

## DAFTAR PUSTAKA

- Adekunle, A. I., Pinkevych, M., McGready, R., Luxemburger, C., White, L. J., Nosten, F., Cromer, D. & Davenport, M. P. (2015) Modeling the dynamics of *Plasmodium vivax* infection and hypnozoite reactivation in vivo. *PLoS Negl Trop Dis*, 9(3): e0003595.
- Akpogheneta, O. J., Duah, N. O., Tetteh, K. K., Dunyo, S., Lanar, D. E., Pinder, M. & Conway, D. J. (2008) Duration of naturally acquired antibody responses to blood-stage *Plasmodium falciparum* is age dependent and antigen specific. *Infection and Immunity*, 76(4): 1748-1755.
- Akpogheneta, O. J., Dunyo, S., Pinder, M. & Conway, D. J. (2010) Boosting antibody responses to *Plasmodium falciparum* merozoite antigens in children with highly seasonal exposure to infection. *Parasite Immunol*, 32(4): 296-304.
- al-Yaman, F., Genton, B., Kramer, K. J., Chang, S. P., Hui, G. S., Baisor, M. & Alpers, M. P. (1996) Assessment of the role of naturally acquired antibody levels to *Plasmodium falciparum* merozoite surface protein-1 in protecting Papua New Guinean children from malaria morbidity. *Am J Trop Med Hyg*, 54(5): 443-8.
- Allen, C. D., Okada, T., Tang, H. L. & Cyster, J. G. (2007) Imaging of germinal center selection events during affinity maturation. *Science*, 315(5811): 528-531.
- Ansar, W., Habib, S. H., Roy, S., Mandal, C. & Mandal, C. (2009) Unraveling the C-reactive protein complement-cascade in destruction of red blood cells: potential pathological implications in *Plasmodium falciparum* malaria. *Cellular Physiology and Biochemistry*, 23(1-3): 175-190.
- Anstey, N. M., Weinberg, J. B., Hassanali, M. Y., Mwaikambo, E. D., Manyenga, D., Misukonis, M. A., Arnelle, D. R., Hollis, D., McDonald, M. & Granger, D. L. (1996) Nitric oxide in Tanzanian children with malaria: inverse relationship between malaria severity and nitric oxide production/nitric oxide synthase type 2 expression. *J Exp Med*, 184(2): 557-567.
- Anum, D., Kusi, K. A., Ganeshan, H., Hollingdale, M. R., Ofori, M. F., Koram, K. A., Gyan, B. A., Adu-Amankwah, S., Badji, E. & Huang, J. (2015) Measuring naturally acquired ex vivo IFN- $\gamma$  responses to *Plasmodium falciparum* cell-traversal protein for ookinetes and sporozoites (CelTOS) in Ghanaian adults. *Malaria journal*, 14(1): 1-8.
- Araj, B. N., Swihart, B., Morrison, R., Gonzales Hurtado, P., Teo, A., Mahamar, A., Attaher, O., Diarra, B. S., Gaoussou, S. & Issiaka, D. (2021) Antibody Levels to *Plasmodium falciparum* Erythrocyte Membrane Protein 1-DBL $\gamma$ 11 and DBL $\delta$ -1 Predict Reduction in Parasite Density. *Msystems*, 6(3): e00347-21.
- Arumugam, T. U., Takeo, S., Yamasaki, T., Thonkukiatkul, A., Miura, K., Otsuki, H., Zhou, H., Long, C. A., Sattabongkot, J. & Thompson, J. (2011) Discovery of GAMA, a *Plasmodium falciparum* merozoite micronemal protein, as a novel blood-stage vaccine candidate antigen. *Infect Immun*, 79(11): 4523-4532.
- Autino, B., Corbett, Y., Castelli, F. & Taramelli, D. (2012) Pathogenesis of malaria in tissues and blood. *Mediterr J Hematol Infect Dis*, 4(1).
- Aydin-Schmidt, B., Mubi, M., Morris, U., Petzold, M., Ngasala, B. E., Premji, Z., Björkman, A. & Mårtensson, A. (2013) Usefulness of *Plasmodium falciparum*-specific rapid diagnostic tests for assessment of parasite clearance and detection of

- recurrent infections after artemisinin-based combination therapy. *Malaria journal*, 121-11.
- Baird, J. K. (1995) Host age as a determinant of naturally acquired immunity to *Plasmodium falciparum*. *Parasitol Today*, 11(3): 105-111.
- Barber, B. E., William, T., Grigg, M. J., Yeo, T. W. & Anstey, N. M. (2013) Limitations of microscopy to differentiate *Plasmodium* species in a region co-endemic for *Plasmodium falciparum*, *Plasmodium vivax* and *Plasmodium knowlesi*. *Malar J*, 128.
- Battle, K. E., Karhunen, M. S., Bhatt, S., Gething, P. W., Howes, R. E., Golding, N., Van Boeckel, T. P., Messina, J. P., Shanks, G. D. & Smith, D. L. (2014) Geographical variation in *Plasmodium vivax* relapse. *Malaria journal*, 13(1): 1-16.
- Bayer, B. F., W Hübl, PM (2001) Immunofluorescence assays (IFA) and enzyme-linked immunosorbent assays (ELISA) in autoimmune disease diagnostics-technique, benefits, limitations and applications. *Scandinavian Journal of Clinical and Laboratory Investigation*, 61(235): 68-76.
- Beeson, J. G., Drew, D. R., Boyle, M. J., Feng, G., Fowkes, F. J. & Richards, J. S. (2016) Merozoite surface proteins in red blood cell invasion, immunity and vaccines against malaria. *FEMS Microbiol Rev*, 40(3): 343-372.
- Beeson, J. G., Osier, F. H. & Engwerda, C. R. (2008) Recent insights into humoral and cellular immune responses against malaria. *Trends in parasitology*, 24(12): 578-584.
- Beisel, W. R. (1996) Nutrition and Immune Function: Overview. *The Journal of Nutrition*, 126(suppl\_10): 2611S-2615S.
- Bergmann-Leitner, E. S., Duncan, E. H., Mease, R. M. & Angov, E. (2012) Impact of pre-existing MSP1 42-allele specific immunity on potency of an erythrocytic *Plasmodium falciparum* vaccine. *Malaria journal*, 111-15.
- Bergmann-Leitner, E. S., Duncan, E. H., Mullen, G. E., Burge, J. R., Khan, F., Long, C. A., Angov, E. & Lyon, J. A. (2006) Critical evaluation of different methods for measuring the functional activity of antibodies against malaria blood stage antigens. *Am J Trop Med Hyg*, 75(3): 437-442.
- Bhatt, S., Weiss, D., Cameron, E., Bisanzio, D., Mappin, B., Dalrymple, U., Battle, K., Moyes, C., Henry, A. & Eckhoff, P. (2015) The effect of malaria control on *Plasmodium falciparum* in Africa between 2000 and 2015. *Nature*, 526(7572): 207-211.
- Bijker, E. M., Teirlinck, A. C., Schats, R., van Gemert, G.-J., van de Vegte-Bolmer, M., van Lieshout, L., IntHout, J., Hermsen, C. C., Scholzen, A. & Visser, L. G. (2014) Cytotoxic markers associate with protection against malaria in human volunteers immunized with *Plasmodium falciparum* sporozoites. *J. Infect. Dis*, 210(10): 1605-1615.
- Blackman, M. J., Chappel, J. A., Shai, S. & Holder, A. A. (1993) A conserved parasite serine protease processes the *Plasmodium falciparum* merozoite surface protein-1. *Molecular and Biochemical Parasitology*, 62(1): 103-114.
- Boes, A., Spiegel, H., Voepel, N., Edgue, G., Beiss, V., Kapelski, S., Fendel, R., Scheuermayer, M., Pradel, G. & Bolscher, J. M. (2015) Analysis of a multi-component multi-stage malaria vaccine candidate—tackling the cocktail challenge. *PLoS ONE*, 10(7): e0131456.

- Boyle, M. J., Reiling, L., Feng, G., Langer, C., Osier, F. H., Aspeling-Jones, H., Cheng, Y. S., Stubbs, J., Tetteh, K. K. & Conway, D. J. (2015) Human antibodies fix complement to inhibit Plasmodium falciparum invasion of erythrocytes and are associated with protection against malaria. *Immunity*, 42(3): 580-590.
- Boyle, M. J., Wilson, D. W., Richards, J. S., Riglar, D. T., Tetteh, K. K., Conway, D. J., Ralph, S. A., Baum, J. & Beeson, J. G. (2010) Isolation of viable Plasmodium falciparum merozoites to define erythrocyte invasion events and advance vaccine and drug development. *Proc Natl Acad Sci U S A*, 107(32): 14378-83.
- Braga, E. M., Barros, R. M., Reis, T. A., Fontes, C. J., Morais, C. G., Martins, M. S. & Krettli, A. U. (2002) Association of the IgG response to Plasmodium falciparum merozoite protein (C-terminal 19 kD) with clinical immunity to malaria in the Brazilian Amazon region. *Am J Trop Med Hyg*, 66.
- Branch, O. H., Udhayakumar, V., Hightower, A. W., Oloo, A. J., Hawley, W. A., Nahlen, B. L., Bloland, P. B., Kaslow, D. C. & Lal, A. A. (1998) A longitudinal investigation of IgG and IgM antibody responses to the merozoite surface protein-1 19-kiloDalton domain of Plasmodium falciparum in pregnant women and infants: associations with febrile illness, parasitemia, and anemia. *Am J Trop Med Hyg*, 58(2): 211-219.
- Bria, Y. P., Yeh, C. H. & Bedingfield, S. (2021) Significant symptoms and nonsymptom-related factors for malaria diagnosis in endemic regions of Indonesia. *Int J Infect Dis*, 103194-200.
- Bull, P. C. & Marsh, K. (2002) The role of antibodies to Plasmodium falciparum-infected-erythrocyte surface antigens in naturally acquired immunity to malaria. *Trends in microbiology*, 10(2): 55-58.
- Burns, J. M., Jr., Miura, K., Sullivan, J., Long, C. A. & Barnwell, J. W. (2016) Immunogenicity of a chimeric Plasmodium falciparum merozoite surface protein vaccine in Aotus monkeys. *Malar J*, 15159.
- Carvalho, L. J., Ferreira-da-Cruz, M. F., Daniel-Ribeiro, C. T., Pelajo-Machado, M. & Lenzi, H. L. (2007) Germinal center architecture disturbance during Plasmodium berghei ANKA infection in CBA mice. *Malaria journal*, 6(1): 1-8.
- Chalouni, C., Banchereau, J., Vogt, A. B., Pascual, V. & Davoust, J. (2003) Human germinal center B cells differ from naive and memory B cells by their aggregated MHC class II-rich compartments lacking HLA-DO. *International Immunology*, 15(4): 457-466.
- Chan, Y., Martin, D., Mace, K. E., Jean, S. E., Stresman, G., Drakeley, C., Chang, M. A., Lemoine, J. F., Udhayakumar, V., Lammie, P. J., Priest, J. W. & Rogier, E. W. (2022) Multiplex Serology for Measurement of IgG Antibodies Against Eleven Infectious Diseases in a National Serosurvey: Haiti 2014-2015. *Frontiers in public health*, 10897013.
- Chandramohan, D., Carneiro, I., Kavishwar, A., Brugha, R., Desai, V. & Greenwood, B. (2001) A clinical algorithm for the diagnosis of malaria: results of an evaluation in an area of low endemicity. *Tropical Medicine & International Health*, 6(7): 505-510.
- Chandrasiri, U. P., Randall, L. M., Saad, A. A., Bashir, A. M., Rogerson, S. J. & Adam, I. (2014) Low antibody levels to pregnancy-specific malaria antigens and heightened

