

Department of Parasitology

ANNUAL NEWSLETTER

2013-2014

GREETINGS!

By Prof. Dr. Rohela Mahmud

This is the fourth issue of our Annual Newsletter. This issue covers all activities in the Department in 2013-2014. In 2013, the Department published 48 articles, all in ISI journals. The total number of postgraduate students was 56 and 16 new students joined us in 2013. Three PhD and 1 master students successfully graduated in the 2013 UM convocation.



In 2014, the Department published 57 articles in ISI journals. Three PhD and 8 master students graduated in that year. There are 70 post graduate students in the Department doing both master and PhD.

The Department successfully organized a 3 day 'Advanced Identification Course on Adult Mosquitoes of Medical Importance workshop' from 26 – 28 August 2013. The workshop attracted 18 participants from Malaysia and 2 participants from abroad. This workshop was facilitated by Datin Dr. Indra Vytilingam and Mr. John Jefferey. The Department organised a workshop on the "Diagnosis of Toxoplasmosis: The PCR Method", on the 10th to 11th February 2014 for the Medical Laboratory Technologists. Two of our MLTs, Puan Sharifah and Puan Farikha attended the 3rd Workshop on EQAP for NTDs Laboratories in Western Pacific Region Countries & Capacity Building Training on Helminths Diagnosis, Shanghai, China, 7 – 11 July 2014.

Our students and researchers have started using our satellite animal laboratory which is AAALAC accredited. Our ACL2 provides opportunities for our researchers to carry out work on mosquitoes and the diseases related to them.

A/P Dr. Lau Yee Ling was awarded the UM 2013 Young Scientist Award. Dr. Romano Ngui was awarded the UM 2013 Excellence Award in the category of PhD candidate with high impact publication. Professor Dr Yvonne Lim and Associate Professor Dr Zurainee Mohamed Nor were recipients of University of Malaya excellent award for 2014.

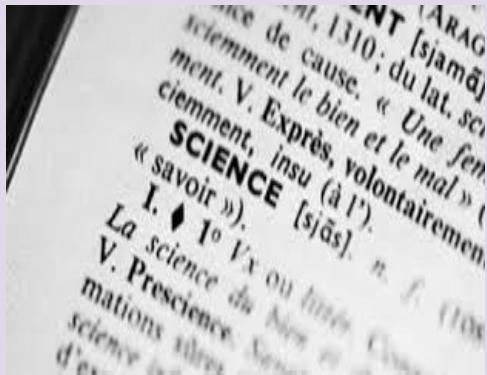
The Department was deeply saddened when one of our senior lecturers, Dr Arine Fadzlun Ahmad, succumbed to renal cancer in December 2014. She will be very much missed.

The Department made many achievements in 2014 through sheer hard work and good teamwork by both students and staff. Let us hope to do better in terms of research and publications in 2015. We would like to acknowledge A/P Dr Lau Yee Ling and her student, Tengku Idzzan for their time and efforts in compiling this newsletter.

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PUBLICATIONS 2013

- Tan, T. C., Tan, P. C., Sharma, R., Sugnaseelan, S., & Suresh, K. G. (2013). Genetic diversity of caprine *Blastocystis* from Peninsular Malaysia. Parasitology research, 112(1), 85-89.
- Abdulsalam, A. M., Ithoi, I., Al-Mekhlafi, H. M., Khan, A. H., Ahmed, A., Surin, J., & Mak, J. W. (2013). Prevalence, predictors and clinical significance of *Blastocystis* sp. in Sebha, Libya. Parasites & vectors, 6(1), 86.
- Rajamanikam, A., & Govind, S. K. (2013). Amoebic forms of *Blastocystis* spp.-evidence for a pathogenic role. Parasites & Vectors, 6(1), 295.
- Kumarasamy, V., Kuppusamy, U. R., Samudi, C., & Kumar, S. (2013). *Blastocystis* sp. subtype 3 triggers higher proliferation of human colorectal cancer cells, HCT116. Parasitology research, 112(10), 3551-3555.



