

## REFERENCES



- Bannister, L.H., and Sinden, R.E. 1982. New knowledge of parasite morphology. Br. Med. Bull. 38: 141-145
- Blum, J.J., and Ginsberg, H. 1984. Absence of  $\alpha$ -ketoglutarate dehydrogenase activity and presence of  $\text{CO}_2$ -fixing activity in Plasmodium falciparum grown in vitro in human erythrocytes. J. Protozool. 31: 167-169.
- Conklin, K.A., Chov, S.C., Siddiqui, W.A., and Schnell, J.V. 1973. DNA and RNA synthesis by intraerythrocytic stages of Plasmodium knowlesi. J. Protozool. 20: 683-688.
- Daddona, P.E., Weismann, W.P., Lambros, C., Kelly, W.N., and Webster H.K. 1984. Human malaria parasite adenosine deaminase. Characterization in host enzyme-deficient erythrocyte culture. J. Biol. Chem. 259: 1472-1475.
- De Rojas, M.O. and Wasserman, M. 1985. Temporal relationships on macromolecular synthesis during the asexual cell cycle of Plasmodium falciparum. Trans. Roy. Soc. Trop. Med. Hyg. 79: 792-796.
- Divo, A.A., and Jensen, J.B. 1982(a). Studies on serum requirements for the cultivation of Plasmodium falciparum. 1. Animal sera. Bull. W.H.O. 66: 565-569

- Divo, A.A., and Jensen, J.B. 1982(b). Studies on serum requirements for the cultivation of Plasmodium falciparum. 2. Medium enrichment. Bull. W.H.O. 66: 571-575.
- Divo, A.A., Geary, T.G., Jensen, J.B., and Ginsburg, H. 1985(a). The mitochondrion of Plasmodium falciparum visualized by rhodamine 123 fluorescence. J. Protozool. 32: 442-446.
- Divo, A.A., Geary, T.G., Davis, N.L., and Jensen, J.B. 1985(b). Nutritional requirements of Plasmodium falciparum in culture. I. Exogenously supplied dialyzable components necessary for continuous growth. J. Protozool. 32: 59-64.
- Gero, A.M., Brown, G.V., and O'Sullivan, W.J. 1984. Pyrimidine de novo synthesis during the life cycle of the intraerythrocytic stage of Plasmodium falciparum. J. Parasitol. 70: 536-541.
- Gero, A.M., Finney, K.G., Bennett, J.C. and O'Sullivan, W.J. 1981(a). Comparative studies on dihydroorotate dehydrogenase from Plasmodium berghei and the mouse reticulocyte. Aust. J. Exp. Biol. Med. Sci. 59: 477-490.
- Gero, A.M., O'Sullivan, W.J. 1990. Purines and pyrimidines in malarial parasites. Blood Cells. 16 : 467-484.
- Gero, A.M., Tetley, K., Coombs, G.H. and Phillips, R.S. 1981(b). Dihydroorotate dehydrogenase, orotate phosphoribosyl transferase and orotidine 5'-phosphate decarboxylase in Plasmodium falciparum. Trans. Roy. Soc. Trop. Med. Hyg. 75: 719-720.

- Goman, M., Langsley G., Hyde, J.E., Yankovski, N.K., Zolg, J.W. and Scaife, J.G. 1982. The establishment of genomic DNA libraries for the human malaria parasite Plasmodium falciparum and the identification of individual clones by hybridization. Mol. Biochem. Parasitol. 5 : 391-400.
- Gritzmacher, C.A. and Reese R.T. 1984. Protein and nucleic acid synthesis during synchronized growth of Plasmodium falciparum. J. Bacteriol. 160: 1165-1167.
- Guntaka, R.V., Gowda, S., Rao, A.S., and Green, T.J. 1985. Organization of Plasmodium falciparum genome. 1. Evidence for a highly repeated DNA sequence. Nucleic Acids Res. 13: 1965-1975.
- Gutteridge, W.E., Dave, D. and Richards, W.H.G. 1979. Conversion of dihydroorotate to orotate in parasitic protozoa. Biochim. Biophys. Acta. 582: 390-401.
- Gutteridge, W.E., and Trigg, P.I. 1970. Incorporation of radioactive precursors into DNA and RNA of Plasmodium knowlesi in vitro. J. Protozool. 17: 89-96.
- Hammond, D.J. and Gutteridge, W.E. 1982. UMP synthesis in the Kinetoplastida. Biochim. Biophys. Acta 718: 1-10.
- Hammond, D.J., Gutteridge, W.E. 1984. Purine and pyrimidine metabolism in the trypanosomatidae. Mol. Biochem. Parasitol. 13 : 243-261.
- Hempelmann, E., and Wilson, R.J.M. 1981. Detection of glucose-6-phosphate dehydrogenase in malarial parasites. Mol. Biochem. Parasitol. 2: 197-204.