- cytokine responses associated with severe malaria in pregnancy. *J Infect Dis*, 209(9): 1408-17.
- Chappel, J. A. & Holder, A. A. (1993) Monoclonal antibodies that inhibit Plasmodium falciparum invasion in vitro recognise the first growth factor-like domain of merozoite surface protein-1. *Molecular and Biochemical Parasitology*, 60(2): 303-311.
- Cherif, M. K., Ouédraogo, O., Sanou, G. S., Diarra, A., Ouédraogo, A., Tiono, A., Cavanagh, D. R., Michael, T., Konaté, A. T. & Watson, N. L. (2017) Antibody responses to P. falciparum blood stage antigens and incidence of clinical malaria in children living in endemic area in Burkina Faso. *BMC Res Notes*, 10(1): 472.
- Chotivanich, K., Silamut, K. & Day, N. P. (2006) Laboratory diagnosis of malaria infection. *Australian Journal of Medical Science*, 27(1): 11-15.
- Chuangchaiya, S., Jangpatarapongsa, K., Chootong, P., Sirichaisinthop, J., Sattabongkot, J., Pattanapanyasat, K., Chotivanich, K., Troye-Blomberg, M., Cui, L. & Udomsangpetch, R. (2010) Immune response to Plasmodium vivax has a potential to reduce malaria severity. *Clin Exp Immunol*, 160(2): 233-9.
- Chuangchaiya, S. & Persson, K. E. (2013) How should antibodies against P. falciparum merozoite antigens be measured? *Journal of tropical medicine*, 2013.
- Cohee Lauren, S. K. (2022) *Malaria: Clinical manifestations and diagnosis in nonpregnant adults and children* [Online]. Available: <https://www.uptodate.com/contents/malaria-clinical-manifestations-and-diagnosis-in-nonpregnant-adults-and-children> [Accessed October 13, 2022 2022].
- Cohen, S., Butcher, G. & Crandall, R. (1969) Action of malarial antibody in vitro. *Nature*, 223(5204): 368.
- Cohen, S., McGregor, I. & Carrington, S. (1961) Gamma-globulin and acquired immunity to human malaria. *Nature*, 192733-7.
- Coleman, R. E., Sattabongkot, J., Promstaporm, S., Maneechai, N., Tippayachai, B., Kengluetcha, A., Rachapaew, N., Zollner, G., Miller, R. S. & Vaughan, J. A. (2006) Comparison of PCR and microscopy for the detection of asymptomatic malaria in a Plasmodium falciparum/vivax endemic area in Thailand. *Malaria journal*, 5(1): 1-7.
- Coler, R., Carter, D., Friede, M. & Reed, S. (2009) Adjuvants for malaria vaccines. *Parasite Immunology*, 31(9): 520-528.
- Collins, E., Vaselli, N. M., Sylla, M., Beavogui, A. H., Orsborne, J., Lawrence, G., Wiegand, R. E., Irish, S. R., Walker, T. & Messenger, L. A. (2019) The relationship between insecticide resistance, mosquito age and malaria prevalence in Anopheles gambiae sl from Guinea. *Scientific Reports*, 9(1): 8846.
- Collins, W. E. & Jeffery, G. M. (1999) A retrospective examination of secondary sporozoite- and trophozoite-induced infections with Plasmodium falciparum: development of parasitologic and clinical immunity following secondary infection. *The American journal of tropical medicine and hygiene*, 61(1\_Supplement): 20-35.
- Corran, P., Coleman, P., Riley, E. & Drakeley, C. (2007) Serology: a robust indicator of malaria transmission intensity? *Trends Parasitol*, 23(12): 575-82.
- Corran, P. H., Cook, J., Lynch, C., Leendertse, H., Manjurano, A., Griffin, J., Cox, J., Abeku, T., Bousema, T., Ghani, A. C., Drakeley, C. & Riley, E. (2008) Dried blood

- spots as a source of anti-malarial antibodies for epidemiological studies. *Malar J*, 7195.
- Costa, E. M. F., Amador, E. C. C., Silva, E. S., Alvarenga, C. O., Pereira, P. E., Póvoa, M. M. & Cunha, M. G. (2020) Malaria transmission and individual variability of the naturally acquired IgG antibody against the Plasmodium vivax blood-stage antigen in an endemic area in Brazil. *Acta tropica*, 209105537.
- Cowman, A. F. & Crabb, B. S. (2006) Invasion of red blood cells by malaria parasites. *Cell*, 124(4): 755-766.
- Craige, B., Alving, A. S., Jones, R., Whorton, C. M., Pullman, T. N. & Eichelberger, L. (1947) The Chesson strain of Plasmodium vivax malaria: II. Relationship between prepatent period, latent period and relapse rate. *The Journal of infectious diseases*, 80(3): 228-236.
- Crompton, P. D., Kayala, M. A., Traore, B., Kayentao, K., Ongoiba, A., Weiss, G. E., Molina, D. M., Burk, C. R., Waisberg, M. & Jasinskas, A. (2010) A prospective analysis of the Ab response to Plasmodium falciparum before and after a malaria season by protein microarray. *Proc Natl Acad Sci*, 107(15): 6958-6963.
- Crowther, J. R. (2009) *The ELISA guidebook*: Springer.
- Dakić, Z., Ivović, V., Pavlović, M., Lavadinović, L., Marković, M. & Djurković-Djaković, O. (2014) Clinical significance of molecular methods in the diagnosis of imported malaria in returning travelers in Serbia. *International Journal of Infectious Diseases*, 2924-30.
- Daly, T. M. & Long, C. A. (1995) Humoral response to a carboxyl-terminal region of the merozoite surface protein-1 plays a predominant role in controlling blood-stage infection in rodent malaria. *Journal of immunology (Baltimore, Md.: 1950)*, 155(1): 236-243.
- Dasari, P., Heber, S. D., Beisele, M., Torzewski, M., Reifenberg, K., Orning, C., Fries, A., Zapf, A.-L., Baumeister, S. & Lingelbach, K. (2012) Digestive vacuole of Plasmodium falciparum released during erythrocyte rupture dually activates complement and coagulation. *Blood, The Journal of the American Society of Hematology*, 119(18): 4301-4310.
- Deo, D. A., Herningtyas, E. H., Intansari, U. S., Perdana, T. M., Murhandarwati, E. H. & Soesatyo, M. H. N. E. (2022) Difference between Microscopic and PCR Examination Result for Malaria Diagnosis and Treatment Evaluation in Sumba Barat Daya, Indonesia. *Tropical Medicine and Infectious Disease*, 7(8): 153.
- Deo, V. K., Inagaki, Y., Murhandarwati, E. H., Asmara, W., Miyazaki, T., Kato, T. & Park, E. Y. (2019) Sero-diagnostic potential of Plasmodium falciparum recombinant merozoite surface protein (MSP)-3 expressed in silkworm. *Parasitol Int*, 72101938.
- Deroost, K., Pham, T.-T., Opendakker, G. & Van den Steen, P. E. (2015) The immunological balance between host and parasite in malaria. *FEMS microbiology reviews*, 40(2): 208-257.
- Dinas Kesehatan, P. N. T. T. (2021) Laporan Situasi Terkini Perkembangan Program Pengendalian Malaria Di Indonesia
- Tahun 2020; Dinas Kesehatan Provinsi Nusa Tenggara Timur: Kupang, Indonesia, 2021. Kupang, Indonesia: Dinas Kesehatan Provinsi Nusa Tenggara Timur.
- Dixit, C. K., Vashist, S. K., O'Neill, F. T., O'Reilly, B., MacCraith, B. D. & O'Kennedy, R. (2010) Development of a high sensitivity rapid sandwich ELISA procedure and

