




Product Information and Testing

Product Information

| | |
|-------------------------------|--|
| Product Name | WA01 |
| Alias | H1 |
| Lot Number | WB0110 |
| Depositor | University of Wisconsin – Laboratory of Dr. James Thomson |
| Banked by | WiCell |
| Thaw Recommendation | Thaw 1 vial into 3 wells of a 6 well plate. |
| Culture Platform | Feeder Independent |
| | Medium: mTeSR1 |
| | Matrix: Matrigel |
| Protocol | WiCell Feeder Independent Protocol |
| Passage Number | p27 These cells were cultured for 26 passages prior to freeze, 14 of them in mTeSR1/Matrigel. WiCell adds +1 to the passage number at freeze so that the number on the vial best represents the overall passage number of the cells at thaw. |
| Date Viald | 16-December-2011 |
| Vial Label | WB0110 WA01 p27 MW 16DEC11 |
| 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 |
|--------------------------------|-------------------------------------|-----------------------------------|---|--------|
| Post-Thaw Viable Cell Recovery | WiCell | SOP-CH-305 | ≥ 15 Undifferentiated Colonies, ≤ 30% Differentiation and recoverable attachment after passage | Pass |
| Identity by STR | UW Molecular Diagnostics Laboratory | PowerPlex 16 HS System by Promega | Consistent with known profile | Pass |
| Sterility | Biotest Laboratories | ST/07 | Negative | Pass |
| Mycoplasma | WiCell | SOP-QU-004 | Negative | Pass |
| Karyotype by G-banding | WiCell | SOP-CH-003 | Expected karyotype | Pass |

| Date of Lot Release | Quality Assurance Approval |
|---------------------|---|
| 06-August-2013 | <div style="text-align: right;">8/6/2013</div> <div style="text-align: center;">  X AMC AMC Quality Assurance Signed by ██████████ </div> |

Short Tandem Repeat Analysis*

Sample Report: 10802-STR

Label on Tube: 10802-STR

Sample Date: 06/21/13

Received Date: 06/21/13

Requestor: WiCell Research Institute

Test Date: 06/26/13

File Name: 130627 BLB

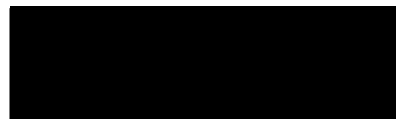
Report Date: 06/27/13

Sample Name: (label on tube) 10802-STR

Description: DNA Extracted by WiCell
256.5 ng/ μ L; 260/280 = 1.96

| Locus | Repeat # | STR Genotype |
|------------|-----------|--------------|
| D16S539 | 5, 8-15 | 9,13 |
| D7S820 | 6-14 | 8,12 |
| D13S317 | 7-15 | 8,11 |
| D5S818 | 7-15 | 9,11 |
| CSF1PO | 6-15 | 12,13 |
| TPOX | 6-13 | 8,11 |
| Amelogenin | NA | X,Y |
| TH01 | 5-11 | 9.3,9.3 |
| vWA | 11, 13-21 | 15,17 |

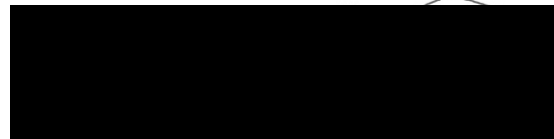
Comments: Based on the 10802-STR DNA dated and received on 06/21/13 from WI Cell, this sample (Label on Tube: 10802-STR) matches exactly the STR profile of the human stem cell line WA01 (H1) comprising 15 allelic polymorphisms across the 8 STR loci analyzed. No STR polymorphisms other than those corresponding to the human WA01 (H1) 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. These results suggest that the 10802-STR DNA sample submitted corresponds to the WA01 (H1) stem cell line and was not contaminated with any other human stem cells or a significant amount of mouse feeder layer cells. Sensitivity limits for detection of STR polymorphisms unique to either this or other human stem cell lines is ~5%.



7/1/13

Date

Molecular Diagnostics Laboratory


06/21/13
no...

Date

Molecular Diagnostics Laboratory

* Testing to assess engraftment following bone marrow transplantation was accomplished by analysis of human genetic polymorphisms at STR loci. This methodology has not yet been approved by the FDA and is for investigational use only.

Sterility Report

Biotest Laboratories, Inc.

Making life-saving products possible

WiCell Research Institute, Inc.
WiCell Quality Assurance

BIOTEST SAMPLE # 13060494

VALIDATION # NG

TEST PURPOSE NG

PRODUCT Please see packing list under product name.

PRODUCT LOT NA

STERILE LOT NA

BI LOT NA

STERILIZATION LOT NA

BI EXPIRATION DATE NA

STERILIZATION DATE NA

DATE RECEIVED 2013-06-11

STERILIZATION METHOD NA

TEST INITIATED 2013-06-12

SAMPLING BLDG / ROOM NA

TEST COMPLETED 2013-06-26

REFERENCE Processed according to LAB-003: Sterility Test Procedure

5 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 | 5 | NA | 2 Negatives |

COMMENTS NA

REVIEWED BY

DATE

26 JUN 13

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.