- Abdulsalam, A. M., Ithoi, I., Al-Mekhlafi, H. M., Al-Mekhlafi, A. M., Ahmed, A., & Surin, J. (2013). Subtype Distribution of *Blastocystis* Isolates in Sebha, Libya. PLoS one, 8(12), e84372.
- Nasr, N. A., Al-Mekhlafi, H. M., Ahmed, A., Roslan, M. A., & Bulgiba, A. (2013). Towards an effective control programme of soil-transmitted helminth infections among Orang Asli in rural Malaysia. Part 2: Knowledge, attitude, and practices. Parasit Vectors, 6, 28.
- Nasr, N. A., Al-Mekhlafi, H. M., Ahmed, A., Roslan, M. A., & Bulgiba, A. (2013). Towards an effective control programme of soil-transmitted helminth infections among Orang Asli in rural Malaysia. Part 1: Prevalence and associated key factors, 6, 27.
- Ahmad, A. F., Hadip, F., Ngui, R., Lim, Y. A., & Mahmud, R. (2013). Serological and molecular detection of *Strongyloides stercoralis* infection among an Orang Asli community in Malaysia. Parasitology research, 112(8), 2811-2816.
- Sady, H., Al-Mekhlafi, H. M., Mahdy, M. A., Lim, Y. A., Mahmud, R., & Surin, J. (2013). Prevalence and associated factors of schistosomiasis among children in Yemen: implications for an effective control programme. PLoS neglected tropical diseases, 7(8), e2377.
- Lim, Y. A., Mahdy, M. A., Tan, T. K., Goh, X. T., Jex, A. R., Nolan, M. J., ... & Gasser, R. B. (2013). First molecular characterization of *Giardia duodenalis* in goats in Malaysia. Molecular and cellular probes, 27(1), 28-31.
- Ching, X. T., Lau, Y. L., Fong, M. Y., & Nissapatorn, V. (2013). Evaluation of *Toxoplasma gondii*-recombinant dense granular protein (GRA2) for serodiagnosis by western blot. Parasitology research, 112(3), 1229-1236.
- Anuar, T. S., Al-Mekhlafi, H. M., Abdul Ghani, M. K., Abu Bakar, E., Azreen, S. N., Salleh, F. M., & Moktar, N. (2013). Evaluation of formalin-ether sedimentation and trichrome staining techniques: Its effectiveness in detecting *Entamoeba histolytica/dispar/moshkovskii* in stool samples. Journal of microbiological methods, 92(3), 344-348.
- Parthasarathy, S., Fong, M. Y., Ramaswamy, K., & Lau, Y. L. (2013). Protective Immune Response in BALB/c Mice Induced by DNA Vaccine of the ROP8 gene of *Toxoplasma gondii*. parasite, 8, 10.
- Alyousefi, N. A., Mahdy, M. A., Xiao, L., Mahmud, R., & Lim, Y. A. (2013). Molecular characterization of *Giardia duodenalis* in Yemen. Experimental parasitology, 134(2), 141-147.
- Huey, C. S., Mahdy, M. A., Al-Mekhlafi, H. M., Nasr, N. A., Lim, Y. A., Mahmud, R., & Surin, J. (2013). Multilocus genotyping of *Giardia duodenalis* in Malaysia. Infection, Genetics and Evolution, 17, 269-276.
- Tay, S. T., Zan, H. A. M., Lim, Y. A., & Ngui, R. (2013). Antibody Prevalence and Factors Associated with Exposure to *Oriental tsutsugamushi* in Different Aboriginal Subgroups in West Malaysia. PLoS neglected tropical diseases, 7(8), e2341.
- Anuar, T. S., Al-Mekhlafi, H. M., Salleh, F. M., & Moktar, N. (2013). New Insights of Microsporidial Infection among Asymptomatic Aboriginal Population in Malaysia. PLoS one, 8(8), e71870.
- Lau, Y. L., Chang, P. Y., Subramaniam, V., Ng, Y. H., Mahmud, R., Ahmad, A. F., & Fong, M. Y. (2013). Genetic assemblage of *Sarcocystis* spp. in Malaysian snakes. Parasites & vectors, 6(1), 257.

