



Introductory Training Course in Molecular and Applied Parasitology

"PhD South" Programme of the LabEx PARAFRAP

Montpellier, 13-23 March 2018

Organised by Patrick BASTIEN & Rosa Milagros CORRALES
(with the essential help of Clotilde SABOT, UMR InterTryp,
and Martine BONNEFOY, UMR MiVEGEC)

13th March 2018 : Malaria transmission and control

Morning session (room lap5):

9:00-9:15 : Introduction by Patrick Bastien

9:15-10:30 : Isabelle Morlais ("MIVEGEC", IRD/CNRS/University of Montpellier): [Malaria transmission in natural settings](#)

10:50-12:30 : Fabrice Chandre ("MIVEGEC", IRD/CNRS/ University of Montpellier): [Malaria vector control](#)

Lunch all together : 12:30-14:00

Afternoon session (room lap5):

14:00-15:30 : critical analysis of the article : Goncalves et al. Examining the human infectious reservoir for *Plasmodium falciparum* malaria in areas of differing transmission intensity. Nat Commun. 2017, 8(1): 1133.

<https://www.ncbi.nlm.nih.gov/pubmed/29074880>. DOI 10.1038/s41467-017-01270- (by Sarah-Matio Elangwe Milo)

15:50-17:30 : critical analysis of the article : Nkya et al.. Impact of agriculture on the selection of insecticide resistance in the malaria vector *Anopheles gambiae*: a multigenerational study in controlled conditions. Parasit. Vectors 2014, 7(1): 480 (by Brice Feufack)

14th March 2018 : Insect-parasite interactions

Morning session (room lap5):

9:00-10:30 : Stéphanie Blandin (Institut de Biologie Moléculaire et Cellulaire, CNRS/Univ. of Strasbourg) : [Mosquito antiparasitic responses and potential applications](#)

10:50-12:30 : Anne Geiger ("InterTryp", IRD/CIRAD, Montpellier): [Vectors bacteriome and its involvement in refractoriness or infection of insects by parasites](#).

Lunch all together : 12:30-14:00

Afternoon session (room lap5):

14:00-15:30 : critical analysis of the article: Mitri et al. An Evolution-Based Screen for Genetic Differentiation between *Anopheles* Sister Taxa Enriches for Detection of Functional Immune Factors. PLoS Path. 2015, 11(12): e1005306. doi:10.1371/journal.ppat.1005306 (by Brice FEUFACK)

15:50-17:30 : critical analysis of the article : Aksoy et al. [Analysis of multiple tsetse fly populations in Uganda reveals limited diversity and species-specific gut microbiota](#). Appl Environ Microbiol. 2014 ; 80(14):4301-12. (by Gildas YAOUHEDO)

15th March 2018 : Drug development : from basic biology to drug development



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Morning session (room lap5):

9:00-10:30 : Sharon Wein ("DIMNP", CNRS/ University of Montpellier) : *From Plasmodium phospholipid metabolism to clinical development: the story of choline analogs.*

10:50-12:30 : Jean-Christophe Barale (Institut Pasteur, Paris) : *Anti-malarial target-based approach : lessons and ... rebound ?*

Lunch all together : 12:30-14:00

Afternoon session (room lap5):

14:00-15:30 : critical analysis of the article : McNamara CW et al. Targeting *Plasmodium PI(4)K* to eliminate malaria. *Nature* 2013; 504: 248-253. (by Kutub ASHRAF)

15:50-17:30 : critical analysis of the article : Straimer et al. *Plasmodium falciparum* K13 Mutations Differentially Impact Ozonide Susceptibility and Parasite Fitness In Vitro. *mBio* 2017; 8:e00172-17. <https://doi.org/10.1128/mBio.00172-17> (by Gildas YAOUHEDO)

16th March 2018 : Development of novel antiparasitic drug compounds

Morning session (room lap5):

9:00-10:30 : E. Davioud-Charvet ("Chimie Bioorganique et Medicinale", CNRS/Univ. of Strasbourg) : *Integrative chemical biology and antiparasitic drug discovery*

10:50-12:30 : Rachel Cerdan ("DIMNP", CNRS/ University of Montpellier) : *Structural approaches for rational design of antimalaria compounds*

Lunch all together : 12:30-14:00

Afternoon session (room lap5):

14:00-15:30 : critical analysis of the article : Cal et al. Assessing anti-*T. cruzi* candidates in vitro for sterile cidality. *Int J Parasitol Drugs Drug Resist.* 2016; 6(3):165-170. doi: 10.1016/j.ijpddr.2016.08.003. (by Andrea VELA)

15:50-17:30 : critical analysis of the article : Ross et al., In Vitro Resistance Selections for *Plasmodium falciparum* Dihydroorotate Dehydrogenase Inhibitors Give Mutants with Multiple Point Mutations in the Drug-binding Site and Altered Growth.. *J. Biol. Chem.* 289, pp 17980-17995. DOI: 10.1074/jbc.M114.558353 (by Magamba TOUNKARA)

Week-end 17-18th March 2018 : free time

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19th March 2018 : Interest of whole genome sequencing for drug resistance, population genomics and antigenic diversity in parasites

Morning session (room lap5):

9:00-10:30 : Didier Mesnard (Institut Pasteur, Paris) + Frédéric Ariey (Institut Cochin, Paris) : *Emergence and spread of antimalarial drug resistance in Southeast Asia: contribution of genetic studies.*