- Hill, B., Kilsby, J., Rogerson, G.W., McIntosh, R.T., and Ginger, C.D. 1981. The enzymes of pyrimidine biosynthesis in a range of parasitic protozoa and helminths. Mol. Biochem. Parasitol. 2: 123-134.
- Holz, G.G., Jr., 1977. Lipids and the malarial parasite. Bull. W.H.O. 55: 237-248.
- Homewood, C.A., and Neame, K.D. 1980. Biochemistry and malarial parasites. In Kreier, J.P., (ed.), Malaria, pp. 345-405 New York : Academic Press.
- Hough-Evans, B.R., and Howard, J. 1982. Genome size and DNA complexity of Plasmodium falciparum. Biochim. Biophys. Acta. 698 : 56-61.
- Inselberg, J., and Banyal, H.S. 1984. Synthesis of DNA during the asexual cycle of Plasmodium falciparum in cultures. Mol. Biochem. Parasitol. 10: 79-87.
- Jensen, J.B., and Trager, W. 1977. Plasmodium falciparum in culture. Use of outdated erythrocytes and description of the candle jar method. J. Parasitol. 63: 883-886.
- Jones, M.E. 1980. Pyrimidine nucleotide biosynthesis in animals: Genes, enzymes and regulation of UMP synthesis. Ann. Rev. Biochem. 49: 253-279.

- Kelley, W.N., and L.H. Smith, JR. 1978. Hereditary orotic aciduria. In J.B. Stanburg, J.B. Wyngarrden and D.S. Frederickson (eds.), The metabolic basis of inherited disease. 4th Ed. 1045–1071 McGraw Hill, New York.
- Kemp, D.J., Corcoran, L.M. Coppel, R.L., Stahl, H.D., Bianco, A.E., Brown, G.V., and Anders, R.F. 1985. Size variation in chromosomes from independent cultured isolate of Plasmodium falciparum. Nature 315 : 347–350.
- Keppler, D. and Holstege, A. 1982. Pyrimidine nucleotide metabolism and its compartmentation. In : Sies, H. (ed), Metabolic compartmentation, pp 147–203 London : Academic Press.
- Krooth, R.S., K.D. Wu, and R. Ma. 1969. Dihydroorotic acid dehydrogenase : introduction into erythrocyte by the malaria parasite. Science 164 : 1073–1075.
- Krungkrai, J. 1991. Biochemistry of Malaria I : folate and cobalamin metabolism and mechanism of pyrimethamine resistance in Plasmodium falciparum. Chula. Med. J. 35 : 105–111.
- Krungkrai, J., Cerami, A., and Henderson, G.B. 1990. Pyrimidine Biosynthesis in Parasitic Protozoa : Purification of a Monofunctional Dihydroorotase from Plasmodium berghei and Crithidia fasciculata Biochemistry 29 : 6270–6275.

- Krungskrai, J., Cerami, A., and Henderson, G.B. 1991. Purification and Characterization of Dihydroorotate Dehydrogenase from the Rodent Malaria Parasite Plasmodium berghei. Biochemistry 30 : 1934–1939.
- Laemmli, U.K. 1970. Cleavage of structural genes during the assembly of the head of bacteriophage T<sub>4</sub>. Nature 227: 680–685.
- Lambros, C., and Vanderberg, J.P. 1979. Synchronization Plasmodium falciparum erythrocytic stages in culture. J. Parasitol. 65: 418–420.
- Langreth, S.G., Jensen, J.B., Reese, R.T. and Trager, W. 1978. Fine structure of human malaria in vitro. J. Protozool. 25 : 443–452.
- Leech, J.H., Barnwell, J.W., Aikawa, M., Miller, L.H., and Howard, R.J. 1984. Plasmodium falciparum malaria. Association of knobs on the surface of infected erythrocytes with a histidine-rich protein and the erythrocyte skeleton. J. Cell. Biol. 98 : 1256–1264.
- McCutchan, T.F., Dame, J.B., Miller, L.H., and Barnwell, J. 1984(a). Evolutionary relatedness of Plasmodium species as determined by the structure of DNA. Science 225, 808–811.
- McCutchan, T.F., Welsh, J.A., Dame, J.B., Quakyi, I.A., Graves, P.M., Drake, J.C., and Allegra, C.J. 1984(b). Mechanism of pyrimethamine resistance in recent isolates of Plasmodium falciparum. Antimicrobial Agents Chemother. 26: 656–659.

