

DAFTAR PUSTAKA

- Aikawa M, 1971. ‘Parasitological review. *Plasmodium*: The fine structure of malaria parasite’. *Experimental Parasitol.* Vol. 30, pp. 284-320.
- Akbar S, 2011. ‘*Andrographis paniculata*: a review of pharmacological activities and clinical effects’. *Alternative Medicine Review.* Vol. 16, No. 1, pp. 66-67.
- Alam A, Goyal M, Shameel M, Iqbal, Pal C, Dey S, 2009. ‘Novel antimalarial drug targets: hope for new antimalarial drugs’. *Expert Rev. Clin Pharmacol.* Vol. 2, No. 5, pp. 469-489.
- Arwati H, 2013. *Biologi parasit malaria dalam immunologi malaria*. Rumah Sakit Penyakit Tropik Infeksi Universitas Airlangga, hlm. 37-47.
- Auparakkitanon S, Noonpakdee W, Ralp RK, Denny WA, Walairat P, 2003. Antimalarial 9-Anilinoacridine compound directed at hematin. *Antimicrob agent chemother*, Vol. 47, No. 12, pp. 3708-3712.
- Banerjee R, Liu J, Beatty W, Pelosof L, Klemba M, and Goldberg DE, 2002. ‘Four plasmepsins are active in the *Plasmodium falciparum* food vacuole, including a protease with an active-site histidine’. *Proc Natl Acad Sci USA.* Vol. 99, pp. 990-995.
- Bannister LH, Hopkins JM, Fowler RE, Krishna S & Mitchell GH, 2000. ‘A brief illustrated guide to the ultrastructure of *Plasmodium falciparum* asexual blood stage’. *Journal Parasitology Today.* Vol.16, No. 10, pp. 427-433.
- Bassilico N, Pagani E, Monti D, Olliari P and Taramelli D, 1998. A microtitre based method for measuring the haem polymerization inhibitory activity (HPIA) of antimalarial drugs. *J. Antimicrob. Chemother.* Vol. 42, pp. 55-60.
- Biagini GA, O’Neill, Nzila PM, Ward SA, 2003. ‘Antimalarial chemotherapy: young guns or back to the future’. *Trends in Parasitol.* Vol. 19, No. 11, pp. 479-487.
- Bilia AR, Melilo de Malgalhaes P, Berganzini MC, Vincieri FF, 2006. ‘Simultaneous analysis of artemisinin and flavonoids of several extract of Artemisia annua L. obtained from a commercial sample and selected cultivar’. *J Phytomed*, Vol. 13, No. 7, pp. 487-493.
- Dachlan YP, 2013. *Malaria, epidemiologi, klinik, diagnostik, dan terapi dalam imunologi malaria*. Rumah Sakit Penyakit Tropik Infeksi Universitas Airlangga, hlm. 1-27.