- Ngui, R., Mahdy, M. A., Chua, K. H., Traub, R., & Lim, Y. A. (2013). Genetic characterization of the partial mitochondrial cytochrome oxidase c subunit I (*cox 1*) gene of the zoonotic parasitic nematode, *Ancylostoma ceylanicum* from humans, dogs and cats. Acta tropica, 128(1), 154-157.
- Onichandran, S., Kumar, T., Lim, Y. A., Sawangjaroen, N., Andiappan, H., Salibay, C. C., ... & Nissapatorn, V. (2013). Waterborne parasites and physico-chemical assessment of selected lakes in Malaysia. Parasitology research, 112(12), 4185-4191.
- Chemoh, W., Sawangjaroen, N., Nissapatorn, V., Suwanrath, C., Chandeying, V., Hortiwakul, T., ... & Sukthana, Y. (2013). *Toxoplasma gondii* infection: What is the real situation? Experimental parasitology, 135(4), 685-689.
- Low, V. L., Chen, C. D., Lim, P. E., Lee, H. L., Lim, Y. A. L., Tan, T. K., & Sofian-Azirun, M. (2013). First molecular genotyping of insensitive acetylcholinesterase associated with malathion resistance in *Culex quinquefasciatus* Say populations in Malaysia. Pest management science, 69(12), 1362-1368.
- Lee, W. C., Chin, P. W., Lau, Y. L., Chin, L. C., Fong, M. Y., Yap, C. J., ... & Mahmud, R. (2013). Hyperparasitaemic human Plasmodium knowlesi infection with atypical morphology in peninsular Malaysia. Malar J, 12, 88.
- Amir, A., Sum, J. S., Lau, Y. L., Vytilingam, I., & Fong, M. Y. (2013). Colonization of Anopheles cracens: a malaria vector of emerging importance. Parasites & vectors, 6(1), 81.
- Cheong, F. W., Lau, Y. L., Fong, M. Y., & Mahmud, R. (2013). Evaluation of recombinant Plasmodium knowlesi merozoite surface protein-133 for detection of human malaria. Am J Trop Med Hyg, 88, 835-840.
- Palaya, V., Lau, Y. L., Mahmud, R., Chen, Y., & Fong, M. Y. (2013). Cloning, expression, and immuncharacterization of surface protein containing an altered thrombospondin repeat domain (SPATR) from Plasmodium knowlesi. Malaria journal, 12(1), 182.
- Al-abd, N. M., Mahdy, M. A., Al-Mekhlafi, A. M., Snounou, G., Abdul-Majid, N. B., Al-Mekhlafi, H. M., & Fong, M. Y. (2013). The Suitability of *P. falciparum* Merozoite Surface Proteins 1 and 2 as Genetic Markers for In Vivo Drug Trials in Yemen. PLoS one, 8(7), e67853.
- Khaw, L. T., Ball, H. J., Golenser, J., Combes, V., Grau, G. E., Wheway, J., ... & Hunt, N. H. (2013). Endothelial cells potentiate interferon-γ production in a novel tripartite culture model of human cerebral malaria. PloS one, 8(7), e69521.
- Al-Hamidhi, S., Mahdy, M., Al-Hashami, Z., Al-Farsi, H., Al-mekhlafi, A., Idris, M., ... & Babiker, H. (2013). Genetic diversity of Plasmodium falciparum and distribution of drug resistance haplotypes in Yemen. Malar J, 12, 244.
- Lee, C., Vytilingam, I., Chong, C. S., Razak, A., Tan, C. H., Liew, C., ... & Ng, L. C. (2013). Gravitraps for management of dengue clusters in Singapore. The American journal of tropical medicine and hygiene, 88(5), 888-892.
- Nursyazana, M. T., Mohdzain, S. N., & Jeffery, J. (2013). Biodiversity and macroparasitic distribution of the wild rat population of Carey Island, Klang. Tropical biomedicine, 30(2), 199-210.
- Muslim, A., Fong, M. Y., Mahmud, R., Lau, Y. L., & Sivanandam, S. (2013). Armigeres subalbus incriminated as a vector of zoonotic Brugia pahangi filariasis in suburban Kuala Lumpur, Peninsular Malaysia. Parasites & vectors, 6(1), 219.
- Al-Mekhlafi, H. M., Al-Maktari, M. T., Jani, R., Ahmed, A., Anuar, T. S., Moktar, N., ... & Surin, J. (2013). Burden of Giardia duodenalis Infection and Its Adverse Effects on Growth of Schoolchildren in Rural Malaysia. PLoS neglected tropical diseases, 7(10), e2516.
- Anuar, T. S., Al-Mekhlafi, H. M., Ghani, A., Kamel, M., Azreen, S. N., Salleh, F. M., ... & Moktar, N. (2013). Different Clinical Outcomes of *Entamoeba histolytica* in Malaysia: Does Genetic Diversity Exist? The Korean journal of parasitology, 51(2), 231-236.
- Kavitha, R., Tan, T. C., Lee, H. L., Nazni, W. A., & Sofian, A. M. (2013). Molecular identification of Malaysian *Chrysomya megacephala* (Fabricius) and *Chrysomya rufifacies* (Macquart) using life stage specific mitochondrial DNA. Tropical biomedicine, 30(2), 211-219.
- Kavitha, R., Nazni, W. A., Tan, T. C., Lee, H. L., & Azirun, M. S. (2013). Review of forensically important entomological specimens collected from human cadavers in Malaysia (2005–2010). Journal of forensic and legal medicine, 20(5), 480-482.
- Goh, X. T., Lim, Y. A., Vytilingam, I., Chew, C. H., Lee, P. C., Ngui, R., ... & Chua, K. H. (2013). Increased detection of Plasmodium knowlesi in Sandakan division, Sabah as revealed by PlasmoNex™. Malaria journal, 12(1), 264.
- Jusof, F. F., Khaw, L. T., Ball, H. J., & Hunt, N. H. (2013). Improved spectrophotometric human interferon-gamma bioassay. Journal of immunological methods, 394(1), 115-120.
- Low, V. L., Chen, C. D., Lim, P. E., Lee, H. L., Tan, T. K., Lim, Y. A., & Sofian-Azirun, M. (2013). First molecular genotyping of voltage gated sodium channel alleles in *Culex quinquefasciatus* populations in Malaysia. Pesticide Biochemistry and Physiology, 107(1), 127-131.
- Anthony, C. N., Lau, Y. L., Sum, J. S., Fong, M. Y., Ariffin, H., Zaw, W. L., ... & Mahmud, R. (2013). Malaysian child infected with *Plasmodium vivax* via blood transfusion: a case report. Malaria journal, 12(1), 308.
- Rohani, A., Zamree, I., Ali, W. N. W. M., Hadi, A. A., Asmad, M., Lubim, D., ... & Lim, L. H. (2013). Nocturnal man biting habits of mosquito species in Serian, Sarawak, Malaysia. Advances in Entomology, 1, 42.
- Russell, B., Malleret, B., Suwanarusk, R., Anthony, C., Kanlaya, S., Lau, Y. L., ... & Renia, L. (2013). Field-Based Flow Cytometry for Ex Vivo Characterization of *Plasmodium vivax* and *P. falciparum* Antimalarial Sensitivity. Antimicrobial agents and chemotherapy, 57(10), 5170-5174.
- Van Hong, N., van den Eede, P., Van Overmeir, C., Vytilingam, I., Rosanas-Urgell, A., Thanh, P. V., ... & Erhart, A. (2013). A Modified Semi-Nested Multiplex Malaria PCR (SnM-PCR) for the Identification of the Five Human Plasmodium Species Occurring in Southeast Asia. The American journal of tropical medicine and hygiene, 89(4), 721.
- Braima, K. A., Sum, J. S., Ghazali, A. R. M., Muslimin, M., Jeffery, J., Lee, W. C., ... & Abdul-Aziz, N. M. (2013). Is there a risk of suburban transmission of malaria in selangor, malaysia? PLoS one, 8(10), e77924.



- Lau, Y. L., Anthony, C., Fakhurrazi, S. A., Ibrahim, J., Ithoi, I., & Mahmud, R. (2013). Real-time PCR assay in differentiating *Entamoeba histolytica*, *Entamoeba dispar*, and *Entamoeba moshkovskii* infections in Orang Asli settlements in Malaysia. Parasites & vectors, 6(1), 250.
- Ahmad, A. F., Heaselgrave, W., Andrew, P. W., & Kilvington, S. (2013). The In Vitro Efficacy of Antimicrobial Agents Against the Pathogenic Free-Living Amoeba *Balamuthia mandrillaris*. Journal of Eukaryotic Microbiology, 60(5), 539-543.
- Alyousefi, N. A., Mahdy, M. A. K., Lim, Y. A. L., Xiao, L., & Mahmud, R. (2013). First molecular characterization of *Cryptosporidium* in Yemen. Parasitology, 140(06), 729-734.
- Fong, M. Y., Noordin, R., Lau, Y. L., Cheong, F. W., Yunus, M. H., & Idris, Z. (2013). Comparative analysis of ITS1 nucleotide sequence reveals distinct genetic difference between *Brugia malayi* from Northeast Borneo and Thailand. Parasitology, 140(01), 39-45.
- Kavitha, R., Tan, T. C., Lee, H. L., Nazni, W. A., & Sofian-Azirun, M. (2013). DNA typing of Calliphorids collected from human corpses in Malaysia. Tropical biomedicine, 30(1), 119-124.
- Ithoi, I., Mahmud, R., Basher, M. H. A., Jali, A., Abdulsalam, A. M., Ibrahim, J., & Mak, J. W. (2013). Acanthamoeba genotype T4 detected in naturally-infected feline corneas found to be in homology with those causing human keratitis. Tropical biomedicine, 30(1), 131-140.
- Lee, W. C., Russell, B., Lau, Y. L., Fong, M. Y., Chu, C., Sriprawat, K., ... & Renia, L. (2013). Giemsa-Stained Wet Mount Based Method for Reticulocyte Quantification: A Viable Alternative in Resource Limited or Malaria Endemic Settings. PLoS one, 8(4), e60303.



