

**Plasmodium falciparum, Strain NF54::DICRE**

**Catalog No. MRA-1314**

**Product Description:**

*Plasmodium falciparum* (*P. falciparum*), strain NF54::DiCre is a derivative of the NF54 strain with the rapamycin-induced dimerized Cre recombinase (DiCre) system integrated into the *pfs47* locus via CRISPR/Cas9. MRA-1314 was produced by cultivation of the BEI Resources seed material 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, 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 blood-gas atmosphere (90% N<sub>2</sub>, 5% CO<sub>2</sub>, 5% O<sub>2</sub>) and monitored for parasitemia daily for 10 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: 70074523**

**Manufacturing Date: 14MAY2025**

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TEST	SPECIFICATIONS	RESULTS
<b>Identification by Giemsa Stain Microscopy</b> <sup>1</sup>	Blood-stage parasites present	Blood-stage parasites present
<b>Antimalarial Susceptibility Profile (<i>in vitro</i>)</b> <sup>1</sup> Half-maximal Inhibitory Concentration (IC <sub>50</sub> ) by SYBR green I <sup>®</sup> drug sensitivity assay <sup>2</sup> Chloroquine Artemisinin Quinine Cycloguanil Pyrimethamine Sulfadoxine	Report results Report results Report results Report results Report results Report results	8.4 ± 0.2 nM 58.5 ± 1.3 nM 48.2 ± 2.2 nM 20.6 ± 1.4 nM 76.2 ± 10.6 nM 344300 ± 23802 nM
<b>Genotypic Analysis</b> <sup>1</sup> Sequencing of Merozoite Surface Protein 2 (MSP2) gene (~ 790 base pairs)	≥ 99% sequence identity to <i>P. falciparum</i> , strain NF54::DICRE (GenBank: QFXU01000003.1)	100% sequence identity to <i>P. falciparum</i> , strain NF54::DICRE (GenBank: QFXU01000003.1) (Figure 1)
<b>Level of Parasitemia by Giemsa Stain Microscopy</b> Pre-freeze (10 days post-infection) <sup>3</sup> Ring-stage parasitemia Total parasitemia Post-freeze (2 days post-infection) <sup>1</sup> Ring-stage parasitemia Total parasitemia	Report results ≥ 2%  Report results ≥ 1%	2.17 % 3.53 %  3.19% 3.79%
<b>Viability (post-freeze; 4 days post-infection)</b> <sup>1</sup>	Growth in infected red blood cells	Growth in infected red blood cells
<b>Sterility (14-day incubation)</b> <sup>1</sup> Trypticase soy broth, 37°C and 26°C, aerobic Sabouraud broth, 37°C and 26°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
<b>Mycoplasma Contamination</b> <sup>1</sup> DNA detection by PCR	None detected	None detected

<sup>1</sup>Testing completed on vial, post-freeze material

<sup>2</sup>A SYBR Green I<sup>®</sup> anti-malarial drug sensitivity assay in 96-well plates was used to determine IC<sub>50</sub> 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<sup>®</sup>-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](#).]

<sup>3</sup>Testing completed on bulk material prior to vialing and freezing

**Figure 1: MRA-1314 MSP2 Sequence**

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CATTGTCTAT TATAAATTTT TTTATTTTTG TTACCTTTAA TATTAAAAAT GAAAGTAAAT ATAGCAACAC ATTCATAAAC
AATGCTTATA ATATGAGTAT AAGGAGAAGT ATGGCAGAAA GTAAGCCTTC TACTGGTGCT GGTGGTAGTG CTGGTGGTAG
TGCTGGTGGT AGTGCTGGTG GTAGTGCTGG TGGTAGTGCT GGTGGTAGTG CTGGTTCTGG TGATGGTAAT GGTGCAGATG
CTGAGGGAAG TTCAAGTACT CCCGCTACTA CCACAACACT CAAAACACT ACCAACTACCA CAACTACTAA TGATGCAGAA
GCATCTACCA GTACCTCTTC AGAAAATCCA AATCATAAAA ATGCCGAAAC AAATCCAAAA GGTAAGGAG AAGTTCAAGA
ACCAAATCAA GCAAATAAAG AAAC TCAAAA TAACTCAAAT GTTCAACAAG ACTCTCAAAC TAAATCAAAT GTTCCACCCA
CTCAAGATGC AGACACTAAA AGTCCTACTG CACAACCTGA ACAAGCTGAA AATTCTGCTC CAACAGCCGA ACAAACTGAA
TCCCCCGAAT TACAATCTGC ACCAGAGAAT AAAGGTACAG GACAACATGG ACATATGCAT GGTCTAGAA ATAATCATCC
ACAAAATACT TCTGATAGTC AAAAAAATG TACCGATGGT AACAAAGAAA ACTGTGGAGC AGCAACATCC CTCTTAAATA
ACTCTAGTAA TATTGCTTCA ATAAATAAAT TTGTTGTTTT AATTTTCAGCA ACACTTGTTT TATCTTTT
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Technical Manager or designee, ATCC Federal Solutions

28 JAN 2026

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