

# **Certificate of Analysis for NR-14821**

### Mycobacterium tuberculosis, Strain HN878, Gamma-Irradiated Whole Cells

## Catalog No. NR-14821

This reagent is the tangible property of the U.S. Government.

**Product Description:** *Mycobacterium tuberculosis* (*M. tuberculosis*), strain HN878 was grown to late-log phase in glycerol-alanine-salts medium and inactivated by exposure to 2.4 mRads of ionizing gamma irradiation using a <sup>137</sup>Cs source. Confirmation of inactivation was performed by Alamar Blue assay. A dose of 2.4 mRads of gamma irradiation kills *M. tuberculosis* to a 10<sup>20</sup> degree of certainty while maintaining 93% to 95% of the biological activity of the enzymes.

Lot: 63291508 Manufacturing Date: 21OCT2014

Production and QC testing were performed by Colorado State University (CSU). The CSU documentation for bulk lot 14.HN878.9.16.7.WCg. is attached. Each vial contains 10 g *Mycobacterium tuberculosis*, strain HN878, gamma-irradiated whole cells.

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#### WORK SHEET FOR γ-IRRADIATED CELLS

# **General Information** Lot Number: 14.HN878.9.16.7.WCg Species: M. tuberculosis Strain: HN878 **Growth Conditions:** Medium:\_\_\_ GAS # of Fernbachs: 16 # of Roller bottles: 0 Inoculation Date: 9.16.14 Harvest Date: 9.30.14 SOP # used for Harvest: PP003.3 1/11/13 version Wet Weight: 102.2g Date irradiated: 10.21.14 By: JB Alamar Blue QC Information Date Checked: 1.9.15 Date Started: 1.7.15 Positive Control: Positive X Negative Sample: Positive\_\_\_\_\_ Negative\_\_X\_\_ **Aliquot Information** 102.2g in 230ml falcon tube

(Laboratory Supervisor)

| .75     | .75 0.75  | .75 0.75  | .81 0.76   
   
   |   
   
  | 48hr Minus Blank   
   
   | 11 OD:0001  
   
  | 00.0 00.00  |  
  |   | 10.0 70.  |   | 8hr Average   | 11 OD.0001   
  | 00.0 00.00   | 0.07 0.01   |      |
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   | $\vdash$  
   
  |   |  
  |   |   |   |   | 00. do   
  |  |   |      |
|         |   |   |  
   
   |   
   
  |  
   
   | 10. do  
   
  | 0.0   | 0.0  
  | 0.0   | 0.9   |   |   | 10. do   
  | 0.0  | 0.90  |      |
| 0.85    | 0.86  | 0.86  | 3.93   
   
   |   
   
  |  
   
   | 0D.1  
   
  | 01.0  | 0.11   
  | 0.11  | 3.18  |   | 48  | 0D .1  
  | 0.11   | 3.18  |      |
| 1-9-15. |   |   |  
   
   |   
   
  |  
   
   |   
   
  |   | Sample   
  |   | Pos. Cont.  |   |   |  
  | OD.001         OD.001<  | Pos. Ctrl.  |      |
|         |   |   |  
   
   |   
   
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  |   |   |   |   |  
  |  |   |      |
| 0.74    | 0.74  | 0.74  | 0.74   
   
   |   
   
  |  
   
   | OD.0001   
   
  | 0.00  | 0.00   
  | 0.00  | 0.01  |   |   | OD.0001  
  | 00.00  | 0.01  |      |
| 0.74    | 0.74  | 0.74  | 0.78   
   
   |   
   
  | ×  
   
   | 100. do   
   
  | 0.00  | 0.00   
  | 0.00  | 0.04  |   |   | 100. do  
  | 0.00   | 0.04  |      |
| 0.74    | 0.74  | 0.75  | 1.13   
   
   |   
   
  | 24hr Minus Blan  
   
   | 10. do  
   
  | 0.00  | 0.01   
  | 0.01  | 0.40  |   | hr Average  | 10. do   
  | 0.01   | 0.40  |      |
| 0.80    | 0.81  | 0.81  | 3.34   
   
   |   
   
  |  
   
   | 24hr  
   
  | 1. do   | 90.0   
  | 0.07  | 0.08  | 2.60  |   | 24   
  | 0D .1  | 0.07  | 2.60 |
| 1-8-15. |   |   |  
   
   |   
   
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   |   
   
  |   | Sample   
  |   | Pos. Cont.  |   |   |  
  | Sample   | Pos. Ctrl.  |      |
| 2       | 4   | 4   | 3  
   
   | Г   
   
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  | 2   | -   |   |   |  
  | 1  | 1   |      |
| 0.7     | 0.7   | 0.7   | 0.7  
   
   |   
   
  | Initial Minus Blank  
   
   | ,   
   
  | OD.0001   | 0.0  
  | 0.0   | 0.0   | 0.0   |   | ΙH   
  | OD.0001  | 0.0   | 0.01 |
| 0.74    | 0.73  | 0.73  | 0.73   
   
   |   
   
  |  
   
   |   
   
  | 0D .001   | 0.02   
  | 0.01  | 0.01  | 0.01  |   |  
  | OD .001  | 0.01  | 0.01 |
| 0.73    | 0.73  | 0.73  | 0.74   
   
   |   
   
  |  
   
   | 10. OD .1. OD   
   
  | 0.01  | 0.01   
  | 0.01  | 0.05  |   | Initial Average   | 10. do   
  | 0.01   | 0.02  |      |
| 92.0    | 0.78  | 0.78  | 0.76   
   
   |   
   
  |  
   
   |   
   
  | 0.04  | 90.0   
  | 90.0  | 0.05  |   |   | 1. do  
  | 50.0   | 0.05  |      |
| 1-7-15. | 78.9.16.7.WCg   |   |  
   