- Myler, P., Sual, A., and Kidson, C. 1983. The synthesis and fate of stage specific protein in Plasmodium falciparum cultures. Mol. Biochem. Parasitol. 9: 37-45.
- Newbold, C.I., Boyle, D.B., Smith C.C., and Brown, K.N. 1982. Stage specific protein and nucleic acid synthesis during the asexual cycle of the rodent malaria Plasmodium chabaudi. Mol. Biochem. Parasitol. 5: 33-44.
- O'Sullivan, W.J. and Ketly, K. 1980. Biosynthesis of uridine monophosphate in Plasmodium berghei. Ann. Trop. Med. Parasitol. 74: 109-114.
- Pascal, R.A., Jr., Trang, N.L., Cerami, A. and Walsh, C. 1983. Purification and properties of dihydroorotate oxidase from Crithidia fasciculata and Trypanosoma brucei. Biochemistry 22: 171-178.
- Pasvol, G. 1984. Receptors on red cells for Plasmodium falciparum and their interaction with merozoites. Phil. Trans. Roy. Soc. Lond. B 307 : 189-200.
- Pfaller, M.A., Krogstad, D.J., Parquette, a.R., and Nguyen-Dinh, P. 1982. Plasmodium falciparum. Stage-specific lactate production in synchronized cultures. Exp. Parasitol. 54: 391-396.
- Phisit Prapunwattana. 1986. Mechanism of antimalarial action of tetracycline. Master's Thesis, Mahidol University.



Rathod, P.K., Reyes, P. 1983. Oroditylate-metabolizing Enzymes of the Human Malarial Parasite, Plasmodium falciparum. Differ from host cell enzymes. J. Biol. Chem. 5: 2852-2855.

Reyes, P., Rathod, P.K., Sanchez, D.J., Mrema, J.E.K., Riéckmann K.H., and Heidrich, H.G. 1982. Enzyme of purine and pyrimidine metabolism from the human malarial parasite. Plasmodium falciparum. Mol. Biochem. Parasitol. 5 : 275-290.

Scheibel, L.W., S.H. Ashton, and W. Trager. 1979. Plasmodium falciparum : microaerophilic requirements in human red blood cells. Exp. Parasitol. 47: 410-418.

Scheibel, L.W., and J. Miller. 1969. Cytochrome oxidase activity in platelet-free preparations of Plasmodium knowlesi. J. Parasitol. 55: 825-829.

Scheibel, L.W. and J. Miller 1969. Glycolytic and cytochrome oxidase activity in plasmodia. Mil. Med. 134 : 1074-1080.

Scheibel, L.W., and W.K. Pflaum. 1970. Carbohydrate metabolism in Plasmodium knowlesi. Comp. Biochem. Physiol. 37: 543-553.

Schimandle, C.M., and Sherman, I.W. 1983. Characterization of adenosine deaminase from the malarial parasite, Plasmodium lophurae, and its host cell, the ducking erythrocyte. Biochem. Pharmacol. 32 : 115-122.



- Schimandle, C.M., Tanigoshi, L., Mole, L.A., and Sherman, I.W. 1985. Purine nucleoside phosphorylase of the malarial parasite. Plasmodium lophurae, J. Biol. Chem. 260: 4455-4460.
- Scott, H.V., Gero, A.M., and O'Sullivan, W.J. 1986. In vitro inhibition of Plasmodium falciparum by pyrazofuran, an inhibitor of pyrimidine biosynthesis de novo. Mol. Biochem. Parasitol. 18: 1-13.
- Sherman, I.W. 1977. Amino acid metabolism and protein synthesis in malarial parasites. Bull. W.H.O. 55: 265-276.
- Sherman, I.W. 1979. Biochemistry of Plasmodium (malaria parasites). Microbiol. Rev. 44. 453-495.
- Sherman, I.W. 1983. Biochemistry of Plasmodium. In Werndorfer, W., and Trigg, P.,(eds), Modern design of antimalarial drugs, pp. 17-33. World Health Organization, Geneva.
- Sherman, I.W. 1984. Metabolism. In Peters, W., and Richard, W.H.G., (eds.), Antimalarial drugs I, pp.31-81, Springer-Verlag, Berlin, Heidelberg, New York, Tokyo : Handbook of experimental pharmacology, Vol.68 Part I.
- Sherman, I.W., and Tanigoshi, L. 1981. The proteases of Plasmodium. A Cathepsin D-like enzyme from Plasmodium lophurae. In Slutzky, G.M. (ed.), The biochemistry of parasite, pp. 137-149. Oxford, Great Britain; Pergamon press.

