

# Plasmodium falciparum (MPFM-55A): sc-65732

## BACKGROUND

*Plasmodium falciparum* is a protozoan parasite that causes malaria in humans. *P. falciparum* malaria is transmitted to humans by *Anopheles* mosquitoes, and this type of malaria has the highest rate of complications and mortality, accounting for 80 percent of all human malarial infections and 90 percent of the deaths. Only the early trophozoites and gametocytes are seen in the peripheral blood during a *P. falciparum* infection. Sometimes, faint comma-shaped red dots are seen on the erythrocyte surface. The *P. falciparum* genome is very rich in A and T bases (approximately 80%) and is organized into 14 chromosomes that hold just over 5,300 genes. *Plasmodium falciparum* contains a plastid similar to plant chloroplasts, which was acquired by engulfing a eukaryotic alga and retaining the algal plastid. The *P. falciparum* apicomplexan plastid is an essential organelle that may be involved in lipid synthesis. This plastid is a potential target for anti-malarial drug development.

## REFERENCES

1. Reddy, G.R., Chakrabarti, D., Schuster, S.M., Ferl, R.J., Almira, E.C. and Dame, J.B. 1993. Gene sequence tags from *Plasmodium falciparum* genomic DNA fragments prepared by the "genease" activity of mung bean nuclease. Proc. Natl. Acad. Sci. USA 90: 9867-9871.
2. McKenzie, F.E. and Bossert, W.H. 1997. The dynamics of *Plasmodium falciparum* blood-stage infection. J. Theor. Biol. 188: 127-140.
3. Gupta, S., Thapar, M.M., Mariga, S.T., Wernsdorfer, W.H. and Björkman, A. 2002. *Plasmodium falciparum*: *in vitro* interactions of artemisinin with Amodiaquine, pyronaridine, and Chloroquine. Exp. Parasitol. 100: 28-35.
4. Williamson, D.H., Preiser, P.R., Moore, P.W., McCready, S., Strath, M. and Wilson, R.J. 2002. The plastid DNA of the malaria parasite *Plasmodium falciparum* is replicated by two mechanisms. Mol. Microbiol. 45: 533-542.
5. Florens, L., Washburn, M.P., Raine, J.D., Anthony, R.M., Grainger, M., Haynes, J.D., Moch, J.K., Muster, N., Sacci, J.B., Tabb, D.L., Witney, A.A., Wolters, D., Wu, Y., Gardner, M.J., Holder, A.A., Sinden, R.E., Yates, J.R. and Carucci, D.J. 2002. A proteomic view of the *Plasmodium falciparum* life cycle. Nature 419: 520-526.
6. Foth, B.J. and McFadden, G.I. 2003. The apicoplast: a plastid in *Plasmodium falciparum* and other Apicomplexan parasites. Int. Rev. Cytol. 224: 57-110.
7. Vilemeyer, O., McIntosh, M.T., Joiner, K.A. and Coppens, I. 2004. Neutral lipid synthesis and storage in the intraerythrocytic stages of *Plasmodium falciparum*. Mol. Biochem. Parasitol. 135: 197-209.
8. Ting, L.M., Shi, W., Lewandowicz, A., Singh, V., Mwakwingwe, A., Birck, M.R., Ringia, E.A., Bench, G., Madrid, D.C., Tyler, P.C., Evans, G.B., Furneaux, R.H., Schramm, V.L. and Kim, K. 2005. Targeting a novel *Plasmodium falciparum* purine recycling pathway with specific immucillins. J. Biol. Chem. 280: 9547-9554.
9. Jeffress, M. and Fields, S. 2005. Identification of putative *Plasmodium falciparum* mefloquine resistance genes. Mol. Biochem. Parasitol. 139: 133-139.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## SOURCE

*Plasmodium falciparum* (MPFM-55A) is a mouse monoclonal antibody raised against recombinant histidine rich protein II from *Plasmodium falciparum*.

## PRODUCT

Each vial contains 100 µg IgM in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

*Plasmodium falciparum* (MPFM-55A) is recommended for detection of histidine rich protein II (HRP2) of *Plasmodium falciparum* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.