- its comparison with the conventional approach. *Analytical chemistry*, 82(16): 7049-7052.
- Dodoo, D., Atuguba, F., Bosomprah, S., Ansah, N. A., Ansah, P., Lamptey, H., Egyir, B., Oduro, A. R., Gyan, B. & Hodgson, A. (2011) Antibody levels to multiple malaria vaccine candidate antigens in relation to clinical malaria episodes in children in the Kasena-Nankana district of Northern Ghana. *Malar J*, 10(1): 108.
- Dorfman, J. R., Bejon, P., Ndungu, F. M., Langhorne, J., Kortok, M. M., Lowe, B. S., Mwangi, T. W., Williams, T. N. & Marsh, K. (2005) B cell memory to 3 *Plasmodium falciparum* blood-stage antigens in a malaria-endemic area. *Journal of Infectious Diseases*, 191(10): 1623-1630.
- Drakeley, C. J., Corran, P. H., Coleman, P. G., Tongren, J. E., McDonald, S. L., Carneiro, I., Malima, R., Lusingu, J., Manjurano, A., Nkya, W. M., Lemnge, M. M., Cox, J., Reyburn, H. & Riley, E. M. (2005) Estimating medium- and long-term trends in malaria transmission by using serological markers of malaria exposure. *Proc Natl Acad Sci U S A*, 102(14): 5108-13.
- Egan, A. F., Burghaus, P., Druilhe, P., Holder, A. A. & Riley, E. M. (1999) Human antibodies to the 19 kDa C-terminal fragment of *Plasmodium falciparum* merozoite surface protein 1 inhibit parasite growth in vitro. *Parasite Immunol*, 21(3): 133-139.
- Egan, A. F., Morris, J., Barnish, G., Allen, S., Greenwood, B. M., Kaslow, D. C., Holder, A. A. & Riley, E. M. (1996) Clinical immunity to *Plasmodium falciparum* malaria is associated with serum antibodies to the 19-kDa C-terminal fragment of the merozoite surface antigen, PfMSP-1. *J Infect Dis*, 173(3): 765-9.
- Ehtesham, R., Fazaeli, A., Raeisi, A., Keshavarz, H. & Heidari, A. (2015) Detection of mixed-species infections of *Plasmodium falciparum* and *Plasmodium vivax* by nested PCR and rapid diagnostic tests in southeastern Iran. *Am J Trop Med Hyg*, 93(1): 181-5.
- Eisen, D. P., Wang, L., Jouin, H., Murhandarwati, E. E., Black, C. G., Mercereau-Puijalon, O. & Coppel, R. L. (2007) Antibodies elicited in adults by a primary *Plasmodium falciparum* blood-stage infection recognize different epitopes compared with immune individuals. *Malar J*, 686.
- Engers, H. (1998) Corrigendum: Engers, HD and Godal, T. Malaria vaccine development: current status. *Parasitol. Today* 14, 56–64, 1998. *Parasitology Today*, 14(5): 192.
- Esposito, F., Lombardi, S., Modiano, D., Habluetzel, A., Del Nero, L., Lamizana, L., Pietra, V., Rotigliano, G., Corradin, G., Ravot, E. & et al. (1992) In vitro immune recognition of synthetic peptides from the *Plasmodium falciparum* CS protein by individuals naturally exposed to different sporozoite challenge. *Immunol Lett*, 33(2): 187-99.
- Fernandez-Becerra, C., Lelievre, J., Ferrer, M., Anton, N., Thomson, R., Peligero, C., Almela, M. J., Lacerda, M. V., Herreros, E. & Del Portillo, H. A. (2013) Red blood cells derived from peripheral blood and bone marrow CD34<sup>+</sup> human haematopoietic stem cells are permissive to *Plasmodium* parasites infection. *Mem Inst Oswaldo Cruz*, 108(6): 801-3.
- Fernandez-Becerra, C., Sanz, S., Brucet, M., Stanisic, D. I., Alves, F. P., Camargo, E. P., Alonso, P. L., Mueller, I. & del Portillo, H. A. (2010) Naturally-acquired humoral immune responses against the N- and C-termini of the *Plasmodium vivax* MSP1

- protein in endemic regions of Brazil and Papua New Guinea using a multiplex assay. *Malaria journal*, 9(1): 29.
- Ferreira, M. U., Zilvermit, M. & Wunderlich, G. (2007) Origins and evolution of antigenic diversity in malaria parasites. *Current molecular medicine*, 7(6): 588-602.
- Fontecha, G. A., Mendoza, M., Banegas, E., Poorak, M., De Oliveira, A. M., Mancero, T., Udhayakumar, V., Lucchi, N. W. & Mejia, R. E. (2012) Comparison of molecular tests for the diagnosis of malaria in Honduras. *Malar J*, 11119.
- Ford, L., Lobo, C. A., Rodriguez, M., Zalis, M. G., Machado, R. L., Rossit, A. R., Cavasini, C. E., Couto, A. A., Enyong, P. A. & Lustigman, S. (2007) Differential antibody responses to Plasmodium falciparum invasion ligand proteins in individuals living in malaria-endemic areas in Brazil and Cameroon. *Am J Trop Med Hyg*, 77(5): 977-83.
- Fowkes, F. J., Richards, J. S., Simpson, J. A. & Beeson, J. G. (2010) The relationship between anti-merozoite antibodies and incidence of Plasmodium falciparum malaria: A systematic review and meta-analysis. *PLoS medicine*, 7(1): e1000218.
- Früh, K., Doumbo, O., Müller, H. M., Koita, O., McBride, J., Crisanti, A., Touré, Y. & Bujard, H. (1991) Human antibody response to the major merozoite surface antigen of Plasmodium falciparum is strain specific and short-lived. *Infect Immun*, 59(4): 1319.
- Fujioka, H. & Aikawa, M. (2002) Structure and life cycle. *Chem Immunol*, 80(1): 1-26.
- Genton, B., Betuela, I., Felger, I., Al-Yaman, F., Anders, R. F., Saul, A., Rare, L., Baisor, M., Lorry, K. & Brown, G. V. (2002) A recombinant blood-stage malaria vaccine reduces Plasmodium falciparum density and exerts selective pressure on parasite populations in a phase 1-2b trial in Papua New Guinea. *The Journal of infectious diseases*, 185(6): 820-827.
- Giribaldi, G., D'Alessandro, S., Prato, M. & Basilico, N. (2015) Etiopathogenesis and Pathophysiology of Malaria. *Human and Mosquito Lysozymes*. Springer.
- Golassa, L., Enweji, N., Erko, B., Aseffa, A. & Swedberg, G. (2013) Detection of a substantial number of sub-microscopic Plasmodium falciparum infections by polymerase chain reaction: a potential threat to malaria control and diagnosis in Ethiopia. *Malaria journal*, 12(1): 1-10.
- Gonzales, S. J., Reyes, R. A., Braddom, A. E., Batugedara, G., Bol, S. & Bunnik, E. M. (2020) Naturally Acquired Humoral Immunity Against Plasmodium falciparum Malaria. *Front Immunol*, 11594653.
- Good-Jacobson, K. L. & Tarlinton, D. M. (2012) Multiple routes to B-cell memory. *Int Immunol.*, 24(7): 403-408.
- Gordon, D. M. (1993) Use of novel adjuvants and delivery systems to improve the humoral and cellular immune response to malaria vaccine candidate antigens. *Vaccine*, 11(5): 591-3.
- Greenhouse, B., Ho, B., Hubbard, A., Njama-Meya, D., Narum, D. L., Lanar, D. E., Dutta, S., Rosenthal, P. J., Dorsey, G. & John, C. C. (2011) Antibodies to Plasmodium falciparum antigens predict a higher risk of malaria but protection from symptoms once parasitemic. *J Infect Dis*, 204(1): 19-26.
- Guermonprez, P., Valladeau, J., Zitvogel, L., Théry, C. & Amigorena, S. (2002) Antigen presentation and T cell stimulation by dendritic cells. *Annu Rev Immunol*, 20(1): 621-667.

- Guevara Patiño, J. A., Holder, A. A., McBride, J. S. & Blackman, M. J. (1997) Antibodies that inhibit malaria merozoite surface protein-1 processing and erythrocyte invasion are blocked by naturally acquired human antibodies. *J Exp Med*, 186(10): 1689-1699.
- Hartgers, F. & Yazdanbakhsh, M. (2006) Co-infection of helminths and malaria: modulation of the immune responses to malaria. *Parasite Immunology*, 28(10): 497-506.
- Hill, D. L., Schofield, L. & Wilson, D. W. (2017) IgG opsonization of merozoites: multiple immune mechanisms for malaria vaccine development. *International journal for parasitology*, 47(10-11): 585-595.
- Høgh, B., Marbiah, N. T., Burghaus, P. A. & Andersen, P. K. (1995) Relationship between maternally derived anti-Plasmodium falciparum antibodies and risk of infection and disease in infants living in an area of Liberia, west Africa, in which malaria is highly endemic. *Infection and Immunity*, 63(10): 4034-4038.
- Holder, A. A. (1988) The precursor to major merozoite surface antigens: structure and role in immunity. *Prog Allergy*, 4172-97.
- Holder, A. A. (1999) Malaria vaccines. *Proc Natl Acad Sci U S A*, 96(4): 1167-9.
- Holder, A. A., Ja, G. P., Uthaipibull, C., Syed, S. E., Ling, I. T., Scott-Finnigan, T. & Blackman, M. J. (1999) Merozoite surface protein 1, immune evasion, and vaccines against asexual blood stage malaria. *Parassitologia*, 41(1-3): 409-414.
- Homann, M. V., Emami, S. N., Yman, V., Stenström, C., Sondén, K., Ramström, H., Karlsson, M., Asghar, M. & Färnert, A. (2017) Detection of malaria parasites after treatment in travelers: a 12-months longitudinal study and statistical modelling analysis. *EBioMedicine*, 2566-72.
- Horswill, A. R., Savinov, S. N. & Benkovic, S. J. (2004) A systematic method for identifying small-molecule modulators of protein-protein interactions. *Proceedings of the National Academy of Sciences*, 101(44): 15591-15596.
- Imai, T., Ishida, H., Suzue, K., Taniguchi, T., Okada, H., Shimokawa, C. & Hisaeda, H. (2015) Cytotoxic activities of CD8+ T cells collaborate with macrophages to protect against blood-stage murine malaria. *Elife*, 4e04232.
- Jarra, W. & Snounou, G. (1998) Only viable parasites are detected by PCR following clearance of rodent malarial infections by drug treatment or immune responses. *Infection and Immunity*, 66(8): 3783-3787.
- Jäschke, A., Coulibaly, B., Remarque, E. J., Bujard, H. & Epp, C. (2017) Merozoite Surface Protein 1 from Plasmodium falciparum Is a Major Target of Opsonizing Antibodies in Individuals with Acquired Immunity against Malaria. *Clin Vaccine Immunol*, 24(11).
- Jayawardena, A., Mogil, R., Murphy, D., Burger, D. & Gershon, R. (1983) Enhanced expression of H-2K and H-2D antigens on reticulocytes infected with Plasmodium yoelii. *Nature*, 302(5909): 623-626.
- Jeffery, G. M. (1966) Epidemiological significance of repeated infections with homologous and heterologous strains and species of Plasmodium. *Bull World Health Organ*, 35(6): 873-82.
- John, C. C., Moormann, A. M., Pregibon, D. C., Sumba, P. O., Mchugh, M. M., Narum, D. L., Lanar, D. E., Schluchter, M. D. & Kazura, J. W. (2005) Correlation of high