- Sinden, R.E. 1984. The biology of Plasmodium in the mosquito. Experientia 40: 1330–1343.
- Siu, P.M.L. 1967. Carbon dioxide fixation in Plasmodia and the effect of some antimalarial drugs on the enzyme. Comp. Biochem. Physiol. 23: 785–795.
- Slomianny, C. and Prensier, G. 1986. Application of the serial sectioning and tridimensional reconstruction techniques to the morphological study of the Plasmodium falciparum mitochondrion. J. Parasitol. 72 : 595–598.
- Tampitag, S. and O'Sullivan, W.J. 1986. Enzymes of pyrimidine biosynthesis in Crithidia Lucillie. Mol. Biochem Parasitol. 19: 125–134.
- Trager, W. and Jensen, J.B. 1976 (a). Cultivation of malaria parasites. Nature 273 : 621–622.
- Trager, W. and Jensen, J.B. 1976 (b). Human malaria parasites in continuous culture. Science 193: 673–675.
- Van Dyke, K., Tremblay, G.C., Lantz, C.H. and Szustkiewicz, C. 1970. The source of purines and pyrimidines in Plasmodium berghei. Am. J. Trop. Med. Hyg. 19: 202–208.

- Vander Jagt, D.L., Hunsaker, L.A., and Heidrich, J.E. 1981. Partial purification and characterization of lactate dehydrogenase from Plasmodium falciparum. Mol. Biochem. Parasitol. 4: 255–264.
- Vander Jagt, D.L., Baack, B.R., and Hunsaker, L.A. 1984. Purification and characterization of an aminopeptidase from Plasmodium falciparum. Mol. Biochem. Parasitol. 10: 45–54.
- Vial, H.J., Philippot, J.R., and Wallach, D.H.F. 1984(a). A reevaluation of the status of cholesterol in erythrocytes infected by Plasmodium knowlesi and P. falciparum. Mol. Biochem. Parasitol. 13: 53–65.
- Vial, H.J., Thuet, M.J., Ancelin, M.L., Philippot, J.R., and Chavis, C. 1984(b). Phospholipid metabolism as a new target for malaria chemotherapy. Mechanism of action of D-2-amino-1-butanol. Biochem. Pharmacol. 33: 2761–2770.
- Waki, S., Yanome, I. and Suzuki, M. 1985. X-ray sensitivity and DNA synthesis in synchronous culture of Plasmodium falciparum. Z. Parasitenkd. 71 : 213–218.
- Walsh, C.J., and I. Sherman. 1986. Purine and pyrimidine synthesis by the avian malarial parasite, Plasmodium lophurae. J. Protozool. 15 : 763–770.
- Webster, H.K., and Whaun, J.M. 1981(a). Application of simultaneous UV-radioactivity high-performance liquid chromatography to the study of intermediary metabolism. I. Purine nucleotides, nucleosides and bases. J. Chromatogr. 209: 283–292.

- Webster, H.K., and Whaun, J.M. 1981(b). Purine metabolism during continuous erythrocyte culture of human malaria parasites (*P.falciparum*). In Alan R. Lise (Inc.), The red cell. pp. 557–570. New York
- Webster H.K., and Whaun, J.M. 1982. Antimalarial properties of Bredinin. Prediction based on identification of difference in human host-parasite purine metabolism. J. Clin. Invest. 70: 461–469.
- Williamson, D.H., Wilson, R.J.M., Bates, P.A., McCready, S., Perler, F., and Qiang, Bo-Uin. 1985. Nuclear and mitochondrial DNA of the primate malarial parasite *Plasmodium knowlesi*. Mol. Biochem. Parasitol. 14: 199–209.
- Wray W., Boulikas T., Wray V.P. and Hancock R. 1981. Silver staining of proteins in polyacrylamide gel. Analyt. Biochem. 118 : 197–203.

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