



## DAFTAR PUSTAKA

- Abosadiya, H.M., Hasbullah, S.A., Mackeen, M.M., Low, S.C., Ibrahim, N., Koketsu, M., and Yamin, B.M., 2013, Synthesis, Characterization, X-ray Structure and Biological Activities of C-5-Bromo-2-hydroxyphenylcalix[4]-2-methyl resorcinarene, *Molecules*, 6, 13369–13384.
- Ahmed, M.A., Ameyaw, E.O., Ackah-Armah, F., Acheampong, D.O., Amoani, B., Ampomah, P., et al., 2022, *In Vitro* and *In Vivo* Antimalarial Activities of *Avicennia Africana* P. Beauv. (Avicenniaceae) Ethanolic Leaf Extract, *J. Tradit. Complement. Med.*, 12, 391–401.
- Akar, Z., Küçük, M., and Doğan, H., 2017, A New Colorimetric DPPH• Scavenging Activity Method with No Need for a Spectrophotometer Applied on Synthetic and Natural Antioxidants and Medicinal Herbs, *J. Enzym. Inhib. Med. Chem.*, 32, 640–647.
- An, L., Wang, C., Zheng, Y.G., Liu, J. dong, and Huang, T. hui, 2021, Design, Synthesis and Evaluation of Calix[4]arene-based Carbonyl Amide Derivatives with Antitumor Activities, *Eur. J. Med. Chem.*, 210, 112984.
- Anonim., 2021, World malaria report 2021, World Health Organization.
- Ashley, E.A., Dhorda, M., Fairhurst, R.M., Amaratunga, C., Lim, P., Suon, S., et al., 2014, Spread of Artemisinin Resistance in *Plasmodium falciparum* Malaria , *N. Engl. J. Med.*, 371, 411–423.
- Autino, B., Noris, A., Russo, R., and Castelli, F., 2012, Epidemiology of Malaria in Endemic Areas, *Mediterr. J. Hematol. Infect. Dis.*, 4, e2012060.
- Baeyer, A., 1872, Ueber die Verbindungen der Aldehyde mit den Phenolen und aromatischen Kohlenwasserstoffen, *Berichte der Dtsch. Chem. Gesellschaft*, 5, 1094–1100.
- Balogun, E.A., Zailani, A.H., and Adebayo, J.O., 2014, Augmentation of Antioxidant System: Contribution to Antimalarial Activity of *Clerodendrum violaceum* Leaf Extract, *Tang Humanit. Med.*, 4, 26.1-26.9.
- Basco, L., 2007, Field Application of *In Vitro* Assays for The Sensitivity of Human Malaria Parasites to Antimalarial Drugs, Gevena.
- Basco, L.K., Mitaku, S., Skaltsounis, A.L., Ravelomanantsoa, N., Tillequin, F., Koch, M., and Le Bras, J., 1994, *In Vitro* Activities of Furoquinoline and Acridone Alkaloids Against *Plasmodium falciparum*, *Antimicrob. Agents Chemother.*, 38, 1169–1171.
- Batista, R., De Jesus Silva Júnior, A., and De Oliveira, A.B., 2009, Plant-derived