- levels of antibodies to multiple pre-erythrocytic plasmodium falciparum antigens and protection from infection. *Am. J. Trop. Med. Hyg*, 73(1): 222-228.
- John, C. C., Tande, A. J., Moormann, A. M., Sumba, P. O., Lanar, D. E., Min, X. M. & Kazura, J. W. (2008) Antibodies to pre-erythrocytic Plasmodium falciparum antigens and risk of clinical malaria in Kenyan children. *The Journal of infectious diseases*, 197(4): 519-526.
- Joos, C., Varela, M. L., Mbengue, B., Mansourou, A., Marrama, L., Sokhna, C., Tall, A., Trape, J. F., Toure, A., Mercereau-Puijalon, O. & Perraut, R. (2015) Antibodies to Plasmodium falciparum merozoite surface protein-1p19 malaria vaccine candidate induce antibody-dependent respiratory burst in human neutrophils. *Malar J*, 14409.
- Kaisar, M. M., Supali, T., Wiria, A. E., Hamid, F., Wammes, L. J., Sartono, E., Luty, A. J., Brienen, E. A., Yazdanbakhsh, M. & Van Lieshout, L. (2013) Epidemiology of Plasmodium infections in Flores Island, Indonesia using real-time PCR. *Malaria journal*, 121-9.
- Kemenkes, R. (2020) *Buku saku tatalaksana malaria*.
- Kim, J.-H., Lee, J., Sohn, H.-J., Song, H.-O., Kim, J.-Y., Lee, W.-J., Park, H. & Shin, H.-J. (2012) Production of monoclonal antibodies for Plasmodium vivax lactate dehydrogenase and patient sera screening using sandwich ELISA. *Parasitol Res*, 111(4): 1645-1650.
- King, C. L., Michon, P., Shakri, A. R., Marcotty, A., Stanisic, D., Zimmerman, P. A., Cole-Tobian, J. L., Mueller, I. & Chitnis, C. E. (2008) Naturally acquired Duffy-binding protein-specific binding inhibitory antibodies confer protection from blood-stage Plasmodium vivax infection. *Proceedings of the National Academy of Sciences*, 105(24): 8363-8368.
- Kost, T. A. & Condreay, J. P. (2002) Recombinant baculoviruses as mammalian cell gene-delivery vectors. *Trends Biotechnol*, 20(4): 173-80.
- Kotepui, M., Uthaisar, K., PhunPhuech, B. & Phiwklam, N. (2016) Prevalence and hematological indicators of G6PD deficiency in malaria-infected patients. *Infect Dis Poverty*, 536.
- Krishnamurty, A. T., Thouvenel, C. D., Portugal, S., Keitany, G. J., Kim, K. S., Holder, A., Crompton, P. D., Rawlings, D. J. & Pepper, M. (2016) Somatic hypermutated plasmodium-specific IgM+ memory B cells are rapid, plastic, early responders upon malaria rechallenge. *Immunity*, 45(2): 402-414.
- Kurosaki, T., Kometani, K. & Ise, W. (2015) Memory B cells. *Nat Rev Immunol*, 15(3): 149-59.
- Kurup, S. P., Butler, N. S. & Harty, J. T. (2019) T cell-mediated immunity to malaria. *Nature Reviews Immunology*, 19(7): 457-471.
- Kwent, T. E., Moye, A. L., Wiylyanyuy, A. B., Njunda, L. A. & Nkuo-Akenji, T. (2017) Variation in the immune responses against Plasmodium falciparum merozoite surface protein-1 and apical membrane antigen-1 in children residing in the different epidemiological strata of malaria in Cameroon. *Malar J*, 16(1): 453.
- Langhorne, J., Ndungu, F. M., Sponaas, A. M. & Marsh, K. (2008) Immunity to malaria: more questions than answers. *Nat Immunol*, 9(7): 725-32.
- Langhorne, J., Quin, S. J. & Sanni, L. A. (2002) Mouse models of blood-stage malaria infections: immune responses and cytokines involved in protection and pathology. *Malaria immunology*. Karger Publishers.

- Leoratti, F. M., Durlacher, R. R., Lacerda, M. V., Alecrim, M. G., Ferreira, A. W., Sanchez, M. C. & Moraes, S. L. (2008) Pattern of humoral immune response to Plasmodium falciparum blood stages in individuals presenting different clinical expressions of malaria. *Malar J*, 7186.
- Li, C., Corraliza, I. & Langhorne, J. (1999) A defect in interleukin-10 leads to enhanced malarial disease in Plasmodium chabaudi chabaudi infection in mice. *Infect Immun*, 67(9): 4435-4442.
- Li, N., Parker, D. M., Yang, Z., Fan, Q., Zhou, G., Ai, G., Duan, J., Lee, M. C., Yan, G., Matthews, S. A., Cui, L. & Wang, Y. (2013) Risk factors associated with slide positivity among febrile patients in a conflict zone of north-eastern Myanmar along the China-Myanmar border. *Malar J*, 12361.
- Lim, K., Park, J., Sohn, M., Lee, S., Oh, J., Kim, H., Bahk, Y. & Kim, Y. (2002) A direct sandwich ELISA to detect antibodies against the C-terminal region of merozoite surface protein 1 could be a useful diagnostic method to identify Plasmodium vivax exposed persons. *Parasitol Res*, 88(9): 855-860.
- Lim, K. J., Park, J. W., Yeom, J. S., Lee, Y. H., Yoo, S. B., Oh, J. H., Sohn, M. J., Bahk, Y. Y. & Kim, Y. S. (2004) Humoral responses against the C-terminal region of merozoite surface protein 1 can be remembered for more than 30 years in persons exposed to Plasmodium vivax. *Parasitol Res*, 92(5): 384-9.
- Lin, A. V. (2015) Indirect Elisa. *ELISA*. Springer.
- Lindblade, K. A., Steinhardt, L., Samuels, A., Kachur, S. P. & Slutsker, L. (2013) The silent threat: asymptomatic parasitemia and malaria transmission. *Expert review of anti-infective therapy*, 11(6): 623-639.
- Lingani, M., Zango, S. H., Valéa, I., Bonko, M. D. A., Samadoulougou, S. O., Rouamba, T., Tahita, M. C., Sanou, M., Robert, A., Tinto, H., Donnen, P. & Dramaix, M. (2021) Malaria and curable sexually transmitted and reproductive tract coinfection among pregnant women in rural Burkina Faso. *Trop Med Health*, 49(1): 90.
- Long, C. A. & Zavala, F. (2017) Immune responses in malaria. *Cold Spring Harbor perspectives in medicine*, 7(8): a025577.
- Lubis, I. N. D., Wijaya, H., Lubis, M., Lubis, C. P., Divis, P. C. S., Beshir, K. B. & Sutherland, C. J. (2017) Contribution of Plasmodium knowlesi to Multispecies Human Malaria Infections in North Sumatera, Indonesia. *J Infect Dis*, 215(7): 1148-1155.
- Lundie, R. J., de Koning-Ward, T. F., Davey, G. M., Nie, C. Q., Hansen, D. S., Lau, L. S., Mintern, J. D., Belz, G. T., Schofield, L. & Carbone, F. R. (2008) Blood-stage Plasmodium infection induces CD8<sup>+</sup> T lymphocytes to parasite-expressed antigens, largely regulated by CD8 $\alpha$ <sup>+</sup> dendritic cells. *Proc Natl Acad Sci*, 105(38): 14509-14514.
- Macià, D., Campo, J. J., Moncunill, G., Jairoce, C., Nhabomba, A. J., Mpina, M., Sorgho, H., Dosoo, D., Traore, O., Kusi, K. A., Williams, N. A., Oberai, A., Randall, A., Sanz, H., Valim, C., Asante, K. P., Owusu-Agyei, S., Tinto, H., Agnandji, S. T., Kariuki, S., Gyan, B., Daubenberger, C., Mordmüller, B., Petrone, P. & Dobaño, C. (2022) Strong off-target antibody reactivity to malarial antigens induced by RTS,S/AS01E vaccination is associated with protection. *JCI Insight*, 7(10).
- Mackinnon, M. J., Gunawardena, D., Rajakaruna, J., Weerasingha, S., Mendis, K. N. & Carter, R. (2000) Quantifying genetic and nongenetic contributions to malarial

- infection in a Sri Lankan population. *Proceedings of the National Academy of Sciences*, 97(23): 12661-12666.
- Mahajan, B., Berzofsky, J. A., Boykins, R. A., Majam, V., Zheng, H., Chattopadhyay, R., de la Vega, P., Moch, J. K., Haynes, J. D., Belyakov, I. M., Nakhasi, H. L. & Kumar, S. (2010) Multiple antigen peptide vaccines against Plasmodium falciparum malaria. *Infect Immun*, 78(11): 4613-24.
- Makler, M., Ries, J., Williams, J., Bancroft, J., Piper, R., Gibbins, B. & Hinrichs, D. (1993) Parasite lactate dehydrogenase as an assay for Plasmodium falciparum drug sensitivity. *Am J Trop Med Hyg*, 48(6): 739-741.
- Makler, M. T., Palmer, C. J. & Ager, A. L. (1998) A review of practical techniques for the diagnosis of malaria. *Ann Trop Med Parasitol*, 92(4): 419-434.
- McCutchan, T. F., Piper, R. C. & Makler, M. T. (2008) Use of malaria rapid diagnostic test to identify Plasmodium knowlesi infection. *Emerging infectious diseases*, 14(11): 1750.
- McNamara, D. T., Kasehagen, L. J., Grimberg, B. T., Cole-Tobian, J., Collins, W. E. & Zimmerman, P. A. (2006) Diagnosing infection levels of four human malaria parasite species by a polymerase chain reaction/ligase detection reaction fluorescent microsphere-based assay. *Am J Trop Med Hyg*, 74(3): 413-21.
- Miller, L. H. (1996) Protective selective pressure. *Nature*, 383(6600): 480-481.
- Miller, L. H., Baruch, D. I., Marsh, K. & Doumbo, O. K. (2002) The pathogenic basis of malaria. *Nature*, 415673-679.
- Mmbando, B. P., Mgaya, J., Cox, S. E., Mtatiro, S. N., Soka, D., Rwezaula, S., Meda, E., Msaki, E., Snow, R. W., Jeffries, N., Geller, N. L. & Makani, J. (2015) Negative Epistasis between Sickle and Foetal Haemoglobin Suggests a Reduction in Protection against Malaria. *PLoS ONE*, 10(5): e0125929.
- Mohan, K., Moulin, P. & Stevenson, M. M. (1997) Natural killer cell cytokine production, not cytotoxicity, contributes to resistance against blood-stage Plasmodium chabaudi AS infection. *The JJ*, 159(10): 4990-4998.
- Mohandas, N. & An, X. (2012) Malaria and human red blood cells. *Med Microbiol Immunol*, 201(4): 593-8.
- Molineaux, L. (1996) Plasmodium falciparum malaria: some epidemiological implications of parasite and host diversity. *Annals of Tropical Medicine & Parasitology*, 90(4): 379-393.
- Moore, S. A., Surgey, E. G. & Cadwgan, A. M. (2002) Malaria vaccines: where are we and where are we going? *The Lancet infectious diseases*, 2(12): 737-743.
- Morassin, B., Fabre, R., Berry, A. & Magnaval, J. (2002) One year's experience with the polymerase chain reaction as a routine method for the diagnosis of imported malaria. *The American journal of tropical medicine and hygiene*, 66(5): 503-508.
- Mosmann, T. R. & Coffman, R. (1989) TH1 and TH2 cells: different patterns of lymphokine secretion lead to different functional properties. *Annu Rev Immunol.*, 7(1): 145-173.
- Motohashi, T., Shimojima, T., Fukagawa, T., Maenaka, K. & Park, E. Y. (2005) Efficient large-scale protein production of larvae and pupae of silkworm by Bombyx mori nuclear polyhedrosis virus bacmid system. *Biochem Biophys Res Commun*, 326(3): 564-569.