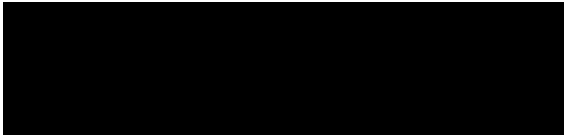
A subsidiary of STERIS Corporation



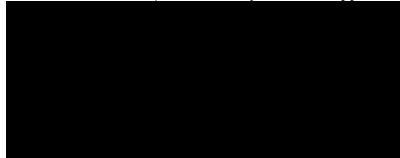


WiCell Research Institute

Packing Slip



Sent to:
Sterility Testing Services
BiotestLabs, Sterility Testing Services



Date:
05Jun13

| Product Name | Condition |
|----------------------------------|-----------|
| [Redacted] WA01-WB0110 #10790 | -80 |

13060494 *SK*
JUN 12 2013





Mycoplasma Report

Testing Performed by WiCell

Mycoplasma LRT/CDM Lab 6-21-2013

FORM SOP-QU-004.01

Version B

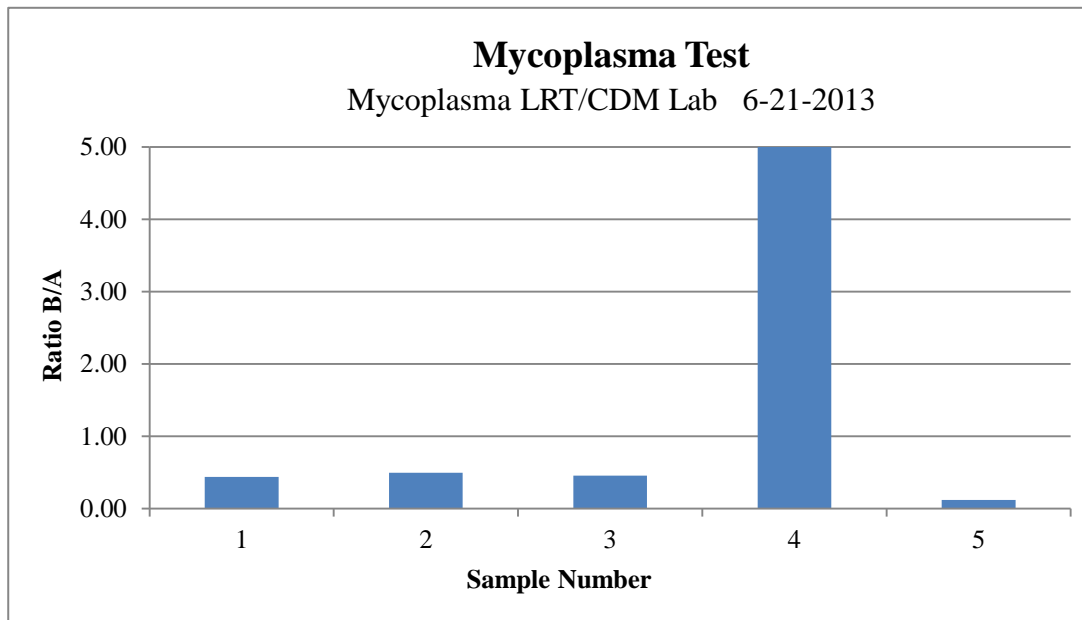
Edition 01

Assay performed and reported by: MWS

Reviewed by: JB

Equipment: Monolight 3010

| Sample Number and ID | Reading A | | A Average | Reading B | | B Average | Ratio B/A | Mycoplasma Results | Comments/Suggestions |
|------------------------|-----------|------|--------------|-----------|-------|--------------|--------------|--------------------|----------------------|
| | A1 | A2 | | B1 | B2 | | | | |
| 1 10798 LK | 398 | 385 | 391.5 | 169 | 173 | 171 | 0.44 | Negative | |
| 2 10802 LK | 454 | 457 | 455.5 | 228 | 223 | 225.5 | 0.50 | Negative | |
| 3 10800 MWS | 561 | 561 | 561 | 253 | 259 | 256 | 0.46 | Negative | |
| 4 Positive (+) Control | 504 | 508 | 506 | 40286 | 41560 | 40923 | 80.88 | Positive | |
| 5 Negative (-) Control | 1133 | 1169 | 1151 | 145 | 134 | 139.5 | 0.12 | Negative | |



Date Reported: Friday, August 02, 2013

Cell Line: WA01-WB0110 10819

Passage#: 28

Date of Sample: 7/29/2013

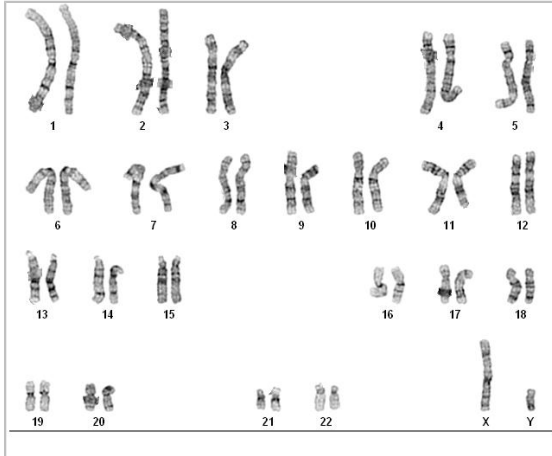
Specimen: hESC

Results: 46,XY

Cell Line Gender: Male

Reason for Testing: Lot release testing

Investigator: [REDACTED] WiCell CDM



Cell: 3

Slide: 3

Slide Type: Karyotype

Total Counted: 20

Total Analyzed: 8

Total Karyotyped: 4

Band Resolution: 450 - 500

Interpretation:

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

Completed by: [REDACTED] CG(ASCP)

Reviewed and Interpreted by: [REDACTED], PhD, FACMG

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.