- Antimalarial Agents: New Leads and Efficient Phytomedicines. Part II. Non-Alkaloidal Natural Products, *Molecules*, 14, 3037–3072.
- Blois, M., 1958, Antioxidant Determinations by the Use of a Stable Free Radical, *Nature*, 181, 1199–1200.
- Cakmak, R., Durdagi, S., Ekinci, D., Sentürk, M., and Topal, G., 2011, Design, Synthesis and Biological Evaluation of Novel Nitroaromatic Compounds as Potent Glutathione Reductase Inhibitors, *Bioorganic Med. Chem. Lett.*, 21, 5398–5402.
- Cameron, A., Read, J., Tranter, R., Winter, V.J., Sessions, R.B., Brady, L.L., et al., 2004, Identification and Activity of a Series of Azole-based Compounds with Lactate Dehydrogenase-directed Anti-malarial Activity, *J. Biol. Chem.*, 279, 31429–31439.
- Chaniad, P., Mungthin, M., Payaka, A., Viriyavejakul, P., and Punsawad, C., 2021, Antimalarial Properties and Molecular Docking Analysis of Compounds from *Dioscorea bulbifera* L. as New Antimalarial Agent Candidates, *BMC Complement. Med. Ther.*, 21, 1–10.
- Choi, S.R., Beeler, A.B., Pradhan, A., Watkins, E.B., Rimoldi, J.M., Tekwani, B., and Avery, M.A., 2007, Generation of Oxamic Acid Libraries: Antimalarials and Inhibitors of *Plasmodium falciparum* Lactate Dehydrogenase, *J. Comb. Chem.*, 9, 292–300.
- Congpuong, K., Sirtichaisinthop, J., Tippawangkosol, P., Suprakrob, K., Na-Bangchang, K., Tan-Ariya, P., and Karbwang, J., 1998, Incidence of Antimalarial Pretreatment and Drug Sensitivity *In Vitro* in Multidrug-resistant *Plasmodium falciparum* Infection in Thailand, *Trans. R. Soc. Trop. Med. Hyg.*, 92, 84–86.
- Conners, R., Schambach, F., Read, J., Cameron, A., Sessions, R.B., Vivas, L., et al., 2005, Mapping The Binding Site for Gossypol-like Inhibitors of *Plasmodium falciparum* Lactate Dehydrogenase, *Mol. Biochem. Parasitol.*, 142, 137–148.
- Consoli, G.M.L., Granata, G., Ginestra, G., Marino, A., Toscano, G., and Nostro, A., 2022, Antibacterial Nanoassembled Calix[4]arene Exposing Choline Units Inhibits Biofilm and Motility of Gram Negative Bacteria, *ACS Med. Chem. Lett.*, 13, 916–922.
- Corbett, Y., Herrera, L., Gonzalez, J., Cubilla, L., Capson, T.L., Coley, P.D., et al., 2004, A Novel DNA-based Microfluorimetric Method to Evaluate Antimalarial Drug Activity, *Am. J. Trop. Med. Hyg.*, 70, 119–124.
- Cowman, A.F., Healer, J., Marapana, D., and Marsh, K., 2016, Malaria: Biology



- and Disease, *Cell*, 167, 610–624.
- Cram, D.J., Karbach, S., Kim, H., Knobler, C.B., Maverick, E.F., Ericson, J.L., and Helgeson, R.C., 1988, Host-Guest Complexation. 46. Cavitands as Open Molecular Vessels Form Solvates, *J. Am. Chem. Soc.*, 110, 2229–2237.
- Dangolani, S.K., Panahi, F., Tavaf, Z., Nourisefat, M., Yousefi, R., and Khalafi-Nezhad, A., 2018, Synthesis and Antioxidant Activity Evaluation of Some Novel Aminocarbonitrile Derivatives Incorporating Carbohydrate Moieties, *ACS Omega*, 3, 10341–10350.
- Dassonville-Klimpt, A., Schneider, J., Damiani, C., Tisnerat, C., Cohen, A., Azas, N., et al., 2022, Design, Synthesis, and Characterization of Novel Aminoalcohol Quinolines with Strong *In Vitro* Antimalarial Activity, *Eur. J. Med. Chem.*, 228, 113981–114007.
- Du, X., Li, Y., Xia, Y.L., Ai, S.M., Liang, J., Sang, P., et al., 2016, Insights into Protein–ligand Interactions: Mechanisms, Models, and Methods, *Int. J. Mol. Sci.*, 17, 1–34.
- Dunn, C.R., Banfield, M.J., Barker, J.J., Higham, C.W., Moreton, K.M., Turgut-Balik, D., et al., 1996, The Structure of Lactate Dehydrogenase from *Plasmodium falciparum* Reveals a New Target for Anti-malarial Design, *Nat. Struct. Biol.*, 3, 912–915.
- Dvořáková, H., Štursa, J., Čajan, M., and Moravcová, J., 2006, Synthesis and Conformational Properties of Partially Alkylated Methylen-bridged Resorc[4]arenes - Study of The “flip-flop” Inversion, *Eur. J. Org. Chem.*, 19, 4519–4527.
- Erdtman, H., Höglberg, S., Abrahmsen, S., and Nilsson, H., 1968, Cyclooligomeric Phenol-aldehyde Condensation Products I, *Tetrahedron Lett.*, 9, 1679–1682.
- Fahmy, S.A., Ponte, F., Fawzy, I.M., Sicilia, E., Bakowsky, U., and Azzazy, H.M.E.S., 2020, Host-guest Complexation of Oxaliplatin and Para-sulfonatocalix[n]arenes for Potential Use in Cancer Therapy, *Molecules*, 25, 5926.
- Fatmawati, Dwi R., 2021, Sintesis Turunan Kaliks[4]resorsinarena dan Uji Aktivitasnya sebagai Antimalaria, *Skripsi*, Departemen Kimia FMIPA, Universitas Gadjah Mada, Yogyakarta.
- Fletcher, T.E. and Beeching, N.J., 2013, Malaria, *J. R. Army Med. Corps*, 159, 158–166.
- Foti, M.C., 2015, Use and Abuse of the DPPH• Radical, *J. Agric. Food Chem.*, 63, 8765–8776.