- Muerhoff, A. S., Birkenmeyer, L. G., Coffey, R., Dille, B. J., Barnwell, J. W., Collins, W. E., Sullivan, J. S., Dawson, G. J. & Desai, S. M. (2010) Detection of Plasmodium falciparum, P. vivax, P. ovale, and P. malariae merozoite surface protein 1-p19 antibodies in human malaria patients and experimentally infected nonhuman primates. *Clin Vaccine Immunol*, 17(10): 1631-8.
- Murhandarwati, E. E. H., Wang, L., Black, C. G., Nhan, D. H., Richie, T. L. & Coppel, R. L. (2009) Inhibitory antibodies specific for the 19-kilodalton fragment of merozoite surface protein 1 do not correlate with delayed appearance of infection with Plasmodium falciparum in semi-immune individuals in Vietnam. *Infection and Immunity*, 77(10): 4510-4517.
- Murhandarwati, E. E. H., Wang, L., de Silva, H. D., Ma, C., Plebanski, M., Black, C. G. & Coppel, R. L. (2010) Growth-inhibitory antibodies are not necessary for protective immunity to malaria infection. *Infect Immun*, 78(2): 680-687.
- Mutabazi, T., Arinaitwe, E., Ndyabakira, A., Sendaula, E., Kakeeto, A., Okimat, P., Orishaba, P., Katongole, S. P., Mpimbaza, A. & Byakika-Kibwika, P. (2021) Assessment of the accuracy of malaria microscopy in private health facilities in Entebbe Municipality, Uganda: a cross-sectional study. *Malaria journal*, 20(1): 1-9.
- Nagao, Y., Kimura-Sato, M., Chavalitshe-winkoon-Petmitr, P., Thongrungrat, S., Wilairatana, P., Ishida, T., Tan-Ariya, P., de Souza, J. B., Krudsood, S. & Looareesuwan, S. (2008) Suppression of Plasmodium falciparum by serum collected from a case of Plasmodium vivax infection. *Malar J*, 7113.
- Naing, C., Racioz, V., Whittaker, M. A., Aung, K., Reid, S. A., Mak, J. W. & Tanner, M. (2013) Efficacy and safety of dihydroartemisinin-piperaquine for treatment of Plasmodium vivax malaria in endemic countries: meta-analysis of randomized controlled studies. *PLoS ONE*, 8(12): e78819.
- Nardin, E. & Nussenzweig, R. (1993) T cell responses to pre-erythrocytic stages of malaria: role in protection and vaccine development against pre-erythrocytic stages. *Annual review of immunology*, 11(1): 687-727.
- Ndungu, F. M., Lundblom, K., Rono, J., Illingworth, J., Eriksson, S. & Färnert, A. (2013) Long-lived Plasmodium falciparum specific memory B cells in naturally exposed Swedish travelers. *Eur J Immunol*, 43(11): 2919-2929.
- Ngai, M., Weckman, A. M., Erice, C., McDonald, C. R., Cahill, L. S., Sled, J. G. & Kain, K. C. (2020) Malaria in Pregnancy and Adverse Birth Outcomes: New Mechanisms and Therapeutic Opportunities. *Trends Parasitol*, 36(2): 127-137.
- Ngasala, B. & Bushukatale, S. (2019) Evaluation of malaria microscopy diagnostic performance at private health facilities in Tanzania. *Malar J*, 18(1): 375.
- Nie, C. Q., Bernard, N. J., Norman, M. U., Amante, F. H., Lundie, R. J., Crabb, B. S., Heath, W. R., Engwerda, C. R., Hickey, M. J. & Schofield, L. (2009) IP-10-mediated T cell homing promotes cerebral inflammation over splenic immunity to malaria infection. *PLoS Pathogens*, 5(4): e1000369.
- Nogueira, P. A., Piovesan Alves, F., Fernandez-Becerra, C., Pein, O., Rodrigues Santos, N., Pereira da Silva, L. H., Plessman Camargo, E. & del Portillo, H. A. (2006) A reduced risk of infection with Plasmodium vivax and clinical protection against malaria are associated with antibodies against the N terminus but not the C terminus of merozoite surface protein 1. *Infection and Immunity*, 74(5): 2726-2733.

- Nwuba, R. I., Sodeinde, O., Anumudu, C. I., Omosun, Y. O., Odaibo, A. B., Holder, A. A. & Nwagwu, M. (2002) The human immune response to Plasmodium falciparum includes both antibodies that inhibit merozoite surface protein 1 secondary processing and blocking antibodies. *Infection and Immunity*, 70(9): 5328-5331.
- Nziza, N., Tran, T. M., DeRiso, E. A., Dolatshahi, S., Herman, J. D., de Lacerda, L., Junqueira, C., Lieberman, J., Ongoiba, A. & Doumbo, S. (2023) Accumulation of Neutrophil Phagocytic Antibody Features Tracks With Naturally Acquired Immunity Against Malaria in Children. *The Journal of infectious diseases*, jiad115.
- Odhiambo, F., Buff, A. M., Moranga, C., Moseti, C. M., Wesongah, J. O., Lowther, S. A., Arvelo, W., Galgalo, T., Achia, T. O. & Roka, Z. G. (2017) Factors associated with malaria microscopy diagnostic performance following a pilot quality-assurance programme in health facilities in malaria low-transmission areas of Kenya, 2014. *Malaria journal*, 16(1): 1-10.
- Oh, J. S., Kim, J. S., Lee, C. H., Nam, D. H., Kim, S. H., Park, D. W., Lee, C. K., Lim, C. S. & Park, G. H. (2008) Evaluation of a malaria antibody enzyme immunoassay for use in blood screening. *Mem Inst Oswaldo Cruz*, 10375-78.
- Omer, F. M. & Riley, E. M. (1998) Transforming growth factor  $\beta$  production is inversely correlated with severity of murine malaria infection. *J. Exp. Med.*, 188(1): 39-48.
- Omosun, Y. O., Anumudu, C. I., Adoro, S., Odaibo, A. B., Sodeinde, O., Holder, A. A., Nwagwu, M. & Nwuba, R. I. (2005) Variation in the relationship between anti-MSP-1(19) antibody response and age in children infected with Plasmodium falciparum during the dry and rainy seasons. *Acta Trop*, 95(3): 233-47.
- Ong'echa, J. M., Lal, A. A., Terlouw, D. J., Ter Kuile, F. O., Kariuki, S. K., Udhayakumar, V., Orago, A. S., Hightower, A. W., Nahlen, B. L. & Shi, Y. P. (2003) Association of interferon- $\gamma$  responses to pre-erythrocytic stage vaccine candidate antigens of Plasmodium falciparum in young Kenyan children with improved hemoglobin levels: XV. Asembo bay cohort project. *The American journal of tropical medicine and hygiene*, 68(5): 590-597.
- Orjih, A. U., Cherian, P. & AlFadhli, S. (2008) Microscopic detection of mixed malarial infections: improvement by saponin hemolysis. *Medical Principles and Practice*, 17(6): 458-463.
- Ouédraogo, A. L., Bousema, T., Schneider, P., De Vlas, S. J., Ilboudo-Sanogo, E., Cuzin-Ouattara, N., Nébié, I., Roeffen, W., Verhave, J. P. & Luty, A. J. (2009) Substantial contribution of submicroscopical Plasmodium falciparum gametocyte carriage to the infectious reservoir in an area of seasonal transmission. *PLoS ONE*, 4(12): e8410.
- Overstreet, M. G., Chen, Y.-C., Cockburn, I. A., Tse, S.-W. & Zavala, F. (2011) CD4+ T cells modulate expansion and survival but not functional properties of effector and memory CD8+ T cells induced by malaria sporozoites. *PLoS ONE*, 6(1): e15948.
- Overstreet, M. G., Cockburn, I. A., Chen, Y. C. & Zavala, F. (2008) Protective CD8+ T cells against Plasmodium liver stages: immunobiology of an 'unnatural' immune response. *Immunol Rev*, 225(1): 272-283.
- Pape, K. A., Taylor, J. J., Maul, R. W., Gearhart, P. J. & Jenkins, M. K. (2011) Different B cell populations mediate early and late memory during an endogenous immune response. *Science*, 331(6021): 1203-1207.