- CDC, 2009. ‘Malaria: life cycle’. Diakses dari <http://www.dpd.cdc.gov>, pada tanggal 10 Februari 2014.
- Depkes RI, 2000. *Acuan sediaan herbal*. Departemen Kesehatan RI Direktorat Jenderal pengawasan obat dan makanan. Hlm. 35-47.
- Deponte M, Becker K, 2004. ‘*Plasmodium falciparum*-do killers commit suicide?’. *Trends Parasitol*. Vol. 20, pp. 165-169.
- Egan TJ, Hunter R, Kashula CH, Marques HM, Misplon A, Walden J, 2000. ‘Structure-fuction relationships in aminoquinoline: effect of amino and cloro groups on quinoline-hematin complex formation inhibition of β-hematin formation and antiplasmodial activity’. *J Med Chem*. Vol. 43, pp.283-291.
- Egan TJ, 2008. ‘Hemozoin formation’. *Journal molecular & biochemical parasitology*. Vol.157, pp. 127-136.
- Ekasari W, 2010. *Identifikasi target biokimiawi senyawa antimalaria hasil isolasi daun Cassia Siamea Lamk*. Disertasi. Program Pascasarjana Universitas Airlangga. Surabaya.
- Ekasari W, Widyawaruyanti, Tantular, Syafruddin, 2010. *Efek cassiarin A hasil isolasi daun Cassia Siamea pada aktivitas antimalaria dan perubahan morfologi dari Plasmodium falciparum*. Lembaga Penelitian Universitas Airlangga. Surabaya.
- Fidock DA, Rosenthal PJ, Croft SL, Brun R, Nwaka S, 2004. ‘Antimalarial Drug Discovery; Efficacy Models For Compound Screening, Nature Reviews. Drug Discover’. Vol.3, pp. 509-520.
- Frolich S, Schuberth C, Bienzle U, Siems KJ, 2005. ‘In vitro antiplasmodial activity of prenylated chalcon derivates and their interaction with haemin’. *J. Antimicro Chemother*.Vol. 55, pp. 883-887.
- Gamboa de Dominguez ND, Rosenthal PJ, 1996. ‘Cysteine protease inhibitor block early steps in hemoglobin degradation by culture malaria parasite’. *Blood*. Vol. 87, No.10, pp. 4448-4454.
- Gandahusada S, Ilahude HD, Pribadi W, 2000. *Parasitologi Kedokteran*. Fakultas kedokteran Universitas Indonesia, hlm. 167-180.
- Hafid, Tyas MW & Widyawaruyanti A, 2011. ‘Model terapi kombinasi ekstrak etanol 80% kulit batang cempedak (*Artocarpus champeden Spreng*) dan artesunat pada mencit terinfeksi parosit malaria’. *J Indon Med Assoc*. Vol. 61, No. 4, pp. 161-167.
- Hansen E, 2010. ‘Ultrastructure of the asexual blood stage of *Plasmodium falciparum*’. *Methods in Cell Biology*. Vol. 96, pp. 93.

- Harijanto PN, 2000. *Malaria, epidemiologi, patogenesis, manifestasi klinis dan penanganan*. Penerbit Buku Kedokteran EGC, pp. 38-96.
- Harijanto PN, 2012. *Malaria dari molekuler ke klinis*. Penerbit Buku Kedokteran EGC, hlm. 118-155.
- Hempelmann E, 2007. ‘Hemozoin biocrystallization in *Plasmodium falciparum* and the antimalarial activity of crystallization inhibitors’. *Parasitol Res.* Vol. 100, pp. 671-676.
- Hong-Chang Z, Yu-hui G, Xiang Z and Heng W, 2009. ‘Dynamin like protein 1 participated in the hemoglobin uptake pathway of *Plasmodium falciparum*’. *Chin Med J.* Vol. 122, No. 14, pp. 1686-1691.
- Hoppe HC, Schalkwyk DA, Wiehart UIM, Meredith SA, Egan J, Weber BW, 2004. ‘Antimalarial quinolines and artemisinin inhibit endocytosis in *P. falciparum*’. *J. antimicrob. Agents Chemother.* Vol. 48, No. 7, pp. 2370-2378.
- Ignatushchenko MV, Winter RW, Baechinger HP, Hinrichs DJ, Riscoe MK, 1997. ‘Xanthones as antimalarial agents; studies of a possible mode of action’. *FEBS Letters.* Vol. 409, pp. 67-70
- Jarukomjorn K and Nobuo N, 2008. ‘Pharmacological aspects of *Andrographis paniculata* on health and its major diterpenoid constituent Andrographolide’, *Journal of Health Science*. Vol. 54, No. 4, pp. 370-381
- Kemenkes, 2013. *Profil data kesehatan Indonesia tahun 2013*. Kementerian Kesehatan Republik Indonesia. Jakarta.
- Kirk K, 2001. ‘Membrane transport in the malaria infected erythrocyte’. *Physiol Review*. Vol. 81, No. 2, pp. 495-537.
- Klonis N, Crespo-Ortiz MO, Bottova I, Abu-Bakar N, Kenny S, Rosenthal PJ, Tilley L, 2011. ‘Artemisinin activity against *Plasmodium falciparum* requires hemoglobin uptake and digestion. *PNAS*. Vol. 108, No. 28, pp.11405-11410.
- Kusumawardhani, 2005. Uji aktivitas antimalari ekstrak sambiloto terstandar dari *Andrographis paniculata* Nees terhadap *Plasmodium berghei* pada mencit. Skripsi. Fakultas Farmasi Universitas Airlangga. Surabaya.
- Lambros C and Vanderberg JB, 1979. ‘Synchronization of *Plasmodium falciparum* erythrocytic stage in culture’. *The Journal of Parasitology*. Vol. 65, No. 3, pp. 418-420.
- Lopes N, Kato MJ, Andrade EH, Maoa JGS, Yoshida M, Planchart AR, Katzin AM, 1999. ‘Antimalarial use of volatile oil from leaves of *Virola surinamensis* (Rol) warb by waiapi amazon Indians’. *Ethnopharmacology*. Vol. 67, pp. 334-340.