Galindres, D.M., Cifuentes, D., Tinoco, L.E., Murillo-acevedo, Y., Rodrigo, M.M., Ribeiro, A.C.F., and Esteso, M.A., 2022, A Review of the Application of Resorcinarenes and SBA-15 in Drug Delivery, *Processes*, 10, 684.

Goodworth, K.J., Hervé, A.C., Stavropoulos, E., Hervé, G., Casades, I., Hill, A.M., et al., 2011, Synthesis and *In Vivo* Biological Activity of Large-ringed Calixarenes Against *Mycobacterium tuberculosis*, *Tetrahedron*, 67, 373–382.

Grellier, P., Schrevel, J., Šarlauskas, J., Anusevicius, Ž., Maroziene, A., Cenas, N., and Houee-Levin, C., 2001, Antiplasmodial Activity of Nitroaromatic and Quinoidal Compounds: Redox Potential vs Inhibition of Erythrocyte Glutathione Reductase, *Arch. Biochem. Biophys.*, 393, 199–206.

Gutsche, C.D., Rogers, J.S., Stewart, D., and See, K.A., 1990, Calixarenes: Paradoxes and Paradigms in Molecular Baskets, *Pure Appl. Chem.*, 62, 485–491.

Halliwell, B., 2006, Reactive Species and Antioxidants. Redox Biology is a Fundamental Theme of Aerobic Life, *Plant Physiol.*, 141, 312–322.

Handayani, S.N., Jumina, Mustofa, and Swasono, R.T., 2016, Antioxidant Assay of C-2-Hydroxyphenylcalix[4]resorcinarene Using DPPH Method, *Int. J. ChemTech Res.*, 9, 278–283.

Harizal, Jumina, and Wahyuningsih, T.D., 2015, Sintesis, Serapan Elektronik, dan Fotostabilitas Senyawa C-4-Benziloksifenilkaliks[4]pirogalolarena Dodekabenzoat, *Forum Ilm.*, 15, 405–415.

Hasbullah, A., M. Abosadiya, H., Jumina, J., M. Tahir, M.I., and Yamin, B.M., 2013, Synthesis, Structural and Antioxidant Properties of C-p-methoxyphenylcalix[4]resorcinarene, *Int. J. Adv. Sci. Eng. Inf. Technol.*, 3, 134.

Hedidi, M., Hamdi, S.M., Mazari, T., Boutemeur, B., and Rabia, C., 2006, Microwave-assisted Synthesis of Calix[4]resorcinarenes, *Molecules*, 62, 5652–5655.

Hegedus, O., Borovicza, B., Szarka, K., Vargová, A., Reménység, D., Maťová, A., et al., 2020, Fruit Red Colorants Impact on The Antiradical Activity Determined by DPPH Method, *Potravin. Slovak J. Food Sci.*, 14, 473–482.

Huang, D., Boxin, O.U., and Prior, R.L., 2005, The Chemistry Behind Antioxidant Capacity Assays, *J. Agric. Food Chem.*, 53, 1841–1856.

Huang, S.Y., Grinter, S.Z., and Zou, X., 2010, Scoring Functions and Their Evaluation Methods for Protein-ligand Docking: Recent Advances and Future Directions, *Phys. Chem. Chem. Phys.*, 12, 12899–12908.