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PUBLICATIONS 2014

1. Koo, Sin-Ying; Chong, Chee-Seng; Vytilingam, Indra; et al. 2014. Pyrethroid Resistance in Aedes aegypti Larvae (Diptera: Culicidae) From Singapore. JOURNAL OF MEDICAL ENTOMOLOGY. Volume: 51 Issue: 1 Pages: 170-181.
2. Lee, Soo Ching; Ngui, Romano; Tan, Tong Kai; et al. 2014. Aquatic biomonitoring of Giardia cysts and Cryptosporidium oocysts in peninsular Malaysia. ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH. Volume: 21 Issue: 1 Pages: 445-453.
3. Al-Mekhlafi, HM; Al-Zabidi, EM; Al-Maktari, MT; Atroosh, WM; Al-Delaimy, AK; Moktar, N; Sallam, AA; Abdullah, WA; Jani, R; Surin, J. 2014. Effects of Vitamin A Supplementation on Iron Status Indices and Iron Deficiency Anaemia: A Randomized Controlled Trial. NUTRIENTS. Volume: 6 Issue: 1 Pages: 190-206.
4. Teh, CSJ; Chua, KH; Lim, YAL; Lee, SC; Thong, KL. 2014. Loop-Mediated Isothermal Amplification Assay for Detection of Generic and Verocytotoxin-Producing Escherichia coli among Indigenous Individuals in Malaysia. SCIENTIFIC WORLD JOURNAL. DOI: 10.1155/2014/457839
5. Ching, XT; Lau, YL; Fong, MY; Nissapatorn, V; Andiappan, H. 2014. Recombinant Dense Granular Protein (GRAS) for Detection of Human Toxoplasmosis by Western Blot. BIOMED RESEARCH INTERNATIONAL. DOI: 10.1155/2014/690529
6. Song, BK; Pan, MZ; Lau, YL; Wan, KL. 2014. Sequence analysis of the PIP5K locus in *Eimeria maxima* provides further evidence for eimerian genome plasticity and segmental organization. GENETICS AND MOLECULAR RESEARCH. Volume: 13 Issue: 3 Pages: 5803-5814.
7. Lau, YL; Chang, PY; Tan, CT; Fong, MY; Mahmud, R; Wong, KT, 2014. Short Report: Sarcocystis nesbitti Infection in Human Skeletal Muscle: Possible Transmission from Snakes. AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE. Volume: 90 Issue: 2 Pages: 361-364
8. Tan, TK; Panchadaram, C; Low, VL; Lee, SC ; Ngui, R ; Sharma, RSK; Lim, YAL. 2014. Co-infection of Haemonchus contortus and Trichostrongylus spp. among livestock in Malaysia as revealed by amplification and sequencing of the internal transcribed spacer II DNA region. BMC VETERINARY RESEARCH. DOI: 10.1186/1746-6148-10-38.
9. Rohani, A; Aziz, I; Zurainee, MN; Rohana, SH; Zamree, I; Lee, HL. 2014. Current insecticide susceptibility status of Malaysian Anopheles maculatus Theobald to malathion, permethrin, DDT and deltamethrin. TROPICAL BIOMEDICINE. Volume: 31 Issue: 1 Pages: 159-165.
10. Kumar, T ; Onichandran, S; Lim, YAL; Sawangjaroen, N; Ithoi, I; Andiappan, H; Salibay, CC; Dungca, JZ; Chye, TT; Sulaiman, WYW; Lau, YL; Nissapatorn, V. 2014. AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE. Volume: 90 Issue: 4 Pages: 682-689.
11. Kumarasamy, V; Roslani, AC; Rani, KU; Govind, SK. 2014. Advantage of using colonic washouts for Blastocystis detection in colorectal cancer patients. PARASITES & VECTORS. Volume: 7 DOI: 10.1186/1756-3305-7-162
12. Fong, MY; Lau, YL; Chang, PY; Anthony, CN. 2014. Genetic diversity, haplotypes and allele groups of Duffy binding protein (PKDBP alpha II) of Plasmodium knowlesi clinical isolates from Peninsular Malaysia. PARASITES & VECTORS. Volume: 7 DOI: 10.1186/1756-3305-7-161
13. Yeo, ASL; Azhar, NA; Yeow, W ; Talbot, CC; Khan, MA ; Shankar, EM; Rathakrishnan, A; Azizan, A; Wang, SM; Lee, SK; Fong, MY; Manikam, R; Sekaran, SD. 2014. PLOS ONE. Volume: 9 Issue: 4 DOI: 10.1371/journal.pone.0092240.
14. Alias, H; Surin, J; Mahmud, R; Shafie, A; Zin, JM; Nor, MM; Ibrahim, AS; Rundi, C. 2014. Spatial distribution of malaria in Peninsular Malaysia from 2000 to 2009. PARASITES & VECTORS. Volume: 7 DOI: 10.1186/1756-3305-7-186.
15. Lee, WC; Malleret, B; Lau, YL; Mauduit, M ; Fong, MY ; Cho, JS ; Suwanarusk, R; Zhang, R; Albrecht, L ; Costa, FTM; Preiser, P; McGready, R; Renia, L; Noosten, F; Russell, B. 2014. Glycophorin C (CD236R) mediates vivax malaria parasite rosetting to normocytes. BLOOD. Volume: 123 Issue: 18 Pages: E100-E109.
16. Lee, SC; Tang, MS; Lim, YAL; Choy, SH; Kurtz, ZD; Cox, LM; Gundra, UM; Cho, I; Bonneau, R; Blaser, MJ; Chua, KH; Loke, P. 2014. Helminth Colonization Is Associated with Increased Diversity of the Gut Microbiota. PLOS NEGLECTED TROPICAL DISEASES. Volume: 8 Issue: 5 DOI: 10.1371/journal.pntd.0002880.
17. Italiano, CM; Wong, KT; AbuBakar, S; Lau, YL; Ramli, N; Omar, SFS; Bador, MK; Tan, CT. 2014. Sarcocystis nesbitti Causes Acute, Relapsing Febrile Myositis with a High Attack Rate: Description of a Large Outbreak of Muscular Sarcocystosis in Pangkor Island, Malaysia. 2012. PLOS NEGLECTED TROPICAL DISEASES. Volume: 8 Issue: 5 DOI: 10.1371/journal.pntd.0002876.
18. Ngui, R; Shafie, A; Chua, KH; Mistam, MS; Al-Mekhlafi, HM; Sulaiman, WWW; Mahmud, R; Lim, YAL. 2014. Mapping and modelling the geographical distribution of soil-transmitted helminthiasis in Peninsular Malaysia: implications for control approaches. GEOSPATIAL HEALTH. Volume: 8 Issue: 2 Pages: 365-376.
19. Chandramathi, S; Suresh, K; Sivanandam, S; Kuppusamy, UR. 2014. Stress Exacerbates Infectivity and Pathogenicity of Blastocystis hominis: In Vitro and In Vivo Evidences. PLOS ONE. Volume: 9 Issue: 5 DOI: 10.1371/journal.pone.0094567.