- Lopez LL, Vommaro R, Zalis M, De Souza W, Blair S, Segura C, 2010. 'Induction of cell death on *Plasmodium falciparum* blood stages by *Solanum nudum* steroids'. *Parasitology International*. Vol. 59, pp. 217-225.
- Lukas R, 1998. *Rahasia herba Cina, ramuan tanaman obat Cina*. Pustaka Delapratasa, hlm. 113-120.
- Mahdiyanti SD, 2004. *Uji antimalaria isolat andrografolida dari Andrographis paniculata Nees terhadap Plasmodium berghei pada mencit*. Skripsi. Fakultas Farmasi Universitas Airlangga. Surabaya.
- Maeno Y, Toyoshima T, Fujioka H, Ito Y, Meshnick SR, Benakis A, Milhous WK, Aikawa M, 1993. 'Morphologic effects of artemisinin in *Plasmodium falciparum*'. *Am J Trop Med Hyg*. Vol. 49, pp. 485-491.
- Martindale, 2009. *The complete drug reference*. 36th ed. Pharmaceutical Press p: 594-595.
- Maslachah L, 2013. *Aspek molekuler perkembangan resistensi pada pengobatan malaria dalam immunologi malaria*, Rumah Sakit Penyakit Tropik Infeksi Universitas Airlangga, hlm. 85-96.
- Mishra K, Dash AP, Swain BK, Dey N. 'Antimalarial activities of *Andrographis paniculata* and *Heydotis corymbosa* extract and their combination with curcumin'. *Malaria Journal*. Vol. 8, No. 26, pp. 8-26
- Mishra K, Dash AP, Dey N, 2011. 'Andrographolide: a novel antimalarial diterpene lactone compound from *Andrographis paniculata* and its interaction with curcumin and artesunate'. *Journal of Tropical Medicine*. Vol. 10, No. 11, pp. 1-6.
- Muhtadi, 2008. 'Pemisahan fraksi dan senyawa-senyawa yang berkhasiat antiplasmodium dari ekstrak methanol kulit kayu mimba (*Azadirachta indica* juss)'. *Jurnal Penelitian Sains dan Teknologi*. Vol. 9, No. 2, pp. 117-136.
- Mungthin M, Bray PG, Ridley RG, Ward SA, 1998. 'Central role of hemoglobin degradation in mechanisms of action of 4-aminoquinoline, quinoline methanols and phenanthrene methanols'. *Antimicrobial Agents and Chemotherapy*. Vol. 42. No. 7, pp. 2973-2977.
- Muti'ah R, 2012. 'Penyakit malaria dan mekanisme kerja obat-obat antimalaria'. *Alchemy*. Vol. 2, No. 1, pp. 80-91.
- Na BK, Shenai BR, Sijwali PS, Choe Y, Pandey KC, Singh A, Craik CS, Rosenthal PJ, 2004. 'Identification and biochemical characterization of vivapains, cysteine proteases of the malaria parasite *Plasmodium vivax*'. *Biochemical Journal*. No. 378, pp. 529–538.

