN248i-617C1-DB35488
STAN249i-617C2-DB35491
WA01-WB67657
WA01-WB67656
STAN366i-282C2-WB67655
SCR5803i-DB42982
SCR6101i-DB42990
SCR6904i-DB43007
SCR7301i-DB43010
HVRD001-A-WB67674
SCR8105i-DB43117
SCR8305i-DB43120
SCR8503i-DB43126
SCR8601i-DB43129
SCR8717i-DB43132
SCR8901i-DB43135

UNIQUE IDENTIFIER: N/A

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

PD #:

000053

TEST METHODOLOGY:

USP - Direct Transfer

Native Product Sterility Report



COMMENTS: Sample # 21070812

REVIEWED BY

A handwritten signature in blue ink, appearing to be "K", written over a horizontal line.

DATE

13 Aug 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.