

Plasmodium falciparum, Strain HB3

Catalog No. MRA-155

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Product Description:

Plasmodium falciparum (*P. falciparum*), strain HB3 was cloned from the Honduras I/CDC strain originally isolated from a patient in Choloteca, Honduras, during an outbreak of urban malaria in January 1980. MRA-155 lot 70049772 was produced by cultivation of BEI Resources seed lot 58243283 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 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: 70049772

Manufacturing Date: 27JAN2022

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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 ²		
Chloroquine	Report results	11.5 ± 0.8 nM
Artemisinin	Report results	9.7 ± 0.7 nM
Quinine	Report results	98.3 ± 6.8 nM
Cycloguanil	Report results	62.1 ± 5.7 nM
Pyrimethamine	Report results	16780 ± 154.8 nM
Sulfadoxine	Report results	387900 ± 35777 nM
Genotypic Analysis¹ Sequencing of Merozoite Surface Protein 2 (MSP2) gene (~ 720 base pairs)	≥ 99% sequence identity to <i>P. falciparum</i> , strain HB3 (GenBank: AANS01000284.1)	99.9% sequence identity to <i>P. falciparum</i> , strain HB3 (GenBank: AANS01000284.1)
Level of Parasitemia by Giemsa Stain Microscopy		
Pre-freeze (10 days post-infection) ³		
Ring-stage parasitemia	Report results	4.71%
Total parasitemia	≥ 2%	6.91%
Post-freeze (4 days post-infection) ¹		
Ring-stage parasitemia	Report results	2.72%
Total parasitemia	≥ 1%	4.47%
Viability (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 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-155 MSP2 Sequence

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CCTTTAATAT TAAAAATGAA AGTAAATATA GCAACACATT CATAACAAT GCTTATAAAA TGAGTATAAG GAGAAGTATG GCAATGAAG
GTTCTAATAC TAAGAGTGTA GGTGCAAATG CTCCAAAAGC TGATACTATT GCTAGTGGAA GTCAAAAGTAG TACAAATAGT GCAAGTACTA
GTACTACTAA TAATGGAGAA TCACAAAATA CTACTCCTAC CGCTGCTGAT ACCCCTACTG CTACAGAAAAG TAATTCACCT TCACCACCCA
TCACTACTAC AGAAAGTAAT TCACCTTCAC CACCCATCAC TACTACAAA AGTAATTCAC CTTACCACC CATCACTACT ACAGAAAGTT
CAAGTTCTGG CAATGCACCA AATAAACAG ACGGTAAAGG AGAAGAGAGT GAAAAACAAA ATGAATTAAA TGAATCAACT GAAGAAGGAC
CCAAAGCTCC ACAAGAACCT CAAACGGCAG AAAATGAAAA TCCTGCTGCA CCAGAGAATA AAGGTACAGG ACAACATGGA CATATGCATG
GTTCTAGAAA TAATCATCCA CAAAATACTT CTGATAGTCA AAAAGAATGT ACCGATGGTA ACAAAGAAAA CTGTGGAGCA GCAACATCCC
CTTTAAATAA CTCTAGTAAT ATTGCTTCAA TAAATAAATT TGTGTTTTTA ATTTTCAGCAA CACTTGTTTT ATCTTTTGCC ATATTCATAT
AAA
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29 SEP 2022

Technical Manager or designee, ATCC Federal Solutions

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