



Thaw and Culture Details

Cell Line Name	NSC-H9
WiCell Lot Number	WB0309
Parent Material	NSC-H9-DB0002
Provider	Buck Institute for Research on Aging
Banked By	WiCell
Thaw and Culture Recommendations	WiCell recommends thawing 1 vial into 4 wells of a 6 well plate.
Culture Platform	Feeder Independent
	Medium: NSC Medium
	Matrix: Matrigel®
Protocol	WiCell Neural Stem Cell Protocol
Passage Number	p19 These cells were cultured for 18 passages prior to freeze. WiCell adds +1 to the passage number to best represent the overall passage number of the cells at thaw.
Date Viald	20-August-2014
Vial Label	NSC-H9 WB0309 p19 20Aug14
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.

Testing Performed by WiCell

Test Description	Test Provider	Test Method	Test Specification	Result
Karyotype by G-banding	WiCell	SOP-CH-003	Expected karyotype	Pass
Post-Thaw Viable Cell Recovery	WiCell	SOP-CH-305	≥ 15 Undifferentiated Colonies, ≤ 30% Differentiation and recoverable attachment after passage ¹	Pass
Identity by STR	UW Translational Research Initiatives in Pathology Laboratory	PowerPlex 16 HS System by Promega	Consistent with known profile	Pass
Sterility	Steris	ST/07	Negative	Pass
Mycoplasma	WiCell	SOP-QU-004	Negative	Pass
Verification of Neural Stem Cells	UW Waisman Center iPSC Core	Life Technologies™ Scientific Human Neural Stem Cell Immunocytochemistry Kit	Neural Stem Cell Marker Expression	Pass

¹Neural Stem Cells do not grow in colonies. Attachment is comparable to test specification.



Approval Date	Quality Assurance Approval
23-October-2017	<div>10/23/2017</div> <div>X RK</div> <div><small>RK Quality Assurance Signed by: Kremers, Erik</small></div>



Chromosome Analysis Report: 067073

Date Reported: Thursday, July 27, 2017

Cell Line: NSC-H9-WB0309 12568

Passage#: 19

Date of Sample: 7/17/2017

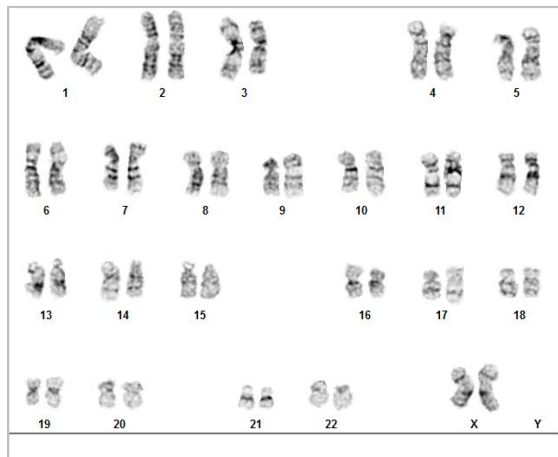
Specimen: Human Neural Stem Cell

Results: 46,XX

Cell Line Gender: Female

Reason for Testing: lot release testing

Investigator: [REDACTED]



Cell: 25

Slide: G01

Slide Type: Karyotype

Total Counted: 16

Total Analyzed: 6

Total Karyogrammed: 4

Band Resolution: 350 - 400

Interpretation:

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

This is a limited analysis, based on examination of sixteen cells with suboptimal band resolution (350-400). Standard analysis requires examination of twenty cells at 450 bands or greater. All available metaphase cells were evaluated.

Completed by: [REDACTED]

Reviewed and Interpreted by: [REDACTED]

A signed copy of this report is available upon request.

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 may not be relied upon by any other party without the prior written consent of the Director of the WiCell Cytogenetics Laboratory. The results of this assay are for research use only. If the results of this assay are to be used for any other purpose, contact the Director of the WiCell Cytogenetics Laboratory.

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Short Tandem Repeat Analysis

Department of Pathology and Laboratory Medicine
TRIP Laboratory (Molecular)
<http://www.pathology.wisc.edu/research/trip>

Sample Report:

12568-STR
Sample Name on Tube: 12568-STR
33.6 ng/μL, (A260/280=1.76)
Sample Type: Cells
Cell Count: ~1.3 million cells

Requestor:

WiCell Research Institute
Quality Department

Sample Date: N/A

Receive Date: 07/24/17
Assay Date: 07/25/17
File Name: STR 170727 wmr
Report Date: 07/31/17