   |   
   
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   |   
   
  |   | Sample   
  |   | Pos. Cont.  |   |   |  
  | Sample   | Pos. Ctrl.  |      |
|         | . 0.76 0.73 0.74 0.72 1-8-15. 0.80 0.74 0.74 0.74 0.74 0.74 | . 0.76 0.73 0.74 0.72 1.815 0.80 0.74 0.73 0.74 0.75 0.81 0.74 0.74 0.74 0.75 0.80 0.78 0.79 0.79 0.81 0.79 0.79 0.79 | 0.76         0.73         0.73         0.74         0.72         0.80         0.74 <th< td=""><td>0.76         0.73         0.74         0.72         0.74         0.72         0.74         0.73         0.74         0.73         0.74         0.73         0.74         <th< td=""><td>0.76         0.73         0.74         0.72         0.74         0.72         0.74         0.73         0.74         0.73         0.74         <th< td=""><td>0.76         0.73         0.74         0.72         0.80         0.74         <th< td=""><td>  0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74  </td><td>  0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.75  </td><td>  0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74 
 0.74  </td><td>  0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.80   0.74   0.75  </td><td>  0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.78   0.74   0.75   0.78   0.74   0.75   0.78   0.75   0.78   0.75   0.78   0.75   0.78   0.75  </td><td>  0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.80   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.75   0.75   0.85   0.75   0.86   0.75  </td><td>  0.76   0.73   0.74   0.72   0.74   0.72   0.74   0.75  </td><td>  1.9.1   1.9.1
  1.9.1   1.9.</td><td>  0.76   0.73   0.74   0.72   0.74   0.72   0.74   0.75  </td></th<></td></th<></td></th<></td></th<> | 0.76         0.73         0.74         0.72         0.74         0.72         0.74         0.73         0.74         0.73         0.74         0.73         0.74 <th< td=""><td>0.76         0.73         0.74         0.72         0.74         0.72         0.74         0.73         0.74         0.73         0.74         <th< td=""><td>0.76         0.73         0.74         0.72         0.80         0.74         <th< td=""><td>  0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74  </td><td>  0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.75  
0.75   0.75  </td><td>  0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74  </td><td>  0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.80   0.74   0.75  </td><td>  0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.78   0.74   0.75   0.78   0.74   0.75   0.78   0.75   0.78   0.75   0.78   0.75   0.78   0.75  </td><td>  0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.80   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.75   0.75   0.85   0.75   0.86   0.75  </td><td>  0.76   0.73   0.74   0.72   0.74   0.72   0.74   0.75  
0.75   0.75  </td><td>  1.9.1   1.9.</td><td>  0.76   0.73   0.74   0.72   0.74   0.72   0.74   0.75  </td></th<></td></th<></td></th<> | 0.76         0.73         0.74         0.72         0.74         0.72         0.74         0.73         0.74         0.73         0.74 <th< td=""><td>0.76         0.73         0.74         0.72         0.80         0.74         <th< td=""><td>  0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74  
0.74   0.74  </td><td>  0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.75  </td><td>  0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74  </td><td>  0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.80   0.74   0.75  </td><td>  0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.78   0.74   0.75   0.78   0.74   0.75   0.78   0.75   0.78   0.75   0.78   0.75   0.78   0.75  </td><td>  0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.80   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.75   0.75   0.85   0.75   0.86   0.75  
0.75   0.75  </td><td>  0.76   0.73   0.74   0.72   0.74   0.72   0.74   0.75  </td><td>  1.9.1   1.9.</td><td>  0.76   0.73   0.74   0.72   0.74   0.72   0.74   0.75  </td></th<></td></th<> | 0.76         0.73         0.74         0.72         0.80         0.74 <th< td=""><td>  0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74  </td><td>  0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74  
0.74   0.74   0.74   0.75  </td><td>  0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74  </td><td>  0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.80   0.74   0.75  </td><td>  0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.78   0.74   0.75   0.78   0.74   0.75   0.78   0.75   0.78   0.75   0.78   0.75   0.78   0.75  </td><td>  0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.80   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.75   0.75   0.85   0.75   0.86   0.75 
 0.75  </td><td>  0.76   0.73   0.74   0.72   0.74   0.72   0.74   0.75  </td><td>  1.9.1   1.9.</td><td>  0.76   0.73   0.74   0.72   0.74   0.72   0.74   0.75  </td></th<> | 0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74 | 0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.75  
0.75   0.75 | 0.76   0.73   0.74   0.72   0.73   0.74   0.72   0.80   0.74 | 0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.80   0.74   0.75 | 0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.78   0.74   0.75   0.78   0.74   0.75   0.78   0.75   0.78   0.75   0.78   0.75   0.78   0.75 | 0.76   0.73   0.74   0.72   0.78   0.74   0.72   0.80   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.74   0.75   0.75   0.85   0.75   0.86   0.75 | 0.76   0.73   0.74   0.72   0.74   0.72   0.74   0.75  
0.75   0.75 | 1.9.1   1.9. | 0.76   0.73   0.74   0.72   0.74   0.72   0.74   0.75 |      |

24 0

		Pos.1	— — — — Pos.01	Linear (Sample .1)	Linear (Sample .01)	——— Linear (Pos .1)	— — – Linear (Pos .01.)	y = 0.0653x + 0.374	y = 0.0185x - 0.0038	y = 0.0011x + 0.0499	y = 1E-05x + 0.0095	
											09	
570/600 vs Time											30 40 50	Hours after setup
											10 20	
	4.00		3.50	3.00	2.50	um-Blank ge	619vA 1009\mn0 1.50	ζ <b>ς</b>		0.50	0.00	-0.50