20. Yusof, R; Lau, YL; Mahmud, R; Fong, MY; Jelip, J; Ngian, HU; Mustakim, S; Hussin, HM; Marzuki, N; Ali, MM. 2014. High proportion of knowlesi malaria in recent malaria cases in Malaysia. MALARIA JOURNAL. Volume: 13 Article Number: 168 DOI: 10.1186/1475-2875-13-168.
21. Balakrishnan, DD; Kumar, SG. 2014. Higher Caspase-like activity in symptomatic isolates of *Blastocystis* spp. PARASITES & VECTORS. Volume: 7 Article Number: 219 DOI: 10.1186/1756-3305-7-219.
22. Andiappan, H; Nissapatorn, V; Sawangjaroen, N; Chemoh, W; Lau, YL; Kumar, T; Onichandran, S; Suwanrath, C; Chandeying, V. 2014. Toxoplasma infection in pregnant women: a current status in Songklanagarind hospital, southern Thailand. PARASITES & VECTORS. Volume: 7 Article Number: 239 DOI: 10.1186/1756-3305-7-239.
23. Onichandran, S; Kumar, T; Salibay, CC; Dungca, JZ; Tabo, HAL; Tabo, N; Tan, TC; Lim, YAL; Sawangjaroen, N; Phiriyasathem, S; Andiappan, H; Ithoi, I; Lau, YL; Nissapatorn, V. 2014. Waterborne parasites: a current status from the Philippines. PARASITES & VECTORS. Volume: 7 DOI: 10.1186/1756-3305-7-244.
24. Low, VL; Lim, PE; Chen, CD; Lim, YAL; Tan, TK; Norma-Rashid, Y; Lee, HL; Sofian-Azirun, M. 2014. Mitochondrial DNA analyses reveal low genetic diversity in *Culex quinquefasciatus* from residential areas in Malaysia. MEDICAL AND VETERINARY ENTOMOLOGY. Volume: 28 Issue: 2 Pages: 157-168.
25. Aziz, S; Aidil, RM; Nisifara, MN; Ngui, R; Lim, YAL; Yusoff, WSW; Ruslan, R. 2014. Spatial density of Aedes distribution in urban areas: A case study of breteau index in Kuala Lumpur, Malaysia. JOURNAL OF VECTOR BORNE DISEASES. Volume: 51 Issue: 2 Pages: 91-96.
26. Andiappan, H; Nissapatorn, V; Sawangjaroen, N; Khaing, SL; Salibay, CC; Cheung, MMM; Dungca, JZ; Chemoh, W; Teng, CX; Lau, YL; Adenan, NAM. 2014. Knowledge and practice on Toxoplasma infection in pregnant women from Malaysia, Philippines, and Thailand. FRONTIERS IN MICROBIOLOGY. Volume: 5 DOI: 10.3389/fmicb.2014.00291.
27. Low, VL; Adler, PH; Takaoka, H; Ya'cob, Z; Lim, PE; Tan, TK; Lim, YAL; Chen, CD; Norma-Rashid, Sofian-Azirun, M. 2014. Mitochondrial DNA Markers Reveal High Genetic Diversity but Low Genetic Differentiation in the Black Fly *Simulium tani* Takaoka & Davies along an Elevational Gradient in Malaysia. PLOS ONE. Volume: 9 Issue: 6 DOI: 10.1371/journal.pone.0100512.
28. Ngui, R; Lim, YAL; Hafiz, W; Ismail, Lim, KN; Mahmud, R. 2014. Case Report: Zoonotic Acanthostoma ceylanicum Infection Detected by Endoscopy. AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE. Volume: 91 Issue: 1 Pages: 86-88.
29. Sonaimuthu, P; Fong, MY; Kalyanasundaram, R; Mahmud, R; Lau, YL. 2014. Sero-diagnostic evaluation of *Toxoplasma gondii* recombinant Rhoptry antigen 8 expressed in E-coli. PARASITES & VECTORS. Volume: 7 DOI: 10.1186/1756-3305-7-297.
30. Sum, JS; Lee, WC; Amir, A; Braima, KA; Jeffery, J; Abdul-Aziz, NM; Fong, MY; Lau, YL. 2014. Phylogenetic study of six species of Anopheles mosquitoes in Peninsular Malaysia based on inter-transcribed spacer region 2 (ITS2) of ribosomal DNA. PARASITES & VECTORS. Volume: 7 DOI: 10.1186/1756-3305-7-309.
31. Bamaga, OAA; Mahdy, MAK; Mahmud, R; Lim, YAL. 2014. Malaria in Hadhramout, a southeast province of Yemen: prevalence, risk factors, knowledge, attitude and practices (KAPs). PARASITES & VECTORS. Volume: 7 Article Number: 351 DOI: 10.1186/1756-3305-7-351.
32. Kassim, M; Mansor, M; Kamaldien, TA; Shariffuddin, II; Hasan, MS; Ong, G; Sekaran, SD; Suhaime, A; Al-Abd, N; Yusoff, KM. 2014. Caffeic acid phenethyl ester (CAPE): Scavenger of peroxynitrite in vitro and in sepsis models. SHOCK. Volume: 42 Issue: 2 Pages: 154-160.
33. Al-Delaimy, AK; Al-Mekhlafi, HM; Nasr, NA; Sady, H; Atroosh, WM; Nashiry, M; Anuar, TS; Moktar, N; Lim, YAL; Mahmud, R. 2014. Epidemiology of Intestinal Polyparasitism among Orang Asli School Children in Rural Malaysia. PLOS NEGLECTED TROPICAL DISEASES. Volume: 8 Issue: 8 DOI: 10.1371/journal.pntd.0003074.
34. Tay, ST; Mokhtar, AS; Low, KC; Zain, SNM; Jeffery, J; Aziz, NA; Kho, KL. 2014. Identification of rickettsiae from wild rats and cat fleas in Malaysia. MEDICAL AND VETERINARY ENTOMOLOGY. Volume: 28 Pages: 104-108.
35. Al-Mekhlafi, AK; Al-Mekhlafi, HM; Nasr, NA; Sady, H; Atroosh, WM; Nashiry, M; Anuar, TS; Al-Zabidi, EM; Al-Maktari, MT; Mahdy, MAK; Ahmed, A; Sallam, AA; Abdullah, WA; Moktar, N; Surin, J. 2014. Does vitamin A supplementation protect schoolchildren from acquiring soil-transmitted helminthiasis? A randomized controlled trial. PARASITES & VECTORS. Volume: 7 DOI: 10.1186/1756-3305-7-367.
36. Low, VL; Tan, TK; Lim, PE; Domingues, LN; Tay, ST; Lim, YAL; Goh, TG; Panchadaram, C; Bathamanan, P; Sofian-Azirun, M. 2014. Use of COI, CytB and ND5 genes for intra- and inter-specific differentiation of Haematobia irritans and Haematobia exigua. VETERINARY PARASITOLOGY. Volume: 204 Issue: 3-4 Pages: 439-442.