- Huang, S.Y. and Zou, X., 2010, Advances and Challenges in Protein-Ligand Docking, *Int. J. Mol. Sci.*, 11, 3034.
- Hui, Y., Yu, S., Jiang, R., Long, J., Pei, L., Zhang, Z., et al., 2022, Synthesis and Structure of a Host-Guest Inclusion System Between C-iso-butyl-calix[4]methyl-resorcinarene and 1-propyl-pyrrolidine-2-carboxylic Acid, *J. Chem. Crystallogr.*, 52, 271–275.
- Iwanek, W., 1998, The Synthesis of Octamethoxyresorc[4]arenes Catalysed By Lewis acids, *Tetrahedron*, 54, 14089–14094.
- Iwanek, W., Urbaniak, M., and Bocheńska, M., 2002, The Template Synthesis and Complexation Properties of Methoxypyrogallo[4]arene, *Tetrahedron*, 58, 2239–2243.
- Iwanek, W. and Wzorek, A., 2009, Introduction to the Chirality of Resorcinarenes, *Mini. Rev. Org. Chem.*, 6, 398–411.
- Jumina, Amalina, I., Triono, S., Kurniawan, Y.S., and Priastomo, Y., 2021, Preliminary Investigation of Organocatalyst Activity Based on C-Arylcalix [4]-2-Methylresorcinarene Sulfonic Acid Materials for Biodiesel Production, *Bull. Korean Chem. Soc.*, 42, 403–409.
- Jumina, Kurniawan, Y.S., Sari, R., Purba, S.N.H.B., Radean, H., Priatmoko, Pranowo, D., Purwono, B., Julianus, J., Zulkarnain, A.K., Sholikhah, E.N., 2022, Synthesis and High Antioxidant Activity of C-Alkyl calix[4]resorcinarene and C-Alkylcalix[4]pyrogallolarene Derivatives, *Indones. J. Pharm.*, 33, 422–433.
- Jumina, Sarjono, E., Paramitha, B., Hendaryani, I., and Siswanta, D., 2007, Adsorption Characteristics of Pb(II) and Cr(III) onto C-4-Methoxyphenylcalix[4]resorcinarene in Batch and Fixed Bed Column Systems, *J. Chinese Chem. Soc.*, 54, 1167–1178.
- Jumina, Sarjono, R.E., Siswanta, D., Santosa, S.J., and Ohto, K., 2011, Adsorption Characteristics of Pb(II) and Cr(III) onto C-Methylcalix[4]resorcinarene, *J. Korean Chem. Soc.*, 55, 454–462.
- Jumina, Siswanta, D., Zulkarnain, A.K., Triono, S., Yuanita, E., Imawan, C., Fatmasari, N., Nursalim, I., 2019, Development of C-Arylcalix[4]resorcinarenes and C-Arylcalix[4]pyrogallolarenes as Antioxidant and UV-B Protector, *Indones. J. Chem.*, 19, 273–284.
- Karadag, A., Ozcelik, B., and Saner, S., 2009, Review of Methods to Determine Antioxidant Capacities, *Food Anal. Methods*, 2, 41–60.
- Khrapunov, S., Waterman, A., Persaud, R., and Chang, E.P., 2021, Structure, Function, and Thermodynamics of Lactate Dehydrogenases from Humans and



the Malaria Parasite *P. falciparum*, *Biochemistry*, 60, 3582–3595.

