



# Plasmodium Aldolase (MPVA-55A): sc-65731

## 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% of all human malarial infections and 90% of the deaths. Plasmodium Aldolase binds to Actin, adhesin and Thrombospondin-related anonymous protein (TRAP). The C-terminus of Plasmodium Aldolase contains several important structures. A critical tryptophan residue determines the binding affinity of the aldolase for adhesin and plays a role in motility and two neighboring lysine residues also play an important role in protein binding. The TRAP- and Actin-binding sites of Plasmodium Aldolase overlap, supporting the notion that the nonenzymatic function aldolase plays in the *Plasmodium* invasion system relies on both the plasticity of the aldolase active-site region and the multimeric nature of the enzyme.

## REFERENCES

1. Döbeli, H., Itin, C., Meier, B. and Certa, U. 1992. Is *Plasmodium falciparum* aldolase useful for rational drug design? Acta Leiden. 60: 135-140.
2. Cloonan, N., Fischer, K., Cheng, Q. and Saul, A. 2001. Aldolase genes of *Plasmodium* species. Mol. Biochem. Parasitol. 113: 327-330.
3. Jewett, T.J. and Sibley, L.D. 2003. Aldolase forms a bridge between cell surface adhesins and the Actin cytoskeleton in apicomplexan parasites. Mol. Cell 11: 885-894.
4. Buscaglia, C.A., Coppens, I., Hol, W.G. and Nussenzweig, V. 2003. Sites of interaction between aldolase and Thrombospondin-related anonymous protein in *Plasmodium*. Mol. Biol. Cell. 14: 4947-4957.
5. Richter, J., Göbels, K., Müller-Stöver, I., Hoppenheit, B. and Häussinger, D. 2004. Co-reactivity of plasmodial histidine-rich protein 2 and aldolase on a combined immuno-chromographic-malaria dipstick (ICT) as a potential semi-quantitative marker of high *Plasmodium falciparum* parasitaemia. Parasitol. Res. 94: 384-385.
6. Zhang, R.J., Zhu, H.M., Cao, Y., Zhou, A.G., Zheng, Z.Q., Zhang, Q.F. and Zheng, H. 2004. Cloning and expression of aldolase encoding gene of *Plasmodium falciparum* FCC1/HN strain. Zhongguo Ji Sheng Chong Xue Yu Ji Sheng Chong Bing Za Zhi. 22: 133-135.
7. Lee, N., Baker, J., Bell, D., McCarthy, J. and Cheng, Q. 2006. Assessing the genetic diversity of the aldolase genes of *Plasmodium falciparum* and *Plasmodium vivax* and its potential effect on performance of aldolase-detecting rapid diagnostic tests. J. Clin. Microbiol. 44: 4547-4549.
8. Zhang, R.J., Zhu, H.M., Zheng, H. and Ning, B.F. 2006. Identification of recombinant aldolase of *Plasmodium falciparum* and its monoclonal antibody preparation. Zhongguo Ji Sheng Chong Xue Yu Ji Sheng Chong Bing Za Zhi. 24: 196-199.
9. Bosch, J., Buscaglia, C.A., Krumm, B., Ingason, B.P., Lucas, R., Roach, C., Cardozo, T., Nussenzweig, V. and Hol, W.G. 2007. Aldolase provides an unusual binding site for Thrombospondin-related anonymous protein in the invasion machinery of the malaria parasite. Proc. Natl. Acad. Sci. U.S.A. 104: 7015-7020.

## SOURCE

Plasmodium Aldolase (MPVA-55A) is a mouse monoclonal antibody raised against recombinant *Plasmodium Aldolase*.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Plasmodium Aldolase (MPVA-55A) is recommended for detection of aldolase of *Plasmodium falciparum* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048.

## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

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