Certificate of Analysis for MRA-96

Plasmodium falciparum, Strain CS2

Catalog No. MRA-96

Product Description:

Plasmodium falciparum (P. falciparum), strain CS2, was derived from strain FAF-EA8, a derivative of the Brazilian isolate ItG2, in 1994, by panning for adhesion on Chinese hamster ovary cells and then immobilized chondroitin sulfate A (CSA). MRA-96 was produced by cultivation of BEI Resources seed lot 60918111 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% N_2, 5% CO_2, 5% O_2) and monitored for parasitemia for 11 days. Every 1 to 4 days, uninfected, leukocyte-filtered, Type O erythrocytes in complete culture medium were added dropwise to the culture as needed and monitored for hematocrit.

Lot: 70050430 Manufacturing Date: 28FEB2022

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TEST	SPECIFICATIONS	RESULTS
Identification by Giemsa Stain Microscopy[1]	Blood-stage parasites present	Blood-stage parasites present
Genotypic Analysis[1]		
Sequencing of Merozoite Surface Protein 2 (MSP2) gene (~ 800 base pairs)	Consistent with *P. falciparum*	Consistent with *P. falciparum* (Figure 1)
Level of Parasitemia by Giemsa Stain Microscopy		
Pre-freeze (11 days post-infection)[2]		
Ring-stage parasitemia	Report results	3.2%
Total parasitemia	≥ 2%	5.08%
Post-freeze (3 days post-infection)[1]		
Ring-stage parasitemia	Report results	0.39%
Total parasitemia	≥ 1%	4.12%
Viability (3 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[3]	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
Mycoplasma Contamination[1]		
DNA detection by PCR	None detected	None detected

[1]Testing completed on vialed, post-freeze material.
[2]Testing completed on bulk material prior to vialing and freezing.
[3]Atlas, Ronald M. Handbook of Microbiological Media. 3rd ed. Ed. Lawrence C. Parks. Boca Raton: CRC Press, 2004, p. 798.

BEI Resources
www.beiresources.org
E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898

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Figure 1: MRA-96 MSP2 Sequence

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  1 TAAAACATTG TCTATTATAA ATTTCTTTAT TTTTGTTACC TTTAATATTA AAAATGAAAG TAAATATAGC AACACATTCA
 81 TAAACAATGC TTATAATATG AGTATAAGGA GAAGTATGAC AGAAAGTAAT CCTCCTACTG GTGCTAGTGG TAGTGCTGGT
161 GGTAGTGCTG GTGGTAGTGC TGGTGGTAGT GCTGGTGGTA GTGCTGGTGG TAGTGCTGGT GGTAGTGCTG GTGGTAGTGC
241 TGGTGGTAGT GCTGGTGGTA GTGCTGGTGG TAGTGCTGGT GGTAGTGCTG GTGGTAGTGC TGGTTCTGGT GATGGTAATG
321 GTGCTAATCC TGGTGCAGAT GCTGAGAGAA GTCCAAGTAC TCCCGCTACT ACCACAACTA CCACAACTAC TAATGATGCA
401 GAAGCATCTA CCAGTACCTC TTCAGAAAAT CCAAATCATA ATAATGCCGA AACAAATCAA GCAAATAAAG AAACTCAAAA
481 TAACTCAAAT GTTCAACAAG ACTCTCAAAC TAAATCAAAT GTTCCACCCA CTCAAGATGC AGACACTAAA AGTCCTACTG
561 CACAACCTGA ACAAGCTGAA AATTCTGCTC CAACAGCCGA ACAAACTGAA TCCCCCGAAT TACAATCTGC ACCAGAGAAT
641 AAAGGTACAG GACAACATGG ACATATGCAT GGTTCTAGAA ATAATCATCC ACAAAATACT TCTGATAGTC AAAAAGAATG
721 TACCGATGGT AACAAAGAAA ACTGTGGAGC GGGCAACATC CCTCTTAAAT AACTCTAGTA ATATTGCTTC AATAAATAA
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/Sonia Bjorum Brower/
Sonia Bjorum Brower 31 OCT 2023
Technical Manager or designee, ATCC Federal Solutions

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