37. Ragavan, ND; Govind, SK; Chye, TT; Mahadeva, S. 2014. Phenotypic variation in *Blastocystis* sp ST3. PARASITES & VECTORS. Volume: 7 DOI: 10.1186/1756-3305-7-404.
38. Ngui, R; Ravindran, S; Ong, DBL; Chow, TK; Low, KP; Nureena, ZS; Rajoo, Y; Chin, YT; Amir, A; Ahmad, AF; Lim, YAL; Mahmud, R. 2014. Enterobius vermicularis Salpingitis Seen in the Setting of Ectopic Pregnancy in a Malaysian Patient. JOURNAL OF CLINICAL MICROBIOLOGY. Volume: 52 Issue: 9 Pages: 3468-3470.
39. Gaythri, T; Suresh, K; Subba, B; Kalyani, R. 2014. Identification and Characterisation of Heat Shock Protein 70 in Thermal Stressed Blastocystis sp. PLOS ONE. Volume: 9 Issue: 9 DOI: 10.1371/journal.pone.0095608.
40. Al-Delaimy, AK; Al-Mekhlafi, HM; Lim, YAL; Nasr, NA; Sady, H; Atroosh, WM; Mahmud, R. 2014. Developing and evaluating health education learning package (HELP) to control soil-transmitted helminth infections among Orang Asli children in Malaysia. PARASITES & VECTORS. Volume: 7 DOI: 10.1186/1756-3305-7-416.
41. Vytilingam, I; Lim, YAL; Venugopalan, B; Ngui, R; Leong, CS; Wong, ML; Khaw, L; Goh, X; Yap, N; Sulaiman, WYW; Jeffery, J; Zawiah, AGCT; Aszhina, IN; Sharma, RSK; Ling, LY; Mahmud, R. 2014. Plasmodium knowlesi malaria an emerging public health problem in Hulu Selangor, Selangor, Malaysia (2009-2013): epidemiologic and entomologic analysis. PARASITES & VECTORS. Volume: 7 DOI: 10.1186/1756-3305-7-436.
42. Lee, SC; Ngui, R; Tan, TK; Aidil, RM; Lim, YAL. 2014. Neglected Tropical Diseases among Two Indigenous Subtribes in Peninsular Malaysia: Highlighting Differences and Co-Infection of Helmintiasis and Sarcocystosis. PLOS ONE. Volume: 9 Issue: 9 DOI: 10.1371/journal.pone.0107980.
43. De Silva, JR; Lau, YL; Fong, MY. 2014. Genotyping of the Duffy Blood Group among Plasmodium knowlesi-Infected Patients in Malaysia. PLOS ONE. Volume: 9 Issue: 9 DOI: 10.1371/journal.pone.0108951.
44. Ngui, R; Lee, SC; Yap, NJ; Tan, TK; Aidil, RM; Chua, KH; Aziz, S; Sulaiman, WYW; Ahmad, AF; Mahmud, R; Lian, YLA. 2014. Gastrointestinal parasites in rural dogs and cats in Selangor and Pahang states in Peninsular Malaysia. ACTA PARASITOLOGICA. Volume: 59 Issue: 4 Pages: 737-744.
45. Khaw, LT; Ball, HJ; Mitchell, AJ; Grau, GE; Stocker, R; Golenser, J; Hunt, NH. 2014. Brain endothelial cells increase the proliferation of *Plasmodium falciparum* through production of soluble factors. EXPERIMENTAL PARASITOLOGY. Volume: 145 Pages: 34-41.
46. Al-Hamidi, S; Mandy, MAK; Idris, MA; Bin Dajem, SM; Al-Sheikh, AAH; Al-Qutami, A; Al-Hashami, Z; Al-Farsi, H; Al-Mekhlafi, AM; Saif-Ali, R; Beja-Pereira, A; Babiker, HA. 2014. The prospect of malaria elimination in the Arabian Peninsula: A population genetic approach. INFECTION GENETICS AND EVOLUTION. Volume: 27 Pages: 25-31.
47. Salleh, FM; Moktar, N; Yasin, AM; Al-Mekhlafi, HM; Anuar, TS. 2014. An improved stool concentration procedure for the detection of *Cryptosporidium* oocysts in Orang Asli stool samples. JOURNAL OF MICROBIOLOGICAL METHODS. Volume: 106 Pages: 143-145.
48. Mu, AKW; Bee, PC; Lau, YL; Chen, Y. 2014. Identification of Protein Markers in Patients Infected with *Plasmodium knowlesi*, *Plasmodium falciparum* and *Plasmodium vivax*. INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES. Volume: 15 Issue: 11 Pages: 19952-19961.
49. Choy, Seow Huey; Al-Mekhlafi, Hesham; Mahdy, Mohammed A. K.; et al. 2014. Prevalence and Associated Risk Factors of Giardia Infection among Indigenous Communities in Rural Malaysia. SCIENTIFIC REPORTS. Volume: 4 DOI: 10.1038/srep06909.
50. Al-Abd, Nazeem M.; Nor, Zurainee Mohamed; Ahmed, Abdulhamid; et al. 2014. Lymphatic filariasis in Peninsular Malaysia: a cross-sectional survey of the knowledge, attitudes, and practices of residents. PARASITES & VECTORS. Volume: 7 DOI: 10.1186/s13071-014-0545-z.
51. A. Rohani; A. R. Aidil Azahary; M. Alimanda; M.N. Zurainee; H. Rozilawati; W.M.A. Wan Najahdah & H.L. Lee. 2014. Eco-virological survey of Aedes mosquito larvae in selected dengue outbreak areas in Malaysia. J VECTOR BORNE DISEASE. PP 327-332
52. Lau, Y. L.; Jamaiah, I; Rohela, M.; et al. 2014. Molecular detection of Entamoeba histolytica and Entamoeba dispar infection among wild rats in Kuala Lumpur, Malaysia. TROPICAL BIOMEDICINE. Volume: 31 Issue: 4 Pages: 721-727
53. Lau, Y. L.; Cheong, F. W.; Chin, L. C.; et al. 2014. Evaluation of codon optimized recombinant Plasmodium knowlesi Merozoite Surface Protein-1(19) (pkMSP-1(19)) expressed in *Pichia pastoris*. TROPICAL BIOMEDICINE. Volume: 31 Issue: 4 Pages: 749-759
54. Ahmad, A. F.; Ngui, R.; Aidil, Muhammad R.; et al. 2014. Current status of parasitic infections among Pangkor Island community in Peninsular Malaysia. TROPICAL BIOMEDICINE. Volume: 31 Issue: 4 Pages: 836-843
55. Khan, Mohammad Behram; Sonaimuthu, Parthasarathy; Lau, Yee Ling; Chye, Tan Tian; Jeffery, John. 2014. Forensic entomology in Malaysia: knowledge and practices. Asian Biomedicine.
56. Chandrasekaran, Hemalatha; Govind, Suresh Kumar; Raman, Kalyani; Thergarajan, Gaythri. 2014. High lipid storage in vacuolar forms of subtype 6 blastocystis sp in ostrich. Parasites & Vectors. Page: 7469