- Nindatu M, 2009. *Antimalaria senyawa flavonoid kulit batang cempedak (Arthocarpus champeden Spreng) pada morfologi dan aktivitas biokimia parasit malaria*. Disertasi. Fakultas Farmasi Universitas Airlangga. Surabaya.
- Nyakeriga AM, Perlmann H, Hagstedt M, Berzins K, Troye-Bloemberg M, Zhivotovsky, 2006. 'Drug-induced death of the asexual blood stage of *Plasmodium falciparum* occurs without typical signs of apoptosis'. *Microbe Infect*. Vol. 8, pp. 1560-1568.
- Oakley MS, Kumar S, Anantharaman V, Zheng H, Mahajan B, Haynes JD, 2007. 'Molecular factor and biochemical pathways induced by febrile temperature in *Plasmodium falciparum*'. *Infect Immun*. Vol. 75, No. 4, pp. 2015-2025.
- Okhuarobo A, Falodun JE, Erharuyi O, Imieje V, Falodun A, Langer P, 2014. 'Harnessing the medicinal properties of *Andrographis paniculata* for diseases and beyond: a review of its phytochemistry and pharmacology'. *Asian Pacific Journal of Tropical Disease*. Vol. 4, No. 3, pp. 213-222.
- Pandey AV, Bisht H, Babbarwal VK, Srivastava J, Pandey KC, Chauhan VS, 2001. 'Mechanism of malarial heme detoxification inhibition by chloroquine'. *Biochemical Journal*, pp. 333-338
- Panossian A, Hovhannisyan A, Marmikonyan G, Abrahamian H, Hambardzumyan E, Gabrielian E, Goukasova G, Wikman G, Wagner, 2000. 'Pharmacokinetic and oral bioavailability of andrographolide from *Andrographis paniculata* fixed combination Kan Jang in rats and human'. *Phytomedicine*. Vol. 7. No. 5, pp. 351-364.
- Paul MO, Victoria EB, and Stephen AW, 2010. 'The molecular mechanism of action artemisinin – the debate continues'. *Review Molecule*. Vol. 15, pp. 1705-1721
- Platel DFN, Mangou F, Tribouley-Duret J, 1999. Role of glutathione in the detoxification of ferriprotoporphyrin IX in chloroquine resistant *Plasmodium berghei*. *Mol Biochem Parasitol*, Vol.98, pp. 215-223
- Prapanza I & Marianto LA, 2003. *Khasiat dan manfaat sambiloto raja pahit penakluk aneka penyakit*. Agro Media Pustaka, hlm. 120- 137.
- Philipson JD and Wright CW, 1991. 'Antiprotozoal agents plant sources'. *Planta Medica*. Vol. 57, No. 1, pp. 53-59
- Ratnani RD, Hartati I, Kurniasari L. 2012. 'Potensi produksi andrographolide dari sambiloto (*Andrographis paniculata* Nees) melalui proses ekstraksi hidrotropi'. *Momentum*. Vol. 8, No. 1. Pp. 6- 10.
- Resi, 2013. Pengaruh pemberian antimalaria herba sambiloto (*Andrographis paniculata* Nees) terhadap perkembangan stadium dan perubahan