STR Locus	STR Genotype Repeat #	STR Genotype
FGA	16-18,18.2,19,19.2,20,20.2,21,21.2,22, 22.2, 23, 23.2, 24, 24.2, 25, 25.2, 26-30, 31.2, 43.2, 44.2,45.2, 46.2	26,28
TPOX	6-13	10,11
D8S1179	7-18	8,14
vWA	10-22	17,17
Amelogenin	X,Y	X,X
Penta_D	2.2, 3.2, 5, 7-17	9,13
CSF1PO	6-15	11,11
D16S539	5, 8-15	12,13
D7S820	6-14	9,11
D13S317	7-15	9,9
D5S818	7-16	11,12
Penta_E	5-24	11,14
D18S51	8-10, 10.2, 11-13, 13.2, 14-27	13,13
D21S11	24,24.2,25,25.2,26-28,28.2,29,29.2, 30, 30.2,31, 31.2,32,32.2,33,33.2, 34,34.2,35,35.2,36-38	30,30
TH01	4-9,9.3,10-11,13.3	9.3,9.3
D3S1358	12-20	13,16

Results: Based on the 12568-STR cells submitted by WiCell QA dated and received on 07/24/17, this sample (Label on Tube: 12568-STR) exactly matches the STR profile of the human stem cell line WA09 comprising 24 allelic polymorphisms across the 15 STR loci analyzed.

Interpretation: No STR polymorphisms other than those corresponding to the human WA09 stem cell line were detected and 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. This result suggests that the 12568-STR sample submitted corresponds to the WA09 stem cell line and was not contaminated with any other human stem 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 stem cell lines is ~2-5%.

X_{RMB}

Digitally Signed on 07/31/17

TRIP Laboratory, Molecular

X_{WMR}

Digitally Signed on 07/31/17

, PhD, Director / Co-Director
UWHC Molecular Diagnostics Laboratory / UWSMPH TRIP Laboratory

Sterility Report

Biotest Laboratories, Inc.

Making life-saving products possible

**CORRECTED
REPORT**

WiCell Research Institute, Inc.
WiCell Quality Assurance
505 South Rosa Road, Suite 120
Madison, WI 53719

BIOTEST SAMPLE # 14110465

VALIDATION # NG

TEST PURPOSE NG

PRODUCT NSC-H9-WB0309 11053, WIC06i-07982-2-WB0313 11054, WIC05i-127-325-WB0312 11055, IISH10i-GM20920-WB0308 11056, WIC02i-02-05-WB15064 11057, WIC04i-127-33-WB15053 11058, WIC07i-07982-4-WB15086 11059, WIC03i-02-11E-WB15127 11060

PRODUCT LOT NA

STERILE LOT NA

BI LOT NA

STERILIZATION LOT NA

BI EXPIRATION DATE NA

STERILIZATION DATE NA

DATE RECEIVED 2014-11-07

STERILIZATION METHOD NA

TEST INITIATED 2014-11-10

SAMPLING BLDG / ROOM NA

TEST COMPLETED 2014-11-24

REFERENCE Processed according to LAB-003: Sterility Test Procedure

Eight (8) products were each divided between 40 mL TSB and 40 mL FTG. The samples were then cultured at 20-25 C and 30-35 C respectively and were monitored for a minimum of 14 days.

- ☒ USP
☐ BI Manufacturers Specifications
☐ Other

RESULTS	# POSITIVES	# TESTED	POSITIVE CONTROL	NEGATIVE CONTROL
Sterile	0	8	NA	2 Negatives

COMMENTS Report revised due to Customer request to correct one number in Product Name.

REVIEWED BY  DATE 12DEC14

Specific test results may not be indicative of the characteristics of any other samples from the same lot or similar lots. Liability is limited to the costs of the tests.

Biotest Laboratories • 9303 West Broadway Ave. • Brooklyn Park, MN 55445 • USA • (763) 315-1200

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Mycoplasma Detection Assay Report

Testing Performed by WiCell

Lot Release Testing

July 20, 2017

FORM SOP-QU-004.01

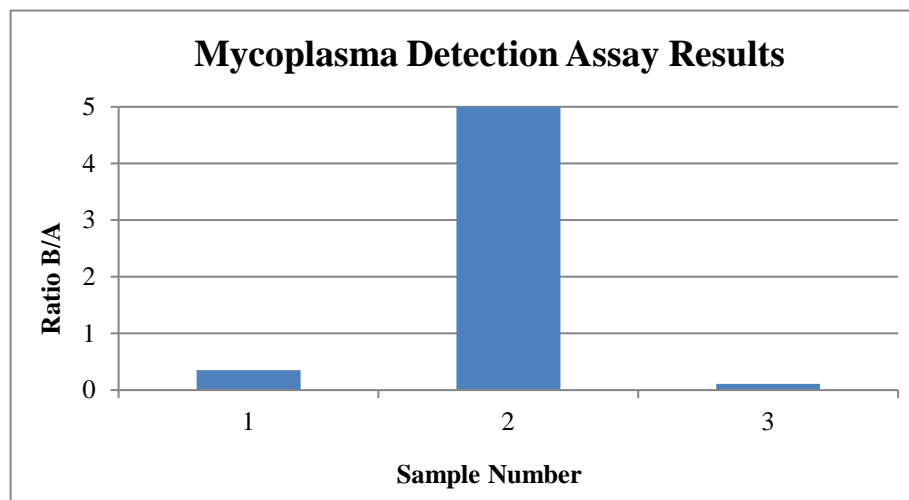
Version F Edition 02

Reported by: KR

Reviewed by: JB

BD Monolight 180

#	Sample Name	Reading A		A Ave	Reading B		B Ave	Ratio B/A	Result	Comments/Suggestions
		RLU1	RLU2		RLU1	RLU2				
1	NSC-H9-WB0309 12568	324	330	327	115	115	115	0.35	Negative	
2	Positive (+) Control	311	317	314	31629	31752	31691	100.93	Positive	
3	Negative (-) Control	604	618	611	68	67	67.5	0.11	Negative	