- Lee, J., Kim, T.I., Lê, H.G., Yoo, W.G., Kang, J.M., Ahn, S.K., et al., 2020, Genetic Diversity of *Plasmodium vivax* and *Plasmodium falciparum* Lactate Dehydrogenases in Myanmar Isolates, *Malar. J.*, 19, 1–15.
- Lei, Z., Wu, Z., Dong, S., Yang, D., Zhang, L., and Ke, Z., 2020, Chloroquine and Hydroxychloroquine in The Treatment of Malaria and Repurposing in Treating COVID-19, *Pharmacol. Ther.*, 216, 107672.
- Maroziene, A., Lesanavičius, M., Davioud-Charvet, E., Aliverti, A., Grellier, P., Šarlauskas, J., and Čenas, N., 2019, Antiplasmoidal Activity of Nitroaromatic Compounds: Correlation with Their Reduction Potential and Inhibitory Action on *Plasmodium falciparum* Glutathione Reductase, *Molecules*, 24, 1–15.
- McIldowie, M.J., Mocerino, M., Skelton, B.W., and White, A.H., 2000, Facile Lewis Acid Catalyzed Synthesis of C4 Symmetric Resorcinarenes, *Org. Lett.*, 2, 3869–3871.
- Meng, X.-Y., Zhang, H.X., Mezei, M., and Cui, M., 2011, Molecular Docking: A Powerful Approach for Structure-Based Drug Discovery, *Curr. Comput. Aided Drug Des.*, 7, 146–157.
- Meshnick, S.R., 1994, The Mode of Action of Antimalarial Endoperoxides, *Trans. R. Soc. Trop. Med. Hyg.*, 88, 31–32.
- Mourer, M., Psychogios, N., Laumond, G., Aubertin, A.M., and Regnouf-de-Vains, J.B., 2010, Synthesis and Anti-HIV Evaluation of Water-soluble Calixarene-based Bithiazolyl Podands, *Bioorganic Med. Chem.*, 18, 36–45.
- Mugittu, K., Genton, B., Mshinda, H., and Beck, H.P., 2006, Molecular Monitoring of *Plasmodium falciparum* Resistance to Artemisinin in Tanzania, *Malar. J.*, 5, 1–3.
- Muttaqin, S.S. and Maji, J.S., 2018, Screening of Oxamic Acid Similar 3D Structures as Candidate Inhibitor *Plasmodium falciparum* L-Lactate Dehydrogenase of Malaria Through Molecular Docking, *1st Int. Conf. Bioinformatics, Biotechnol. Biomed. Eng. - Bioinforma. Biomed. Eng.*, 1, 1–6.
- Ngurah, B.I.G.M., 2018, Synthetic C-Methoxyphenylcalix[4]resorcinarene and Its Antioxidant Activity, *J. Appl. Chem. Sci.*, 5, 403–408.
- Olugbami, J.O., Gbadegesin, M.A., and Odunola, O.A., 2014, *In Vitro* Evaluation of The Antioxidant Potential, Phenolic and Flavonoid Contents of The Stem Bark Ethanol Extract of *Anogeissus leiocarpus*, *Afr. J. Med. Med. Sci.*, 43, 101–109.
- Park, G.M., Park, H., Oh, S., and Lee, S., 2017, Antimalarial Activity of C-10



Substituted Triazolyl Artemisinin, *Korean J. Parasitol.*, 55, 661–665.

Penna-Coutinho, J., Cortopassi, W.A., Oliveira, A.A., França, T.C.C., and Krettli, A.U., 2011, Antimalarial Activity of Potential Inhibitors of *Plasmodium falciparum* Lactate Dehydrogenase Enzyme Selected By Docking Studies, *PLoS One*, 6, e21237.

Pfeiffer, C.R., Feaster, K.A., Dalgarno, S.J., and Atwood, J.L., 2015, Syntheses and Characterization of Aryl-substituted Pyrogallol[4]arenes and Resorcin[4]arenes, *CrystEngComm*, 18, 222–229.

Plachkova-Petrova, D., Petrova, P., Miloshev, S., and Novakov, C., 2012, Optimization of Reaction Conditions for Synthesis C-tetramethylcalix[4]resorcinarene, *Bulg. Chem. Commun.*, 44, 208–215.

Prior, R.L., Wu, X., and Schaich, K., 2005, Standardized Methods for The Determination of Antioxidant Capacity and Phenolics in Foods and Dietary Supplements, *J. Agric. Food Chem.*, 53, 4290–4302.

Priyangga, K.T.A., Kurniawan, Y.S., and Yuliati, L., 2020, Synthesis and Characterizations of C-3-Nitrophenylcalix[4]resorcinarene as a Potential Chemosensor for La(III) Ions, *IOP Conf. Ser. Mater. Sci. Eng.*, 959, 012014.

Rieckmann, K.H., Campbell, G.H., Sax, L.J., and Ema, J.E., 1978, Drug Sensitivity of *Plasmodium falciparum*. An In-Vitro Microtechnique., *Lancet*, 311, 22–23.

Rieckmann, K.H., McNamara, J. V., Frischer, H., Stockert, T.A., Carson, P.E., and Powell, R.D., 1968, Effects of Chloroquine, Quinine, and Cycloguanil upon the Maturation of Asexual Erythrocytic Forms of Two Strains of *Plasmodium falciparum* In Vitro, *Am. J. Trop. Med. Hyg.*, 17, 661–671.

Roberts, B.A., Cave, G.W.V., Raston, C.L., and Scott, J.L., 2001, Solvent-free Synthesis of Calix[4]resorcinarenes, *Green Chem.*, 3, 280–284.

Santos-Sánchez, N.F., Salas-Coronado, R., Villanueva-Cañongo, C., and Hernández-Carlos, B., 2019, Antioxidant : Antioxidant Compounds and Their Antioxidant Mechanism, *IntechOpen*, London.