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FUN FACTS

There are known to be over 430 species of parasites that can and do live on or in the human body

One of the deadliest parasites is mosquito borne parasite which causes Malaria. Malaria has killed more people since humans first evolved, than any other disease

Some parasites are plants. The world's largest flowering plant, the Rafflesia, is parasitic, living inside tropical trees

Tapeworms can grow inside you and reach lengths of up to 30 feet long!

Many animals spend hours and hours grooming each other to remove parasites. This adaptation may even be the origins of cooperative behaviour and civilization itself!

The 'Cleaner Wrasse' is a small tropical fish that eats the parasites off the skin of bigger fish. The bigger fish have even been observed lining up for 'treatment'!

Chimpanzees are known to eat spiky leaves to kill the worms living in their intestines

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INTERNATIONAL EXPERIENCES

Special trip to Germany (April, 2013)

Soo Huey and Soo Ching

Last April Soo Ching and I attended the 23rd European Congress of Clinical Microbiology and Infectious Diseases in Berlin, Germany. It was an enormous conference with researchers from all over the world gathering to share knowledge and ideas. The most exciting parts were meeting with people doing research in the same field and playing games in one of the company's booths. Not forgetting we were in the land known for its wealth of history and strong economy, frigidity was something we never felt whenever we stepped out of a train or a shop with a map in our hand as someone would readily come forth and offer kindness to guide us to our destination. It's the people's hospitality that has impressed me the most aside from the fascinating buildings and picturesque sceneries in the historical city centre.



New York City 'The Big Apple' (Nov 2012 - March 2013& Nov 2013 - Feb 2014)

Soo Ching

I would like to express my utmost gratitude to Prof. Dr. Yvonne Lim Ai Lian and Prof. Dr. Chua Kek Heng for giving me the opportunity to be attached at the Department of Microbiology, New York University (NYU) Langone Medical Center, United States from November 2012 till March 2013 and again in November 2013 till February 2014. I am also greatly indebted to Assistant Professor Dr. P'ng Loke and his wonderful team from NYU Langone Medical Center for providing valuable advice and assistance throughout both trips. The exposure to advanced techniques used for gut microbiota analysis was extremely valuable and working alongside highly motivated and enthusiastic researchers was very inspiring in every aspect. I also gained priceless life experiences during my time in New York. Being abroad gave me a new perspective towards life and taught me to adapt to new cultures around me. Lastly, I would like to end with this sentence which expresses my overall feelings about this trip.