- morfologi parasit *Plasmodium falciparum*. Tesis. Program Pascasarjana Universitas Airlangga, Surabaya.
- Risdawati, 2014. Mekanisme kerja andrografolida dari sambiloto (*Andrographis paniculata* Nees) sebagai senyawa antimalaria: kajian terhadap status oksidatif *Plasmodium berghei* ANKA'. Disertasi. Universitas Indonesia.
- Rosenthal PJ, 2001. 'Antimalarial chemotherapy, mechanism of action resistance and new direction in drug discovery'. *Memorial do Instituto Oswaldo Cruz On Line*. Vol. 96, No. 8, pp. 1185-1186.
- Rosenthal PJ, 2003. 'Review antimalarial drug discovery: old and new approaches'. *The Journal of Experimental Biology*. Vol. 206, pp. 3735-3744.
- Roberts L, Egan TJ, Joiner KA, Hoppe HC, 2008. 'Differential effects of quinoline antimalarials on endocytosis in *Plasmodium falciparum*'. *Antimicrobial Agents Chemother*. Vol. 52. No. 5, pp. 1840-1842.
- Sachanonta N, Chotivanich K, Chaisri U, Turner G, Ferguson D, Day N, Pongponratn E, 2011. 'Ultrastructural and real time microscopic changes in *P. falciparum*-infected red blood cells following treatment with antimalarial drugs'. *Ultrastructure Pathology*. Vol. 35, No. 5, pp. 214-225.
- Safitri EY, 2007. Penetapan parameter standar simplisia dan ekstrak etanol herba sambiloto (AP). Skripsi. Fakultas Farmasi Universitas Airlangga. Surabaya.
- Sandlin RD, Fong KY, Wicht JK, Carrell HM, Egan TJ, Wright DW, 2014. 'Identification of β -hematin inhibitors in a hight-throughput screening effort reveals scaffolds with in vitro antimalarial activity'. *International Journal for Parasitologi: Drugs and Drug Resistance*. Vol. 4, pp. 316-325.
- Saxena S, Pant N, Jain DC, Bhakuni RS, 2003. 'Antimalarial agent from plant source'. *Current Science*. Vol. 85, No. 9, pp.1314-1329.
- Sherman IW, 1998. *Malaria parasite biology, pathogenesis and protection*. ASM Press. Washington DC.
- Sijwali PS, Kato K, Seydel KB, Gut J, Klemba M, Goldberg DE, Miller LH, Rosenthal PJ, 2004. '*Plasmodium falciparum* cystein protease falcipain-1 is not essensial in erythrocytic stage malaria parasite'. *Proceed National Acad of Sci (PNAS)*. Vol.101, No. 23, pp. 8721-8726.
- Simamora D, Fitri LE, 2007. 'Resistensi obat malaria: mekanisme dan peran obat kombinasi obat antimalaria untuk mencegah'. *Jurnal Kedokteran Brawija*. Vol. 23, No. 2, pp. 82-91.

- Siripong PB, Kongkathip K, Preechanukool P, Picha K, WC Taylor, 1992. 'Cytotoxic diterpenoid constituents from *Andrographis paniculata* Nees leaves'. *J. Sci.Soc. Thailand*
- Siripong PB, Kongkathip K, Preechanukool P, Picha K, WC Taylor, 2003. *Andrographis paniculata*. Available from: <http://www.vitamin-herb-university.com>
- Soedarmo S, Garna H, Hadinegoro S & Satari H, 2012. *Buku ajar infeksi & pediatri tropis*. Edk 2. Ikatan Dokter Anak Indonesia, hlm. 23-45
- Soedarto, 2011. *Buku ajar parasitologi kedokteran*. CV. Sagung Seto. Hlm 165-190.
- Sullivan, 2001. *Hemozoin: biocrystal synthesized during the degradation of hemoglobin. review*. John Hopskin University, p: 129-136.
- Surolia N, Padmanaban G, 1991. 'Chloroquine inhibits heme dependent protein synthesis in *Plasmodium falciparum*'. *Proc. Natl. Acad. Sci. Vol. 88*, pp. 4786-4790.
- Sutanto I, Ismid IS, Sjarifuddin PK, Sungkar S, 2008. *Buku ajar parasitologi kedokteran*. Edk 4. Fakultas Kedokteran Universitas Airlangga, hlm. 234-246.
- Sutisna P, 2004. *Malaria secara ringkas: Dari pengetahuan dasar sampai terapan*. Cetakan pertama. Penerbit Buku Kedokteran EGC, hlm 88-113
- Suyanto, 1995. *Uji aktivitas antimalaria secara in vitro isolat Andrographis paniculata* Nees. Skripsi. Fakultas Farmasi Universitas Airlangga, Surabaya.
- Syafruddin D, Siregar JE, Asih PBS, 2009. *Antimalarial drug resistance in Indonesia: a molecular analysis*. Symposium of malaria control in Indonesia, Proceeding. TDC Airlangga University. Surabaya.
- Syamsuddin 2008, 'Penapisan senyawa antimalaria yang berasal dari tumbuhan'. *Jurnal Ilmu Kefarmasian Indonesia*. Vol. 6, No. 2, pp. 95-99
- Syamsudin, 2005. 'Mekanisme kerja obat antimalaria'. *Jurnal Ilmu Kefarmasian Indonesia*. Vol. 3, No. 1, pp. 37-40.
- Syarif RA, 2007. Aktivitas Antiplasmodium Fraksi Larut Eter Ekstrak Metanol Daun Kembang Bulan (*Tithonia diversifolia* (Hemsley) A. Gray) Pada *Plasmodium falciparum* secara *In vitro*. Tesis. Universitas Gadjah Mada, Yogyakarta.
- Tekwani BL and Walker LA, 2005. Targetting the hemozoin synthesized pathway for new antimalarial drug discovery: technologies for in vitro β -hematin formation assay. *Combinatorial Chemistry & High Throughput Screening*. Vol. 8, pp. 63-79

