

***Plasmodium falciparum*, Strain GC03**

Catalog No. MRA-164

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Product Description: *Plasmodium falciparum* (*P. falciparum*), strain GC03 is a genetic cross progeny of *P. falciparum* strains HB3 and Dd2.

Lot¹: 62941857

Manufacturing Date: 18SEP2014

TEST	SPECIFICATIONS	RESULTS
Identification by Giemsa Stain Microscopy^{2,3}	Blood-stage parasites present	Blood-stage parasites present
Genotypic Analysis² Sequencing of Merozoite Surface Protein 2 (MSP2) gene (~ 640 base pairs)	Consistent with <i>P. falciparum</i>	Consistent with <i>P. falciparum</i> (Figure 1)
Functional Activity by PCR Amplification² MSP2 PCR amplicon analysis ⁴	~ 600 to 900 base pair amplicon	~ 900 base pair amplicon
Level of Parasitemia Pre-freeze ^{5,6} Ring-stage parasitemia Total parasitemia Post-freeze ^{2,7} Ring-stage parasitemia Total parasitemia	Report results ≥ 2% Report results ≥ 1%	9.91% 13.5% 1.81% 2.89%
Viability (post-freeze)^{2,8}	Growth in infected red blood cells	Growth in infected red blood cells
Sterility (21-day incubation)² Harpo's HTYE broth ⁹ , 37°C and 26°C, aerobic Tryptic Soy broth, 37°C and 26°C, aerobic Sabouraud Dextrose broth, 37°C and 26°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

¹MRA-164 was produced by cultivation of BEI Resources MR-164 lot 2256348 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 10 days. Every day, uninfected, leukocyte filtered, Type O erythrocytes in complete culture medium were added dropwise to the culture as needed and monitored for hematocrit.

²Testing completed on viald post-freeze material.

³Blood-stage malaria parasites (rings, trophozoites, schizonts +/- gametocytes) were examined by microscopic Giemsa-stained blood smears of an *in vitro* human blood culture over 3 days.

⁴Primer sequences and conditions for PCR are available upon request.

⁵Testing completed on bulk material prior to vialing and freezing.

⁶Parasitemia was determined after 10 days post infection by microscopic counts of Giemsa-stained blood smears.

⁷Parasitemia was determined after 3 days post infection by microscopic counts of Giemsa-stained blood smears.

⁸Viability was confirmed by examination of infected erythrocytes for parasitemia at 3 days post infection.

⁹Atlas, Ronald M. Handbook of Microbiological Media. 3rd ed. Ed. Lawrence C. Parks. Boca Raton: CRC Press, 2004, p. 798.

Figure 1: MRA-164 MSP2 Sequence

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GAGTTATTTA AGAGGGATGT TGCTGCTCCA CAGTTTTCTT TGTTACCATC GGTACATTCT TTTTGACTAT CAGAAGTATT
TTGTGGATGA TTATTTCTAG AACCATGCAT ATGTCCATGT TGTCCTGTAC CTTTATTCTC TGGTGCAGCA GGATTTTCAT
TTTCTGCCGT TTGAGGTTCT TGTGGAGCTT TGGGTCCTTC TTCAGTTGAT TCATTTAATT CTTTTGTTT TTCACTCTCT
TCTCCTTTAC CGTCTGTTTT ATTTGGTGCA TTGCCAGAAC TTGAACTTTC TGTAGTAGTG ATGGGTGGTG AAGGTGAATT
ACTTTTTGTA GTAGTGATGG GTGGTGAAGG TGAATTACTT TCTGTAGTAG TGATGGGTGG TGAAGGTGAA TTACTTTCTG
TAGCAGTAGG GGTATCAGCA GCGGTAGGAG TAGTATTTTG TGATTCTCCA TTATTAGTAG TACTAGTACT TGCCTATTTT
GTACTACTTT GACTTCCACT AGCAATAGTA TCAGCTTTTG GAGCATTGTC ACCTACACTC TTAGTATTAG AACCTTCATT
TGCCATACTT CTCCTTATAC TCATATTATA AGCATTGTTT ATGAATGTGT TGCTATATTT ACTTTCATTT TTAATATTTA
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/Heather Couch/
Heather Couch

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