National Institute for Medical Research (NIMR), London (July- September 2013)

Dr Amirah Amir

The three months spent in Prof. Tony Holder's lab in NIMR was invaluable. Under the guidance of Dr. Robert Moon, I was trained to do continuous culture of *Plasmodium knowlesi*, A1.H1 strain. Besides trying to induce gametocyte in the A1.H1 strain, we also attempted to adapt the *P. knowlesi* clinical isolates into continuous culture. I was also given the opportunity to do some transfection work in collaboration with Dr. Moon. This trip was an eye-opener and a great exposure to how scientists work around the world. I would like to thank my supervisors, Assoc. Prof. Dr. Lau Yee Ling, Prof. Dr. Fong Mun Yik and Datin Dr Indra Vytilingam for this wonderful opportunity. Not forgetting everyone from Tony's lab who has been the best host I can ever ask for.

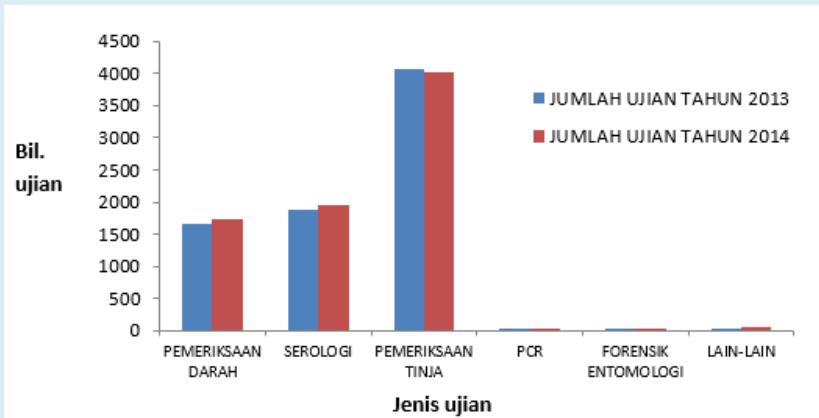


Beating Malaria - London (1st – 3rd July 2014)

Cheong Fei Wen

I attended the Beating Malaria Conference which was organised in O2 Peninsula Square, London, England during July 2014. It was a great experience as a lot of malaria experts from all over the world attended the conference to share about their knowledge and research fields. Inspiring ideas which helped me to improve my research project were obtained during the conference. Besides this, my supervisor Assoc. Prof. Dr. Lau Yee Ling and I were able to meet up with our collaborators, Prof. Dr. Tony Holder and Dr. Robert Moon in National Institute for Medical Research. Finally, I would like to take this opportunity to thank my supervisors, Prof. Dr. Fong Mun Yik and Assoc. Prof. Dr. Lau Yee Ling for this fruitful and eye-opening trip.



**A. Sampel yang diproses:****B. Pengajaran untuk pelajar yang menjalani latihan:**

- Pelajar Tahun 3 sesi 2014/2015 program Diploma Teknologi Makmal Perubatan, Kolej Sains Kesihatan, PPUM (11/11/2013 hingga 2/5/2014).
- Penempatan makmal klinikal pelajar Program Diploma Teknologi Makmal Perubatan PUSRAWI (8/9/2014 hingga 2/11/2014).
- Penempatan Pelajar-pelajar Sarjana Muda Sains Bioperubatan bagi latihan industri semester 3. Sesi 2013/2014 (4 - 22 Ogos 2014).
- Penempatan pelajar, Hemalatha a/p Palaisingam untuk latihan industri dari Ramsay Sime Darby Healthcare College, Shah Alam (7 April hingga 2 Mei 2014).



EQA capacity building/training on Helminth diagnosis, Shanghai, China

C. Persidangan/konferen/bengkel yang disertai:**2013**

- 2nd. Workshop on EQAP – for neglected tropical diseases laboratories in Western Pacific Region Countries. Organised by National Institute of Parasitic Diseases, Chinese Center for Diseases Control and Prevention (NIPD), Shanghai, China.
- Peserta: En Wan Hafiz Wan Ismail dan P/M Dr Zurainee Mohamed Nor

**2014**

- 3rd. EQA capacity building/training on Helminth diagnosis, Shanghai, China.
- Peserta: Pn Sharifah Nor Akmar Syed Mohd dan Pn Farikha Sarip

D. Penglibatan dalam penyelidikan:

Terlibat di dalam kajian yang bertajuk "Liver cirrhosis and splenomegaly associated with *Schistosoma mansoni* in a Sudanese woman in Malaysia: A case report" yang diterbitkan di *Asian Pacific Journal of Tropical Medicine* (2015).

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DEPARTMENT OF PARASITOLOGY | ANNUAL NEWSLETTER | ISSUE 4 ACTIVITIES



Workshop on mosquito identification
26-28/08/2013



Goodbye Dr. Mohammed Mahdy, June 2013



Health Education Learning for Orang Asli



Seminar Perbincangan Kursus Program Sarjana



Hari Raya Aidilfitri



Annual Animal Awareness Day



2013

Awatif Mohamed Abdul Salam Salih
Naela Abdulaziz A. Alyousefi
Romano Ngui
Nabil Ahmed M. Nasr
Mohammed R. Shaker

2014

Adela Jda Anak Jiram
Claudia Nisha Anthony
Haridah Binti Alias
Kamil Ali Obeid Bramha
Lee Wenn Chyan
Muhammad Aidil Bin Roslan
Nor Linda Binti Abdullah
Sonaimuthu Parthasarathy
Thulasi a/p Kumar
Vanitha a/p U. Palaeaya
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Congratulations



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