

***Plasmodium falciparum*, Strain 7G8**

Catalog No. MRA-926

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

Product Description:

Plasmodium falciparum (*P. falciparum*), strain 7G8 was cloned from the IMTM22 strain by limiting dilution. The original IMTM22 strain was isolated from a 12-year-old male near Manaus, Brazil in 1980. MRA-926 was produced by cultivation of BEI Resources MR-MRA-926 lot 58422570 in fresh human erythrocytes suspended in RPMI 1640 medium, adjusted to contain 10% (v/v) heat-inactivated human serum (pooled Type A), 25 mM HEPES, 2 mM L-glutamine, 4 g/L D-glucose, 0.005 µg/mL hypoxanthine and 2.5 µg/mL gentamicin. The culture was incubated at 37°C in sealed flasks outgassed with blood-gas atmosphere (90% N₂, 5% CO₂, 5% O₂) and monitored for parasitemia daily for 15 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: 70033465

Manufacturing Date: 02APR2020

TEST	SPECIFICATIONS	RESULTS
Identification by Giemsa Stain Microscopy ¹	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 Artemisinin Quinine Cycloguanil Pyrimethamine Sulfadoxine	Report results Report results Report results Report results Report results Report results	52.1 ± 1.2 nM 4.7 ± 0.3 nM 83.1 ± 5.7 nM 844.8 ± 38.9 nM 45680 ± 1052 nM 336000 ± 23229 nM
Genotypic Analysis ¹ Sequencing of Merozoite Surface Protein 2 (MSP2) gene (~ 710 base pairs) MSP2 PCR amplicon analysis	≥ 99% sequence identity to <i>P. falciparum</i> , strain 7G8 (GenBank: ABGZ02000545) ~ 600-900 base pair amplicon	99.8% sequence identity to <i>P. falciparum</i> , strain 7G8 (GenBank: ABGZ02000545) (Figure 1) ~ 900 base pair amplicon
Level of Parasitemia by Giemsa Stain Microscopy Pre-freeze (15 days post-infection) ³ Ring-stage parasitemia Total parasitemia Post-freeze (4 days post-infection) ¹ Ring-stage parasitemia Total parasitemia	Report results ≥ 2% Report results ≥ 1%	2.46% 4.10% 1.04% 2.61%
Viability (post-freeze; 4 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 25°C, aerobic ⁴ Trypticase soy broth, 37°C and 25°C, aerobic Sabouraud broth, 37°C and 25°C, aerobic DMEM with 10% FBS, 37°C, aerobic Sheep blood agar, 37°C, aerobic Sheep blood agar, 37°C, anaerobic Thioglycollate broth, 37°C, anaerobic	No growth No growth No growth No growth No growth No growth No growth	No growth No growth No growth No growth No growth No growth No growth
Mycoplasma Contamination ¹ 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. Available at: <https://www.beiresources.org/Publications/MethodsInMalariaResearch.aspx>.]

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-926 MSP2 Sequence

```
TTAAAAATGA AAGTAAATAT AGCAACACAT TCATAAACAA TGCTTATAAT ATGAGTATAA GGAGAAGTAT GGCAGAAAGT
AATCCTTCTA CTGGTGCTGG TGGTAGTGGT AGTGCTGGTG GTAGTGGTAG TGCTGGTGGT AGTGGTAGTG CTGGTGGTAG
TGGTAGTGCT GGTGGTAGTG GTAGTGCTGG TTCTGGTGAT GGTAATGGTG CTAATCCTGG TGCAGATGCT GAGAGAAGTC
CAAGTACTCC CGCTACTACC ACAACTACCA CAACTACTAA TGATGCAGAA GCATCTACCA GTACCTCTTC AGAAAAATCCA
AATCATAATA ATGCCGAAAC AAATCCAAAA GGTAAAGGAG AAGTTCAAAA ACCAAATCAA GCAAATAAAG AAAC TCAAAA
TAACTCAAAAT GTTCAACAAG ACTCTCAAAC TAAATCAAAT GTTCCACCCA CTCAAGATGC AGACACTAAA AGTCCTACTG
CACAACCTGA ACAAGCTGAA AATTCTGCTC CAATAGCCGA ACAAACTGAA TCCCCCGAAT TACAATCTGC ACCAGAGAAT
AAAGGTACAG GACAACATGG ACATATGCAT GGTCTAGAA ATAATCATCC ACAAATACT TCTGATAGTC AAAAAGAATG
TACCGATGGT AACAAAGAAA ACTGTGGAGC AGCACCATCC CTCTTAAGTA ACTCTAGTAA TATTTGCTTC A
```

/Heather Couch/
Heather Couch

23 JUL 2020

Program 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.