10:50-12:30 : Antoine Claessens ("MIVEGEC", CNRS/IRD/University of Montpellier): *Population genomics of Plasmodium falciparum: on the origin of var gene sequence diversity*

Lunch all together : 12:30-14:00



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Afternoon session (room lap5):

14:00-15:30 : critical analysis of the article : Amato et al. Origins of the current outbreak of multidrug resistant malaria in Southeast Asia: a retrospective genetic study. Lancet Inf Dis 2018: [http://dx.doi.org/10.1016/S1473-3099\(18\)30068-9](http://dx.doi.org/10.1016/S1473-3099(18)30068-9) (by Atikatou MAMA)

15:50-17:30 : critical analysis of the article : Rubiaz-Pesantez et al. Population genomics of virulence genes of *Plasmodium falciparum* in clinical isolates from Uganda. Sci. Rep. 2017 (by Kutub ASHRAF)

20th March 2018 : Anti-parasitic vaccines (1)

Morning session (room lap5):

9:00-10:30 : Shahin Tajeri (Institut Cochin, Paris): *Vaccination against bovine theileriosis: from biology to disease control*

10:50-12:30 : Nicaise T. Ndam ("MERIT", IRD/Ghana-Paris VI) : *Anti-disease immunogens in future malaria vaccines: from structural conservation to vaccine immunogen.*

Lunch all together : 12:30-14:00

Afternoon session (room lap5):

14:00-15:30 : critical analysis of the article : Chaussepied et al. TGF-b2 induction regulates invasiveness of *Theileria*-transformed leukocytes and disease susceptibility. PLoS Pathog 6, e1001197, doi: 10.1371/journal.ppat.1001197 (2010) (by Atikatou MAMA Emebet ADEM)

15:50-17:30 : critical analysis of the article : Nielsen et al. The Influence of Sub-Unit Composition and Expression System on the Functional Antibody Response in the Development of a VAR2CSA Based *Plasmodium falciparum* Placental Malaria Vaccine. PLoS One. 2015; 10(9):e0135406. doi: 10.1371/journal.pone.0135406. (by Kakou-Ghislain AKA)

21st March 2018 : Host-parasite relationships

Morning session (room lap5):

9:00-10:30 : Bruno Bucheton ("InterTryp", IRD/CIRAD, Montpellier-Guinée) : *Trypanotolerance in human and cattle: genetic, immune determinants and implication for control.*

10:50-12:30 : Bernard Carcy (Faculty of Pharmacy, Montpellier): *How to evade host immunity? the examples of Apicomplexan hemoparasites Babesia and Plasmodium.*

Lunch all together : 12:30-14:00

Afternoon session (room lap5):

14:00-15:30 : critical analysis of the article : Capewell et al. The skin is a significant but overlooked anatomical reservoir for vector-borne African trypanosomes. eLife 2016;5:e17716. DOI: 10.7554/eLife.17716 (by Andrea VELA)

15:50-17:30 : critical analysis of the article : Hutchings et al. New insights into the altered adhesive and mechanical properties of red blood cells parasitized by *Babesia bovis*. Molec Microbiol (2007) 65(4), 1092–1105. (by François Sougal NGAMBIA FREITAS)



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22nd March 2018 : Novel diagnostic and treatment strategies

Morning session (room lap1):

9:00-10:30 : Loïc Rivière (CNRS/Univ of Bordeaux) : *Diagnosis in parasitology : back to the future!*

10:50-12:30 : Abdoulaye Djimdé (MRTC, Bamako, Mali) : *Should current ACTs fail in Africa, what's next?*

Lunch all together : 12:30-14:00

Afternoon session (room lap1):

14:00-15:30 : critical analysis of the article : Gootenberg et al. Nucleic acid detection with CRISPR-Cas13a/C2c2.

Science. 2017 April 28; 356 (6336): 438–442. doi:10.1126/science.aam9321. (by Magamba TOUNKARA)

15:50-17:30 : critical analysis of the article : Boni et al. Benefits of using multiple first-line therapies against malaria. PNAS 2008, 105 (37) : 14216–14221. (by Sarah-Matio ELANGWE MILO)

23rd March 2018 : Anti-parasitic vaccines (2)

Morning session (room lap1):

9:00-10:30 : Ogobara K. Doumbo (MRTC, Bamako, Mali) : *Malaria vaccine development in the field*

10:50-12:30 : Olivier Silvie ("CIMI", Inserm/CNRS/UPMC, Paris) : *Future prospects for malaria vaccines*

Lunch all together : 12:30-14:00

Afternoon session (room lap1):

14:00-15:30 : critical analysis of the article : Sissoko et al. Safety and efficacy of PfSPZ Vaccine against *Plasmodium falciparum* via direct venous inoculation in healthy malaria-exposed adults in Mali : a randomised, double-blind phase 1 trial. Lancet Infect. Dis. 2017; [http://dx.doi.org/10.1016/S1473-3099\(17\)30104-4](http://dx.doi.org/10.1016/S1473-3099(17)30104-4) (by Kakou-Ghislain AKA)

15:50-17:30 : critical analysis of the article : Srinivasan et al. A malaria vaccine protects *Aotus* monkeys against virulent *Plasmodium falciparum* infection.. NPJ Vaccine 2017 (by François Sougal NGAMBIA FREITAS Emebet ADEM)

17:30-18:00 : Conclusions and general discussion

20:00-.... Farewell dinner in Montpellier

