

Plasmodium falciparum, Strain NF54 (Patient Line E)

Catalog No. MRA-1000

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Product Description:

The E line of NF54 stock parasites was amplified in a volunteer patient "E," who participated in a clinical trial in 1995 at Walter Reed Army Institute of Research (WRAIR). The parent NF54 strain of *Plasmodium falciparum* (*P. falciparum*) was isolated from a patient living near an airport in the Netherlands, who had never left the country. MRA-1000 was produced by cultivation of BEI Resources seed lot 70048120 in fresh human erythrocytes suspended in RPMI 1640 medium adjusted to contain 10% (v/v) heat-inactivated human serum (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 propagated in human Type O erythrocytes at 37°C in sealed flasks outgassed with a blood-gas atmosphere (90% N₂, 5% CO₂, 5% O₂) and monitored for parasitemia for 8 days. Every 1 to 2 days, uninfected, leukocyte-filtered, Type O erythrocytes in complete culture medium were added dropwise as needed to maintain 1% to 3% hematocrit. The culture was harvested when the total parasitemia reached ≥ 2% to produce this lot. Quality control testing was completed under propagation conditions unless otherwise noted.

Lot: 70084402

Manufacturing Date: 24JUL2026

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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		
Chloroquine	Report results	14.7 ± 2.0 nM
Artemisinin	Report results	11 ± 0.8 nM
Quinine	Report results	66.3 ± 7.6 nM
Cycloguanil	Report results	53.6 ± 8.7 nM
Pyrimethamine	Report results	162.7 ± 37.8 nM
Sulfadoxine	Report results	381800 ± 35215 nM
Genotypic Analysis^{1,2} Sequencing of Merozoite Surface Protein 2 (MSP2) gene (~ 720 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 (8 days post-infection) ³		
Ring-stage parasitemia	Report results	3.8%
Total parasitemia	≥ 2%	5.1%
Post-freeze (2 days post-infection) ¹		
Ring-stage parasitemia	Report results	2.4%
Total parasitemia	≥ 1%	4.5%
Viability (2 days post-infection)¹	Growth in infected red blood cells	Growth in infected red blood cells
Sterility (14-day incubation)¹		
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
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 vialled, post-freeze material.

²Primer sequences and conditions for PCR are available upon request.

³Testing completed on bulk material prior to vialing and freezing.

Figure 1: MRA-1000 MSP2 Sequence

ATTAAAAATGAAAGTAAATATAGCAACACATTTCATAAAACAATGCTTATAATATGAGTATAAGGAGAAGTATGGCAGAAAGTAAGCCT
TCTACTGGTGCCTGGTGGTAGTGCTGGTGGTAGTGCTGGTGGTAGTGCTGGTGGTAGTGCTGGTGGTAGTGCTGGTGGKAGTGCTGGT
TCTGGTGATGGTAATGGTGCAGATGCTGAGGGAAGTTC AAGTACTCCCGCTACTACCACAAC TACCAAAAC TACCACAAC TACCACA
ACTACTAATGATGCAGAAGCATCTACCAGTACCTCTTCAGAAAAATCCAAATCATAAAAATGCCGAAACAAATCCAAAAGGTAAAGGA
GAAGTTCAGAACCCAAATCAAGCAAATAAAGAACTCAAAATAACTCAAATGTTCAACAAGACTCTCAAAC TAAATCAAATGTTCCA
CCCAC TCAAGATGCAGACACTAAAAGTCC TACTGCACAACCTGAACAAGCTGAAAAATTCTGCTCCAACAGCCGAACAAACTGAATCC
CCCGAATTACAATCTGCACCAGAGAAATAAAGGTACAGGACAACATGGACATATGCATGGTTC TAGAAATAATCATCCACAAAATACT
TCTGATAGTCAAAAAGAATGTACCGATGGTAACAAAGAAAAC TGTGGAGCAGCAACATCCCTCTTAAATAACTCTAGTAATATTGCT
TCAATAAATAAATTTGTTGTTTTAATTCAGCAACACTTGTTTTATCTTTTGCCATA

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