

Plasmodium falciparum, Strain 3D7 (GL Clone)

Catalog No. MRA-1001

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

Product Description:

The GL clone of 3D7 stock parasites was amplified in a volunteer patient "L", who participated in a clinical trial in August 1995 at Walter Reed Army Institute of Research (WRAIR), USA. *P. falciparum*, strain 3D7 (GL Clone) (available as BEI Resources MRA-102) was cloned from the NF54 strain (available as BEI Resources MRA-1000) by limiting dilution. The parent NF54 isolate was derived from a patient living near Schipol Airport, Amsterdam, who had never left the Netherlands. MRA-1001 lot 70058154 was produced by cultivation of BEI Resources seed lot 58606906 in fresh human erythrocytes suspended in RPMI 1640 medium supplemented with 10% (v/v) heat-inactivated human serum (pooled Type A), 25 mM HEPES, 2 mM L-glutamine, 2 g/L D-glucose, 27 µg/mL hypoxanthine and 5 µg/mL gentamicin. The culture was incubated at 37°C in sealed flasks outgassed with a blood-gas atmosphere (90% N₂, 5% CO₂, 5% O₂) and monitored for parasitemia for 35 days. Every 1 to 3 days, uninfected, leukocyte-filtered, Type O erythrocytes in complete culture medium were added dropwise to the culture as needed and monitored for hematocrit.

Lot: 70058154

Manufacturing Date: 22FEB2023

BEI Resources is committed to ensuring digital accessibility for people with disabilities. This Certificate of Analysis contains complex tables and may not be fully accessible. Please let us know if you encounter accessibility barriers and a fully accessible document will be provided. E-mail: Contact@BEIResources.org. We try to respond to feedback within 24 hours.

TEST	SPECIFICATIONS	RESULTS
Identification by Giemsa Stain Microscopy¹	Blood-stage parasites present	Blood-stage parasites present
Antimalarial Susceptibility Profile (<i>in vitro</i>)¹ Half-maximal Inhibitory Concentration (IC ₅₀) by SYBR Green I [®] drug sensitivity assay ²		
Chloroquine	Report results	8.6 ± 0.2 nM
Artemisinin	Report results	11.6 ± 0.3 nM
Quinine	Report results	70.3 ± 3.2 nM
Cycloguanil	Report results	13.0 ± 0.6 nM
Pyrimethamine	Report results	34.0 ± 3.9 nM
Sulfadoxine	Report results	278000 ± 51500 nM
Genotypic Analysis¹ Sequencing of Merozoite Surface Protein 2 (MSP2) gene (~ 800 base pairs)	Consistent with <i>P. falciparum</i>	Consistent with <i>P. falciparum</i> (Figure 1)
Level of Parasitemia by Giemsa Stain Microscopy Pre-freeze (35 days post-infection) ³		
Ring-stage parasitemia	Report results	2.57%
Total parasitemia	≥ 2%	4.37%
Post-freeze (2 days post-infection) ¹		
Ring-stage parasitemia	Report results	5.98%
Total parasitemia	≥ 1%	6.59%
Viability (2 days post-infection)¹	Growth in infected red blood cells	Growth in infected red blood cells
Sterility (21-day incubation)¹ Harpo's HTYE broth, 37°C and 26°C, aerobic ⁴	No growth	No growth
Trypticase soy broth, 37°C and 26°C, aerobic	No growth	No growth
Sabouraud broth, 37°C and 26°C, aerobic	No growth	No growth
DMEM with 10% FBS, 37°C, aerobic	No growth	No growth
Sheep blood agar, 37°C, aerobic	No growth	No growth
Sheep blood agar, 37°C, anaerobic	No growth	No growth
Thioglycollate broth, 37°C, anaerobic	No growth	No growth

TEST	SPECIFICATIONS	RESULTS
Mycoplasma Contamination¹ DNA detection by PCR	None detected	None detected

¹Testing completed on vial, post-freeze material

²A SYBR Green I[®] anti-malarial drug sensitivity assay in 96-well plates was used to determine IC₅₀ values of an active (> 70% ring stage) parasite culture in the presence of each antimalarial drug [Hartwig, C. L., et al. "XI: I. SYBR Green I[®]-Based Parasite Growth Inhibition Assay for Measurement of Antimalarial Drug Susceptibility in *Plasmodium falciparum*." In *Methods in Malaria Research Sixth Edition*. (2013) Moll, K., et al. (Ed.), EVIMalaR, pp. 122-129. *Methods in Malaria Research Sixth Edition* is available on the [BEI Resources website](#).]

³Testing completed on bulk material prior to vialing and freezing

⁴Atlas, Ronald M. *Handbook of Microbiological Media*. 3rd ed. Ed. Lawrence C. Parks. Boca Raton: CRC Press, 2004, p. 798.

Figure 1: MRA-1001 MSP2 Sequence

```
GAATATGGCAAAGATAAAAACAAGTGTGCTGAAATTAACAACAATAATTTATTTATTTGAAGCAATATTACTAGAGTTATTTAAGAGGGATGTTGCT
GCTCCACAGTTTTCTTTGTTACCATCGGTACATTCCTTTTACTATCAGAAGTATTTGTGGATGATTATTTCTAGAACCATGCATATGTCCATGTT
GTCCTGTACCTTTATTTCTCTGGTGCAGATTGTAATTCGGGGGATTCAGTTTGTTCGGCTGTTGGAGCAGAATTTTCAGCTTGTTCAGGTTGTGCAGT
AGGACTTTTAGTGTCTGCATCTTGAGTGGGTGGAACATTTGATTTAGTTTGGAGTCTTGTGGAACATTTGAGTTATTTGAGTTTCTTTATTTGCT
TGATTTGGTTCTTGAACCTCTCCTTTACCTTTTGGATTTGTTTCGGCATTTTTATGATTTGGATTTCTGAAGAGGTACTGGTAGATGCTTCTGCAT
CATTAGTAGTTGTGGTAGTTGTGGTAGTTTGGTAGTTGTGGTAGTAGCGGGAGTACTTGAACCTCCCTCAGCATCTGCACCATTACCATCACCAGA
ACCAGCACTACCACCAGCACTACCACCAGCACTACCACCAGCACTACCACCAGCACTACCACCAGCACTACCACCAGCACTACCACCAGCACTACCAGTAGAAGGCTTACTT
TCTGCCATACTTCTCCTTATACTCATATTATAAGCATTTGTTAATGAATGTGTTGCTATATTTACTTTTCAATTTTTAATATTAAAGGTAAACAAAATAA
AGAAATTTTATAAYARACAATGTTTTTAATTACC
```

/Sonia Bjorum Brower/

Sonia Bjorum Brower

22 MAY 2023

Technical Manager or designee, ATCC Federal Solutions

ATCC[®], on behalf of BEI Resources, hereby represents and warrants that the material provided under this certificate has been subjected to the tests and procedures specified and that the results described, along with any other data provided in this certificate, are true and accurate to the best of ATCC[®]'s knowledge.

ATCC[®] is a trademark of the American Type Culture Collection.

You are authorized to use this product for research use only. It is not intended for human use.