- Park, C. G., Chwae, Y.-J., Kim, J.-I., Lee, J.-H., Hur, G. M., Jeon, B. H., Koh, J. S., Han, J.-H., Lee, S.-J. & Park, J.-W. (2000) Serologic responses of Korean soldiers serving in malaria-endemic areas during a recent outbreak of *Plasmodium vivax*. *The American journal of tropical medicine and hygiene*, 62(6): 720-725.
- Park, J.-W., Moon, S.-H., Yeom, J.-S., Lim, K.-J., Sohn, M.-J., Jung, W.-C., Cho, Y.-J., Jeon, K.-W., Ju, W. & Ki, C.-S. (2001) Naturally acquired antibody responses to the C-terminal region of merozoite surface protein 1 of *Plasmodium vivax* in Korea. *Clinical Diagnostic Laboratory Immunology*, 8(1): 14-20.
- Payne, D. (1988) Use and limitations of light microscopy for diagnosing malaria at the primary health care level. *Bulletin of the World Health Organization*, 66(5): 621-626.
- Perera, K. L., Handunnetti, S. M., Holm, I., Longacre, S. & Mendis, K. (1998) Baculovirus merozoite surface protein 1 C-terminal recombinant antigens are highly protective in a natural primate model for human *Plasmodium vivax* malaria. *Infection and Immunity*, 66(4): 1500-1506.
- Persson, K. E., Lee, C. T., Marsh, K. & Beeson, J. G. (2006) Development and optimization of high-throughput methods to measure *Plasmodium falciparum*-specific growth inhibitory antibodies. *J Clin Microbiol*, 44(5): 1665-73.
- Persson, K. E., McCallum, F. J., Reiling, L., Lister, N. A., Stubbs, J., Cowman, A. F., Marsh, K. & Beeson, J. G. (2008) Variation in use of erythrocyte invasion pathways by *Plasmodium falciparum* mediates evasion of human inhibitory antibodies. *J Clin Invest*, 118(1): 342-351.
- Pierce, S. K. (2009) Understanding B cell activation: from single molecule tracking, through Tolls, to stalking memory in malaria. *Immunologic research*, 4385-97.
- Pohl, K. & Cockburn, I. A. (2022) Innate immunity to malaria: The good, the bad and the unknown. *Front Immunol*, 13914598.
- Portugal, S., Doumtabe, D., Traore, B., Miller, L. H., Troye-Blomberg, M., Doumbo, O. K., Dolo, A., Pierce, S. K. & Crompton, P. D. (2012) B cell analysis of ethnic groups in Mali with differential susceptibility to malaria. *Malar J*, 11(1): 162.
- Portugal, S., Obeng-Adjei, N., Moir, S., Crompton, P. D. & Pierce, S. K. (2017) Atypical memory B cells in human chronic infectious diseases: An interim report. *Cellular Immunology*, 32118-25.
- Portugal, S., Pierce, S. K. & Crompton, P. D. (2013) Young lives lost as B cells falter: what we are learning about antibody responses in malaria. *The JI*, 190(7): 3039-3046.
- Portugal, S., Tipton, C. M., Sohn, H., Kone, Y., Wang, J., Li, S., Skinner, J., Virtaneva, K., Sturdevant, D. E. & Porcella, S. F. (2015) Malaria-associated atypical memory B cells exhibit markedly reduced B cell receptor signaling and effector function. *Elife*, 4.
- Portugal, S., Tran, T. M., Ongoiba, A., Bathily, A., Li, S., Doumbo, S., Skinner, J., Doumtabe, D., Kone, Y., Sangala, J., Jain, A., Davies, D. H., Hung, C., Liang, L., Ricklefs, S., Homann, M. V., Felgner, P. L., Porcella, S. F., Färnert, A., Doumbo, O. K., Kayentao, K., Greenwood, B. M., Traore, B. & Crompton, P. D. (2016) Treatment of Chronic Asymptomatic *Plasmodium falciparum* Infection Does Not Increase the Risk of Clinical Malaria Upon Reinfection. *Clinical Infectious Diseases*, 64(5): 645-653.

- Punnath, K., Dayanand, K. K., Midya, V., Chandrashekar, V. N., Achur, R. N., Kakkilaya, S. B., Ghosh, S. K., Kumari, S. N. & Gowda, D. C. (2021) Acquired antibody responses against merozoite surface protein-1 19 antigen during Plasmodium falciparum and P. vivax infections in South Indian city of Mangaluru. *Journal of Parasitic Diseases*, 45176-190.
- Pupovac, A. & Good-Jacobson, K. (2017) An antigen to remember: regulation of B cell memory in health and disease. *Curr. Opin. Immunol*, 4589-96.
- Raj, D. K., Nixon, C. P., Nixon, C. E., Dvorin, J. D., DiPetrillo, C. G., Pond-Tor, S., Wu, H.-W., Jolly, G., Pischel, L., Lu, A., Michelow, I. C., Cheng, L., Conteh, S., McDonald, E. A., Absalon, S., Holte, S. E., Friedman, J. F., Fried, M., Duffy, P. E. & Kurtis, J. D. (2014) Antibodies to PfSEA-1 block parasite egress from RBCs and protect against malaria infection. *Science*, 344(6186): 871-877.
- Ram, S., Lewis, L. A. & Rice, P. A. (2010) Infections of people with complement deficiencies and patients who have undergone splenectomy. *Clinical Microbiology Reviews*, 23(4): 740-780.
- Reddy, K. S., Amlabu, E., Pandey, A. K., Mitra, P., Chauhan, V. S. & Gaur, D. (2015) Multiprotein complex between the GPI-anchored CyRPA with PfRH5 and PfRipr is crucial for Plasmodium falciparum erythrocyte invasion. *Proc Natl Acad Sci*, 112(4): 1179-1184.
- Richards, J. S., Arumugam, T. U., Reiling, L., Healer, J., Hodder, A. N., Fowkes, F. J., Cross, N., Langer, C., Takeo, S. & Uboldi, A. D. (2013) Identification and prioritization of merozoite antigens as targets of protective human immunity to Plasmodium falciparum malaria for vaccine and biomarker development. *The Journal of Immunology*, 1300778.
- Richards, J. S. & Beeson, J. G. (2009) The future for blood-stage vaccines against malaria. *Immunol. Cell Biol*, 87(5): 377-390.
- Riley, E., Allen, S., Wheeler, J., Blackman, M., Bennett, S., Takacs, B., SCHONFELD, H. J., Holder, A. & Greenwood, B. (1992) Naturally acquired cellular and humoral immune responses to the major merozoite surface antigen (Pf MSP1) of Plasmodium falciparum are associated with reduced malaria morbidity. *Parasite Immunology*, 14(3): 321-337.
- Riley, E., Wagner, G., Akanmori, B. & Koram, K. (2001) Do maternally acquired antibodies protect infants from malaria infection? *Parasite Immunology*, 23(2): 51-59.
- Riley, E. M., Wahl, S., Perkins, D. J. & Schofield, L. (2006) Regulating immunity to malaria. *Parasite Immunol*, 28(1-2): 35-49.
- Robson, K. J., Hall, J. R., Jennings, M., Harris, T., Marsh, K., Newbold, C., Tate, V. E. & Weatherall, D. (1988) A highly conserved amino-acid sequence in thrombospondin, properdin and in proteins from sporozoites and blood stages of a human malaria parasite. *Nature*, 335(6185): 79-82.
- Rodrigues, M. H., Cunha, M. G., Machado, R. L., Ferreira, O. C., Jr., Rodrigues, M. M. & Soares, I. S. (2003) Serological detection of Plasmodium vivax malaria using recombinant proteins corresponding to the 19-kDa C-terminal region of the merozoite surface protein-1. *Malar J*, 2(1): 39.
- Rosenkranz, M. T. (2023) Old but gold: The Plasmodium falciparum merozoite surface protein 1 is still a promising blood stage vaccine candidate.

- Rouhani, M., Zakeri, S., Mehrizi, A. A. & Djadid, N. D. (2015) Comparative analysis of the profiles of IgG subclass-specific responses to Plasmodium falciparum apical membrane antigen-1 and merozoite surface protein-1 in naturally exposed individuals living in malaria hypoendemic settings, Iran. *Malaria journal*, 14(1): 58.
- Ruprecht, C. R. & Lanzavecchia, A. (2006) Toll-like receptor stimulation as a third signal required for activation of human naive B cells. *Eur J Immunol*, 36(4): 810-816.
- Rzeczyk, C. M., Hale, K., Woodroffe, N., Bobogare, A., Csurhes, P., Ishii, A. & Ferrante, A. (1997) Humoral immune responses of Solomon Islanders to the merozoite surface antigen 2 of Plasmodium falciparum show pronounced skewing towards antibodies of the immunoglobulin G3 subclass. *Infect Immun*, 65(3): 1098-1100.
- Sabchareon, A., Burnouf, T., Ouattara, D., Attanath, P., Bouharoun-Tayoun, H., Chantavanich, P., Foucalt, C., Chongsuphajaisiddhi, T. & Druilhe, P. (1991) Parasitologic and clinical human response to immunoglobulin administration in falciparum malaria. *The American journal of tropical medicine and hygiene*, 45(3): 297-308.
- Sanders, P. R., Gilson, P. R., Cantin, G. T., Greenbaum, D. C., Nebl, T., Carucci, D. J., McConville, M. J., Schofield, L., Hodder, A. N., Yates, J. R., 3rd & Crabb, B. S. (2005) Distinct protein classes including novel merozoite surface antigens in Raft-like membranes of Plasmodium falciparum. *J Biol Chem*, 280(48): 40169-76.
- Savadogo, H., Coulibaly, G., Bandaogo, V., Kaboré, A., Dao, L., Kaboret, S., Ouédraogo-Yugbaré, S. O., Kouéta, F. & Yé, D. (2019) [Hemoglobinuria in children hospitalized in Ouagadougou: short term inpatient care and prognosis]. *Pan Afr Med J*, 34165.
- Scherf, A., Lopez-Rubio, J. J. & Riviere, L. (2008) Antigenic variation in Plasmodium falciparum. *Annu. Rev. Microbiol.*, 62445-470.
- Schofield, L. & Mueller, I. (2006) Clinical immunity to malaria. *Current molecular medicine*, 6(2): 205-221.
- Serghides, L., Smith, T. G., Patel, S. N. & Kain, K. C. (2003) CD36 and malaria: friends or foes? *Trends Parasitol*, 19(10): 461-469.
- Shai, S., Blackman, M. J. & Holder, A. A. (1995) Epitopes in the 19kDa fragment of the Plasmodium falciparum major merozoite surface protein-1 (PfMSP-1(19)) recognized by human antibodies. *Parasite Immunol*, 17(5): 269-75.
- Sher, A., Pearce, E. & Kaye, P. (2003) Shaping the immune response to parasites: role of dendritic cells. *Curr Opin Immunol*, 15(4): 421-9.
- Sherman, I. W. (1998) *Malaria*:Wiley Online Library.
- Shi, Y. P., Sayed, U., Qari, S. H., Roberts, J. M., Udhayakumar, V., Oloo, A. J., Hawley, W. A., Kaslow, D. C., Nahlen, B. L. & Lal, A. A. (1996) Natural immune response to the C-terminal 19-kilodalton domain of Plasmodium falciparum merozoite surface protein 1. *Infection and Immunity*, 64(7): 2716-2723.
- Siddiqui, A. J., Bhardwaj, J., Goyal, M., Prakash, K., Adnan, M., Alreshidi, M. M., Patel, M., Soni, A. & Redman, W. (2020) Immune responses in liver and spleen against Plasmodium yoelii pre-erythrocytic stages in Swiss mice model. *Journal of Advanced Research*, 2429-41.