Sardjono, R.E., Dwiyanti, G., Aisyah, S., and Khoerunnisa, F., 2008, Sintesis Kaliks[4]resorsinarena Dari Minyak Kayumanis Dan Penggunaannya Untuk Ekstraksi Fasa Padat Logam Berat Hg(II) Dan Pb(II), *Jurnal Pengajaran MIPA*, 12, 55.

Sardjono, R.E. and Rachmawati, R., 2017, Green Synthesis of Oligomer Calixarenes, *IntechOpen*, London.

Sayekti, E., Jumina, Siswanta, D., and Mustofa, 2020, Sintesis dan Aktivitas Antikanker Senyawa C-4-aliloksi-3-metoksifensikaliks[4]resorsinarena,



*Indones. J. Pure Appl. Chem.*, 3, 1–8.

- Sayekti, E., Siswanta, D., and Mada, G., 2016, Synthesis and Antioxidant Properties of C-4-allyloxy-phenylcalix[4]resorcinarene, *Int. J. ChemTech Res.*, 9, 594–599.
- Van Schalkwyk, D.A., 2015, *History of Antimalarial Agents*, eLS. John Wiley & Sons, Chichester.
- Septiana, I., Purwono, B., Anwar, C., Nurohmah, B.A., and Syahri, J., 2022, Synthesis and Docking Study of 2-Aryl-4,5-diphenyl-1H-imidazole Derivatives as Lead Compounds for Antimalarial Agent, *Indones. J. Chem.*, 22, 105–113.
- Setha, B., Gaspersz, F., Idris, A.P.S., Rahman, S., and Mailoa, M.N., 2013, Potential Of Seaweed Padina Sp. As A Source Of Antioxidant, *Int. J. Sci. Technol. Res.*, 2, 221–224.
- Shadrack, D.M., Nyandoro, S.S., Munissi, J.J.E., and Mubofu, E.B., 2016, In Silico Evaluation of Anti-Malarial Agents from Hoslundai opposita as Inhibitors of *Plasmodium falciparum* Lactate Dehydrogenase (PfLDH) Enzyme, *Comput. Mol. Biosci.*, 6, 23–32.
- Shah, R.B., Valand, N.N., Sutariya, P.G., and Menon, S.K., 2016, Design, Synthesis and Characterization of Quinoline-pyrimidine Linked Calix[4]arene Scaffolds as Anti-malarial Agents, *J. Incl. Phenom. Macrocycl. Chem.*, 84, 173–178.
- Shebitha, A.M., Shaibuna, M., Hiba, K., and Sreekumar, K., 2022, Synthesis, Characterization and DFT-D Studies of 2-Aminoethoxycalix[4]resorcinarennes: A Novel Heterogeneous Organocatalyst, *Catal. Lett.*, 152, 3017–3030.
- Sibley, C.H., 2015, Understanding Artemisinin Resistance, *Science.*, 347, 373–374.
- Siddeeg, A., AlKehayez, N.M., Abu-Hiamed, H.A., Al-Sanea, E.A., and AL-Farga, A.M., 2021, Mode of Action and Determination of Antioxidant Activity in The Dietary Sources: An Overview, *Saudi J. Biol. Sci.*, 28, 1633–1644.
- Simamora, D. and Fitri, L.E., 2007, Resistensi Obat Malaria: Mekanisme dan Peran Obat Kombinasi Obat Antimalaria untuk Mencegah, *J. Kedokt. Brawijaya*, 23, 82–91.
- Singh, R., Bhardwaj, V., and Purohit, R., 2021, Identification of a Novel Binding Mechanism of Quinoline Based Molecules with Lactate Dehydrogenase of *Plasmodium falciparum*, *J. Biomol. Struct. Dyn.*, 39, 348–356.
- Sinha, S., Sarma, P., Sehgal, R., and Medhi, B., 2017, Development in Assay Methods for *In Vitro* Antimalarial Drug Efficacy Testing: A Systematic



Review, *Front. Pharmacol.*, 8, 1–14.

Siswanta, D., Jumina, J., Anggraini, M., Mardjan, M.I.D., Mulyono, P., and Ohto, K., 2016, Adsorption Study of Pb(II) on Calix[4]resorcinarene Chitosan Hybrid, *Int. J. Appl. Chem.*, 12, 11–22.

Sohilait, M.R., Pranowo, H.D., and Haryadi, W., 2017, Molecular Docking Analysis of Curcumin Analogues with COX-2, *Bioinformation*, 13, 356–359.