- Trager W and Jansen JB, 1976. 'Human malaria parasites in continuous culture'. *Science*. Vol. 193, pp. 673-675.
- Uys A, Malan SF, Van Dyk S, van Zyl RL, 2002. 'Antimalarial compounds from *Parinari capensis*'. *Bioorganic & Medicinal Chemistry Letters*. Vol. 12, pp.2167-9
- Weibo L, 1995. Andrographis, in-depth review. Diakses dari <http://www.alt-cancer.com>
- WHO, 2013. *World Malaria Report 2012, Malaria: prevention and control*. Geneva. Switzerland.
- Widyawaruyanti A, Ekasari W, Sukardiman, Studiawan H, Rakhmawati, 1995. *Uji antimalaria ekstrak herba sambiloto terhadap Plasmodium falciparum secara in vitro*, *Laporan Penelitian DIP OPF Unair 1994 – 1995*. Lembaga Penelitian Unair. Surabaya.
- Widyawaruyanti A, 2009. *Pengembangan fitofarmaka obat malaria dari fraksi diterpen lakton herba sambiloto (Andrographolis paniculata Nees)*. Lembaga Penelitian Universitas Airlangga. Surabaya.
- Widyawati T, 2007. 'Aspek farmakologi sambiloto (*Andrographis paniculata* Nees)'. *Majalah Kedokteran Nusantara*. Vol. 40, No. 3, pp. 216-222
- Winarto, 2004. *Sambiloto: Budidaya dan pemanfaatan untuk obat*. Penebar Swadaya, pp. 78-90.
- Wirahardja T, Moelyono, Muhtadi A, 2002. *Telaah farmakognosi dan fitokimia sambiloto*. Laporan Penelitian. Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Padjajaran. Bandung.
- Wiser MF, 2001. *Biochemistry of Plasmodium*. review, Tulane University
- Wiser, 2004. *Cellular and molecular biology of Plasmodium*. Review, Tulane University. Diakses dari www.tulane.edu/~wiser/malaria/cmb.html
- Wiser, 2008. *Biochemistry of Plasmodium*. review, Tulane University. Diakses dari www.tulane.edu/~wiser/malaria/fv.html.
- Yusron M, Januwati, Rini EP. *Budidaya tanaman sambiloto*. Badan Penelitian dan Pengembangan Pertanian. Balai Penelitian Tanaman Obat dan Aromatika. Sirkuler.
- Zein U, 2009. Perbandingan efikasi antimalaria ekstrak herba sambiloto (*Andrographis paniculata* Nees) tunggal dan kombinasi masing-masing dengan artesunat dan klorokuin pada pasien malaria falciparum tanpa komplikasi. Disertasi. Universitas Sumatera Utara. Jakarta.
- Ziegler HL, Staerk D, Christensen J, Hviid L, Hagestrand H, Jaroszewski JW, 2002. 'In vitro *Plasmodium falciparum* drug sensitivity assay: inhibition of parasite growth by incorporation of stomatocytogenic amphiphiles into

erythrocyte membrane'. *Antimicrobial Agents and Chemotherapy*. Vol. 46, No. 5, pp. 1441-1446.

Zuluaga L, Pabon A, Lopez C, Ochoa A, Blair S, 2007. 'Amodiaquine failure associated with erythrocytic glutathione in *Plasmodium falciparum* malaria'. *Malaria journal*. Vol. 4, No. 7.