- Sitohang, V., Sariwati, E., Fajariyani, S. B., Hwang, D., Kurnia, B., Hapsari, R. K., Laihad, F. J., Sumiwi, M. E., Pronyk, P. & Hawley, W. A. (2018) Malaria elimination in Indonesia: halfway there. *The Lancet Global Health*, 6(6): e604-e606.
- Smith, J. D., Chitnis, C. E., Craig, A. G., Roberts, D. J., Hudson-Taylor, D. E., Peterson, D. S., Pinches, R., Newbold, C. I. & Miller, L. H. (1995) Switches in expression of *Plasmodium falciparum* var genes correlate with changes in antigenic and cytoadherent phenotypes of infected erythrocytes. *Cell*, 82(1): 101-110.
- Snounou, G., Viriyakosol, S., Zhu, X. P., Jarra, W., Pinheiro, L., do Rosario, V. E., Thaithong, S. & Brown, K. N. (1993) High sensitivity of detection of human malaria parasites by the use of nested polymerase chain reaction. *Mol Biochem Parasitol*, 61(2): 315-20.
- Snounou, G. & White, N. J. (2004) The co-existence of *Plasmodium*: sidelights from *falciparum* and *vivax* malaria in Thailand. *Trends Parasitol*, 20(7): 333-9.
- Soares, I. S., da Cunha, M. G., Silva, M. N., Souza, J. M., Del Portillo, H. A. & Rodrigues, M. M. (1999) Longevity of naturally acquired antibody responses to the N- and C-terminal regions of *Plasmodium vivax* merozoite surface protein 1. *Am J Trop Med Hyg*, 60(3): 357-63.
- Steenkeste, N., Rogers, W. O., Okell, L., Jeanne, I., Incardona, S., Duval, L., Chy, S., Hewitt, S., Chou, M., Socheat, D., Babin, F. X., Ariey, F. & Rogier, C. (2010) Sub-microscopic malaria cases and mixed malaria infection in a remote area of high malaria endemicity in Rattanakiri province, Cambodia: implication for malaria elimination. *Malar J*, 9108.
- Stephens, R., Albano, F. R., Quin, S., Pascal, B. J., Harrison, V., Stockinger, B., Kioussis, D., Weltzien, H.-U. & Langhorne, J. (2005) Malaria-specific transgenic CD4+ T cells protect immunodeficient mice from lethal infection and demonstrate requirement for a protective threshold of antibody production for parasite clearance. *Blood*, 106(5): 1676-1684.
- Stephens, R. & Langhorne, J. (2010) Effector memory Th1 CD4 T cells are maintained in a mouse model of chronic malaria. *PLoS Pathogens*, 6(11): e1001208.
- Stevenson, M. M. & Riley, E. M. (2004) Innate immunity to malaria. *Nature Reviews Immunology*, 4169.
- Stevenson, M. M., Su, Z., Sam, H. & Mohan, K. (2001) Modulation of host responses to blood-stage malaria by interleukin-12: from therapy to adjuvant activity. *Microbes Infect*, 3(1): 49-59.
- Stewart, M., Nawrot, R., Schulman, S. & Vanderberg, J. (1986) *Plasmodium berghei* sporozoite invasion is blocked in vitro by sporozoite-immobilizing antibodies. *Infection and Immunity*, 51(3): 859-864.
- Struik, S. S. & Riley, E. M. (2004) Does malaria suffer from lack of memory? *Immunol Rev*, 201(1): 268-290.
- Su, Z. & Stevenson, M. M. (2002) IL-12 is required for antibody-mediated protective immunity against blood-stage *Plasmodium chabaudi* AS malaria infection in mice. *The JI*, 168(3): 1348-1355.
- Sullivan, R. T., Kim, C. C., Fontana, M. F., Feeney, M. E., Jagannathan, P., Boyle, M. J., Drakeley, C. J., Ssewanyana, I., Nankya, F. & Mayanja-Kizza, H. (2015) FCRL5 delineates functionally impaired memory B cells associated with *Plasmodium falciparum* exposure. *PLoS Pathogens*, 11(5): e1004894.

- Sultan, A. A., Thathy, V., Frevert, U., Robson, K. J., Crisanti, A., Nussenzweig, V., Nussenzweig, R. S. & Ménard, R. (1997) TRAP is necessary for gliding motility and infectivity of Plasmodium sporozoites. *Cell*, 90(3): 511-522.
- Supargiyono, S., Bretscher, M. T., Wijayanti, M. A., Sutanto, I., Nugraheni, D., Rozqie, R., Kosasih, A. A., Sulistyawati, S., Hawley, W. A. & Lobo, N. F. (2013) Seasonal changes in the antibody responses against Plasmodium falciparum merozoite surface antigens in areas of differing malaria endemicity in Indonesia. *Malar J*, 12(1): 444.
- Suryaman, A., Anwar, C., Handayani, D., Saleh, I., Dalillah, D., Prasasty, G. D., Giffari, A. & Warni, S. E. (2021) Malaria Surveillance in the Anak Dalam Tribe, Jambi, Indonesia. *Jurnal Ilmu Kesehatan Masyarakat*, 12(2): 104-116.
- Takala, S. L., Coulibaly, D., Thera, M. A., Batchelor, A. H., Cummings, M. P., Escalante, A. A., Ouattara, A., Traoré, K., Niangaly, A. & Djimdé, A. A. (2009) Extreme polymorphism in a vaccine antigen and risk of clinical malaria: implications for vaccine development. *Science translational medicine*, 1(2): 2ra5-2ra5.
- Tangpukdee, N., Duangdee, C., Wilairatana, P. & Krudsood, S. (2009) Malaria diagnosis: a brief review. *Korean J Parasitol*, 47(2): 93-102.
- Tarlinton, D. & Good-Jacobson, K. (2013) Diversity among memory B cells: origin, consequences, and utility. *Science*, 341(6151): 1205-1211.
- Taylor, R. R., Smith, D. B., Robinson, V. J., McBride, J. S. & Riley, E. M. (1995) Human antibody response to Plasmodium falciparum merozoite surface protein 2 is serogroup specific and predominantly of the immunoglobulin G3 subclass. *Infect Immun*, 63(11): 4382-4388.
- Tediosi, F., Maire, N., Penny, M., Studer, A. & Smith, T. A. (2009) Simulation of the cost-effectiveness of malaria vaccines. *Malaria journal*, 8(1): 1-17.
- Teo, A., Feng, G., Brown, G. V., Beeson, J. G. & Rogerson, S. J. (2016) Functional antibodies and protection against blood-stage malaria. *Trends in parasitology*, 32(11): 887-898.
- Tongren, J. E., Drakeley, C. J., McDonald, S. L., Reyburn, H. G., Manjurano, A., Nkya, W. M., Lemnge, M. M., Gowda, C. D., Todd, J. E. & Corran, P. H. (2006) Target antigen, age, and duration of antigen exposure independently regulate immunoglobulin G subclass switching in malaria. *Infection and Immunity*, 74(1): 257-264.
- Topolska, A. E., Lidgett, A., Truman, D., Fujioka, H. & Coppel, R. L. (2004) Characterization of a membrane-associated rhoptry protein of Plasmodium falciparum. *J Biol Chem*, 279(6): 4648-56.
- Torres, K. J., Clark, E. H., Hernandez, J. N., Soto-Cornejo, K. E., Gamboa, D. & Branch, O. H. (2008) Antibody response dynamics to the Plasmodium falciparum conserved vaccine candidate antigen, merozoite surface protein-1 C-terminal 19kD (MSP1-19kD), in Peruvians exposed to hypoendemic malaria transmission. *Malar J*, 7: 173.
- Trager, W. & Jensen, J. B. (1976) Human malaria parasites in continuous culture. *Science*, 193(4254): 673.
- Trape, J.-F., Tall, A., Diagne, N., Ndiath, O., Ly, A. B., Faye, J., Dieye-Ba, F., Roucher, C., Bouganali, C. & Badiane, A. (2011) Malaria morbidity and pyrethroid resistance after the introduction of insecticide-treated bednets and artemisinin-based combination therapies: a longitudinal study. *Lancet Infect Dis*, 11(12): 925-932.