Sullivan, D.J., Gluzman, I.Y., Russell, D.G., and Goldberg, D.E., 1996, On The Molecular Mechanism of Chloroquine's Antimalarial Action, *Proc. Natl. Acad. Sci. U. S. A.*, 93, 11865–11870.

Talapko, J., Škrlec, I., Alebić, T., Jukić, M., and Včev, A., 2019, Malaria: The Past and The Present, *Microorganisms*, 7, 179.

Tian, L., Zhou, J., Lv, Q., Liu, F., Yang, T., Zhang, X., et al., 2021, Rational Engineering of The *Plasmodium falciparum* L-lactate Dehydrogenase Loop Involved in Catalytic Proton Transfer to Improve Chiral 2-Hydroxybutyric Acid Production, *Int. J. Biol. Macromol.*, 179, 71–79.

Timmerman, P., Verboom, W., and Reinhoudt, D.N., 1996, Resorcinarenes, *Tetrahedron*, 52, 2663–2704.

Trott, O. and Olson, A.J., 2010, AutoDock Vina: Improving the Speed and Accuracy of Docking with A New Scoring Function, Efficient Optimization and Multithreading, *J. Comput. Chem.*, 31, 455–461.

Tukulula, M., Sharma, R.K., Meurillon, M., Mahajan, A., Naran, K., Warner, D., et al., 2013, Synthesis and Antiplasmodial and Antimycobacterial Evaluation of New Nitroimidazole and Nitroimidazooxazine Derivatives, *ACS Med. Chem. Lett.*, 4, 128–131.

Utomo, S.B., Siswanta, D., and Kumar, N., 2011, Synthesis of Thiomethylated Calix[4]resorcinarene Based On Fennel Oil Via Chloromethylation, *Indones. J. Chem.*, 11, 1–8.

Velázquez-Libera, J.L., Durán-Verdugo, F., Valdés-Jiménez, A., Valdés-Jiménez, A., Núñez-Vivanco, G., and Caballero, J., 2020, LigRMSD: A Web Server for Automatic Structure Matching and RMSD Calculations Among Identical and Similar Compounds in Protein-ligand Docking, *Bioinformatics*, 36, 2912–2914.

Venugopal, K., Hentzschel, F., Valkiūnas, G., and Marti, M., 2020, Plasmodium Asexual Growth and Sexual Development in The Haematopoietic Niche of The Host, *Nat. Rev. Microbiol.*, 18, 177–189.

Vona, R., Pallotta, L., Cappelletti, M., Severi, C., and Matarrese, P., 2021, The



Impact of Oxidative Stress in Human Pathology: Focus on Gastrointestinal Disorders, *Antioxidants (Basel)*, 10, 201.

Wati, W., Pamudji Widodo, G., and Herowati, R., 2020, Prediction of Pharmacokinetics Parameter and Molecular Docking Study of Antidiabetic Compounds from *Syzygium polyanthum* and *Syzygium cumini*, *J. Kim. Sains dan Apl.*, 23, 189–195.

Wicht, K.J., Mok, S., and Fidock, D.A., 2020, Molecular Mechanisms of Drug Resistance in *Plasmodium falciparum* Malaria, *Annu. Rev. Microbiol.*, 74, 431–454.

Widyawaruyanti, A., Puspita Devi, A., Fatria, N., Tumewu, L., Tantular, I.S., and Fuad Hafid, A., 2014, *In Vitro* Antimalarial Activity Screening of Several Indonesian Plants Using HRP2 Assay, *Int. J. Pharm. Pharm. Sci.*, 6, 125–128.

Yamin, M.B., Abosadiya, M.H., Aisah Hasbullah, S., and Jumina, J., 2014, Structural, Antioxidant and Antivarial Studies of C-3-Nitrophenylcalix[4]resorcinarene, *Int. J. Adv. Sci. Eng. Inf. Technol.*, 4, 125.

Yu, W. and MacKerell, A.J., 2017, Computer-Aided Drug Design Methods, *Methods Mol Biol.*, 1520, 85–106.

Yusof, N.N.M., Kikuchi, Y., and Kobayashi, T., 2013, Ionic Imprinted Calix[4]resorcinarene Host for Pb(II) Adsorbent Using Diallylaminomethyl-Calix[4]resorcinarene Copolymer, *Chem. Soc. Japan*, 42, 1119–1121.