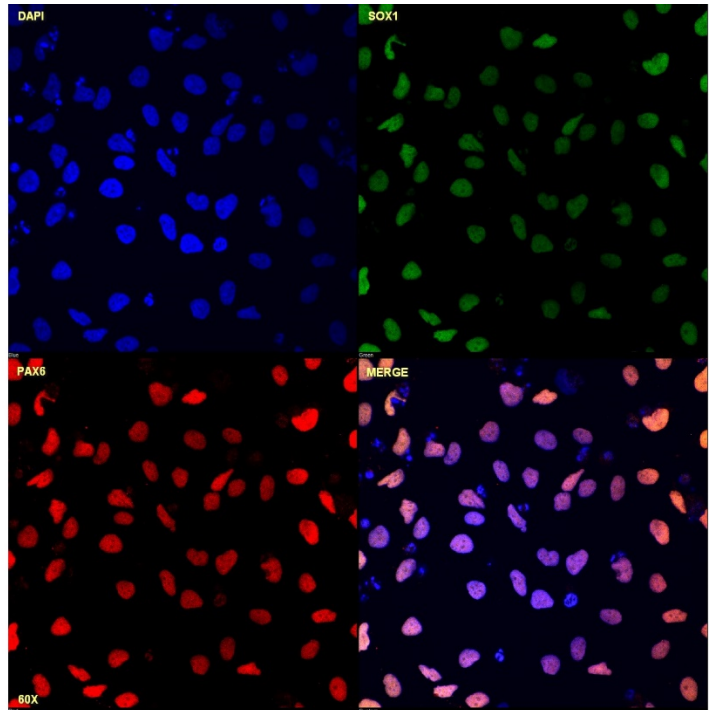
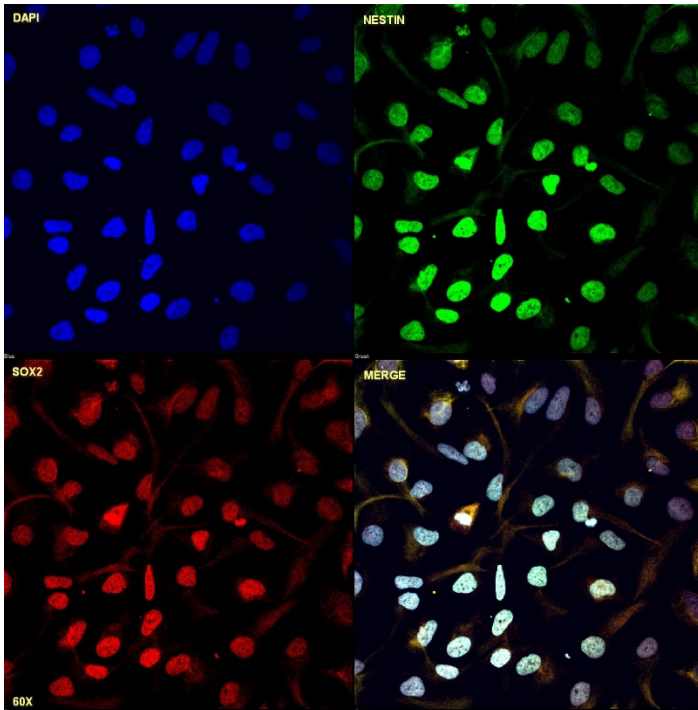


IMMUNOSTAINING REPORT

Cell line: NSC-H9-WB0309 T1041926

Methods: Cells (p21) were passaged onto matrigel coated cover slips in a 24 well plate and maintained following WiCell provided NSC maintenance protocol. Cells were fixed when reached ~70% confluency; stained using Life Technologies Cat# A24354 Human Neural Stem Cell Immunocytochemistry Kit. Images below were collected using a Nikon A1R-Si confocal laser scanning microscope (Plan Fluor 60x oil lens used).

Primary antibodies	Secondary antibodies
anti-NESTIN (host: mouse) A24345	Alexa Fluor® 488 donkey anti-mouse
anti-PAX6 (host: rabbit) A24340 Alexa Fluor®	Alexa Fluor® 555 donkey anti-rabbit
anti-SOX1 (host: goat) A24347 Alexa Fluor®	Alexa Fluor® 488 donkey anti-goat
anti-SOX2 (host: rabbit) A24339	Alexa Fluor® 555 donkey anti-rabbit



██████████, Waisman CMN core iPSC services, October 3rd, 2017

Verification of Neural Stem Cells

Sample 12568

RK 16Oct17