- Troye-Blomberg, M., Sjöberg, K., Olerup, O., Riley, E. M., Kabilan, L., Perlmann, H., Marbiah, N. T. & Perlmann, P. (1990) Characterization of regulatory T cell responses to defined immunodominant T cell epitopes of the Plasmodium falciparum antigen Pf155/RESA. *Immunol Lett*, 25(1-3): 129-34.
- Troye-Blomberg, M., Worku, S., Tangteerawatana, P., Jamshaid, R., Söderström, K., Elghazali, G., Moretta, L., Hammarström, M.-L. & Mincheva-Nilsson, L. (1999) Human  $\gamma\delta$ T cells that inhibit the in vitro growth of the asexual blood stages of the Plasmodium falciparum parasite express cytolytic and proinflammatory molecules. *Scandinavian journal of immunology*, 50(6): 642-650.
- Turner, L., Lavstsen, T., Berger, S. S., Wang, C. W., Petersen, J. E., Avril, M., Brazier, A. J., Freeth, J., Jespersen, J. S. & Nielsen, M. A. (2013) Severe malaria is associated with parasite binding to endothelial protein C receptor. *Nature*, 498(7455): 502.
- Turner, L., Lavstsen, T., Mmbando, B. P., Wang, C. W., Magistrado, P. A., Vestergaard, L. S., Ishengoma, D. S., Minja, D. T., Lusingu, J. P. & Theander, T. G. (2015) IgG antibodies to endothelial protein C receptor-binding cysteine-rich interdomain region domains of Plasmodium falciparum erythrocyte membrane protein 1 are acquired early in life in individuals exposed to malaria. *Infect Immun*, 83(8): 3096-103.
- Tuteja, R. (2007) Malaria— an overview. *The FEBS journal*, 274(18): 4670-4679.
- Udhayakumar, V., Anyona, D., Kariuki, S., Shi, Y. P., Bloland, P. B., Branch, O. H., Weiss, W., Nahlen, B. L., Kaslow, D. C. & Lal, A. A. (1995) Identification of T and B cell epitopes recognized by humans in the C-terminal 42-kDa domain of the Plasmodium falciparum merozoite surface protein (MSP)-1. *J Immunol*, 154(11): 6022-30.
- Udhayakumar, V., Kariuki, S., Kolczack, M., Girma, M., Roberts, J. M., Oloo, A. J., Nahlen, B. L. & Lal, A. A. (2001) Longitudinal study of natural immune responses to the Plasmodium falciparum apical membrane antigen (AMA-1) in a holoendemic region of malaria in western Kenya: Asembo Bay Cohort Project VIII. *The American journal of tropical medicine and hygiene*, 65(2): 100-107.
- UNICEF & Control, C. f. D. (2009) *Malaria rapid diagnostic test performance: results of WHO product testing of malaria RDTs: round 1 (2008)*: World Health Organization.
- Van den Steen, P. E., Deroost, K., Aelst, I. V., Geurts, N., Martens, E., Struyf, S., Nie, C. Q., Hansen, D. S., Matthys, P. & Damme, J. V. (2008) CXCR3 determines strain susceptibility to murine cerebral malaria by mediating T lymphocyte migration toward IFN- $\gamma$ -induced chemokines. *Eur J Immunol*, 38(4): 1082-1095.
- van Oss, C. J. (2000) Precipitation and agglutination. *Journal of Immunoassay*, 21(2-3): 143-164.
- Verma, J., Saxena, S. & Babu, S. G. (2013) ELISA-Based Identification and Detection of Microbes. In: Arora, D. K., Das, S. & Sukumar, M. (eds.) *Analyzing Microbes: Manual of Molecular Biology Techniques*. Berlin, Heidelberg: Springer Berlin Heidelberg.
- Vilkman, K., Pakkanen, S. H., Lääveri, T., Siikamäki, H. & Kantele, A. (2016) Travelers' health problems and behavior: prospective study with post-travel follow-up. 16328.
- Villarino, N. F., LeClerc, G. R., Denny, J. E., Dearth, S. P., Harding, C. L., Sloan, S. S., Gribble, J. L., Campagna, S. R., Wilhelm, S. W. & Schmidt, N. W. (2016)

- Composition of the gut microbiota modulates the severity of malaria. *Proceedings of the National Academy of Sciences*, 113(8): 2235-2240.
- Villasis, E., Lopez-Perez, M., Torres, K., Gamboa, D., Neyra, V., Bendezu, J., Tricoche, N., Lobo, C., Vinetz, J. M. & Lustigman, S. (2012) Anti-Plasmodium falciparum invasion ligand antibodies in a low malaria transmission region, Loreto, Peru. *Malaria journal*, 11(1): 1-9.
- Voisine, C., Mastelic, B., Sponaas, A.-M. & Langhorne, J. (2010) Classical CD11c+ dendritic cells, not plasmacytoid dendritic cells, induce T cell responses to Plasmodium chabaudi malaria. *Int J Parasitol*, 40(6): 711-719.
- Walther, M., Woodruff, J., Edele, F., Jeffries, D., Tongren, J. E., King, E., Andrews, L., Bejon, P., Gilbert, S. C. & De Souza, J. B. (2006) Innate immune responses to human malaria: heterogeneous cytokine responses to blood-stage Plasmodium falciparum correlate with parasitological and clinical outcomes. *The JI*, 177(8): 5736-5745.
- Wang, Q., Zhao, Z., Zhang, X., Li, X., Zhu, M., Li, P., Yang, Z., Wang, Y., Yan, G., Shang, H., Cao, Y., Fan, Q. & Cui, L. (2016) Naturally Acquired Antibody Responses to Plasmodium vivax and Plasmodium falciparum Merozoite Surface Protein 1 (MSP1) C-Terminal 19 kDa Domains in an Area of Unstable Malaria Transmission in Southeast Asia. *PLoS ONE*, 11(3): e0151900.
- Warrell, D. A. & Gilles, H. M. (2017) *Essential malariology*:CRC Press.
- Wassmer, S. C., Moxon, C. A., Taylor, T., Grau, G. E., Molyneux, M. E. & Craig, A. G. (2011) Vascular endothelial cells cultured from patients with cerebral or uncomplicated malaria exhibit differential reactivity to TNF. *Cellular microbiology*, 13(2): 198-209.
- Weill, J. C. & Reynaud, C. A. (2020) IgM memory B cells: specific effectors of innate-like and adaptive responses. *Curr Opin Immunol*, 631-6.
- Weiss, G. E., Traore, B., Kayentao, K., Ongoiba, A., Doumbo, S., Doumtabe, D., Kone, Y., Dia, S., Guindo, A. & Traore, A. (2010) The Plasmodium falciparum-specific human memory B cell compartment expands gradually with repeated malaria infections. *PLoS Pathogens*, 6(5): e1000912.
- WHO (2010) *Basic Malaria Microscopy: Tutor's guide*:World Health Organization.
- WHO (2015) World malaria report 2014: summary. World Health Organization.
- WHO (2017) WORLD MALARIA REPORT 2017.
- WHO (2021) World Malaria Report 2021.
- Widayati, A. N. (2011) Pemantauan Longitudinal Titer Antibodi Terhadap Protein Permukaan Merozoit Plasmodium Falciparum Pada Anak Sekolah Dasar Di Kabupaten Purworejo, Propinsi Jawa Tengah. Universitas Gadjah Mada.
- Willcocks, L. C., Carr, E. J., Niederer, H. A., Rayner, T. F., Williams, T. N., Yang, W., Scott, J. A. G., Urban, B. C., Peshu, N. & Vyse, T. J. (2010) A defuncting polymorphism in FCGR2B is associated with protection against malaria but susceptibility to systemic lupus erythematosus. *Proc Natl Acad Sci*, 107(17): 7881-7885.
- Wilson, D. W., Goodman, C. D., Sleeb, B. E., Weiss, G. E., de Jong, N. W. M., Angrisano, F., Langer, C., Baum, J., Crabb, B. S., Gilson, P. R., McFadden, G. I. & Beeson, J. G. (2015) Macrolides rapidly inhibit red blood cell invasion by the human malaria parasite, Plasmodium falciparum. *BMC Biol.*, 1352.

- Wilson, N. O., Jain, V., Roberts, C. E., Lucchi, N., Joel, P. K., Singh, M. P., Nagpal, A. C., Dash, A. P., Udhayakumar, V. & Singh, N. (2011) CXCL4 and CXCL10 predict risk of fatal cerebral malaria. *Disease markers*, 30(1): 39-49.
- Wipasa, J., Suphavitai, C., Okell, L. C., Cook, J., Corran, P. H., Thaikla, K., Liewsaree, W., Riley, E. M. & Hafalla, J. C. R. (2010) Long-lived antibody and B Cell memory responses to the human malaria parasites, *Plasmodium falciparum* and *Plasmodium vivax*. *PLoS Pathogens*, 6(2): e1000770.
- World Health, O., Research, U. N. U. W. B. W. S. P. f. & Training in Tropical, D. (2015) *Microscopy for the detection, identification and quantification of malaria parasites on stained thick and thin blood films in research settings (version 1.0): procedure: methods manual*, Geneva:World Health Organization.
- Wu, L., Mwesigwa, J., Affara, M., Bah, M., Correa, S., Hall, T., Singh, S. K., Beeson, J. G., Tetteh, K. K. A., Kleinschmidt, I., D'Alessandro, U. & Drakeley, C. (2020) Sero-epidemiological evaluation of malaria transmission in The Gambia before and after mass drug administration. *BMC Med*, 18(1): 331.
- Wykes, M. N., Zhou, Y.-H., Liu, X. Q. & Good, M. F. (2005) *Plasmodium yoelii* can ablate vaccine-induced long-term protection in mice. *The Journal of Immunology*, 175(4): 2510-2516.
- Yeom, J.-S., Kim, E.-S., Lim, K.-J., Oh, J.-H., Sohn, M.-J., Yoo, S.-B., Kim, E., Bae, I., Jung, Y.-J. & Park, J.-W. (2008) Naturally acquired IgM antibody response to the C-terminal region of the merozoite surface protein 1 of *Plasmodium vivax* in Korea: use for serodiagnosis of vivax malaria. *Journal of Parasitology*, 94(6): 1410-1414.
- Yilmaz, B., Portugal, S., Tran, T. M., Gozzelino, R., Ramos, S., Gomes, J., Regalado, A., Cowan, P. J., d'Apice, A. J. & Chong, A. S. (2014) Gut microbiota elicits a protective immune response against malaria transmission. *Cell*, 159(6): 1277-1289.
- Zeyrek, F. Y., Babaoglu, A., Demirel, S., Erdogan, D. D., Ak, M., Korkmaz, M. & Coban, C. (2008) Analysis of naturally acquired antibody responses to the 19-kd C-terminal region of merozoite surface protein-1 of *Plasmodium vivax* from individuals in Sanliurfa, Turkey. *The American journal of tropical medicine and hygiene*, 78(5): 729-732.
- Zuccarino-Catania, G. V., Sadanand, S., Weisel, F. J., Tomayko, M. M., Meng, H., Kleinstein, S. H., Good-Jacobson, K. L. & Shlomchik, M. J. (2014) CD80 and PD-L2 define functionally distinct memory B cell subsets that are independent of antibody isotype. *Nat Immunol* 15(7): 631.