



Bulletin 203 | 6 April 2009

## The MalariaWorld 200<sup>th</sup> issue Draw is still open!

More information on the MalariaWorld draw at the bottom of this bulletin.

### Publications

**Open access | Methodology: Field-adapted sampling of whole blood to determine the levels of amodiaquine and its metabolite in children with uncomplicated malaria treated with amodiaquine plus artesunate combination**

Ntale M, Obua C, Mukonzo J, Margarita M, Gustafsson LL, Beck O, Ogwal-Okeng JW  
Malaria Journal 2009, 8:52 (30 March 2009)

The authors report on a sampling method for quantifying concentrations of amodiaquine and its active metabolite, desethylamodiaquine from small volume, whole blood samples spotted onto filter paper. This methodology increases the feasibility of collecting pharmacokinetic samples in remote field sites and from young children.

**Open access | Research: Costs and cost-effectiveness of vector control in Eritrea using insecticide-treated bed nets**

Joshua O Yukich, Mehari Zerom, Tewolde Ghebremeskel, Fabrizio Tediosi, Christian Lengeler

Malaria Journal 2009, 8:51 (30 March 2009)

This study addresses the cost effectiveness of ITN delivery through routine public sector delivery systems in Eritrea, a country often used as an example of a success story in terms of the outcomes achieved and it was important to know whether it is also cost effective.

### **Antiproliferative and antimalarial anthraquinones of *Scutia myrtina* from the Madagascar forest**

Yanpeng Hou, Shugeng Cao, Peggy J. Brodie, Martin W. Callmander, Fidisoa Ratovoson, Etienne A. Rakotobe, Vincent E. Rasamison, Michel Ratsimbason, John N. Alumasa, Paul D. Roepe, David G.I. Kingston

Bioorganic & Medicinal Chemistry, Volume 17, Issue 7, 1 April 2009, Pages 2871-2876, doi:10.1016/j.bmc.2009.02.022

Bioassay-guided fractionation of an ethanol extract of a Madagascar collection of the bark of *Scutia myrtina* led to the isolation of three new anthrone-anthraquinones, scutianthraquinones A, B and C (1-3), one new bisanthrone-anthraquinone, scutianthraquinone D (4), and the known anthraquinone, aloesaponarin I (5). The structures of all compounds were determined using a combination of 1D and 2D NMR experiments, including COSY, TOCSY, HSQC, HMBC, and ROESY sequences, and mass spectrometry. All the isolated compounds were tested against the A2780 human ovarian cancer cell line for antiproliferative activities, and against the chloroquine-resistant *Plasmodium falciparum* strains Dd2 and FCM29 for antiplasmodial activities. Compounds 1, 2 and 4 showed weak antiproliferative activities against the A2780 ovarian cancer cell

line, while compounds 1–4 exhibited moderate antiplasmodial activities against *P. falciparum* Dd2 and compounds 1, 2, and 4 exhibited moderate antiplasmodial activities against *P. falciparum* FCM29.

**Chemistry: ChemInform Abstract: Mechanical Features of Plasmodium falciparum Acyl Carrier Protein in the Delivery of Substrates**

Francesco Colizzi, Maurizio Recanatini, Andrea Cavalli

ChemInform, Volume 40, Issue 16, Date: April 21, 2009, doi 10.1002/chin.200916206

No abstract available

**Mosquito-borne Diseases**

Michael A. Tolle

Current Problems in Pediatric and Adolescent Health Care, Volume 39, Issue 4, April 2009, Pages 97-140

Despite centuries of control efforts, mosquito-borne diseases are flourishing worldwide. With a disproportionate effect on children and adolescents, these conditions are responsible for substantial global morbidity and mortality. Malaria kills more than 1 million children annually, chiefly in sub-Saharan Africa. Travelers to areas endemic for mosquito-borne diseases require special advice on mosquito avoidance, immunizations, and malaria prophylaxis.

**10.1016/j.cppeds.2009.01.001**

**Reviews: Mutational 'hot-spots' in mammalian, bacterial and protozoal dihydrofolate reductases associated with antifolate resistance: Sequence and structural comparison**

Jordan P. Volpato, Joelle N. Pelletier

Drug Resistance Updates, Volume 12, Issues 1-2, February-April 2009, Pages 28-41, doi: 10.1016/j.drug.2009.02.001

Human dihydrofolate reductase (DHFR) is a primary target for antifolate drugs in cancer treatment, while DHFRs from *Plasmodium falciparum*, *Plasmodium vivax* and various bacterial species are primary targets in the treatment of malaria and bacterial infections. Mutations in each of these DHFRs can result in resistance towards clinically relevant antifolates. We review the structural and functional impact of active-site mutations with respect to enzyme activity and antifolate resistance of DHFRs from mammals, protozoa and bacteria.

**Reviews: Resistance to antimalarial compounds: Methods and applications**

Benoit Witkowski, Antoine Berry, Françoise Benoit-Vical

Drug Resistance Updates, Volume 12, Issues 1-2, February-April 2009, Pages 42-50, doi: 10.1016/j.drug.2009.01.001

Considerable progress has been made in antimalarial research; however, much more effort is required to develop new antimalarials which overcome plasmodial resistance to clinically available drugs and limit the emergence of resistance. In particular, research must focus on understanding the mechanisms by which *Plasmodium falciparum* impedes the action of these drugs. In this review, we discuss the different in vitro and in vivo models used to adequately study resistance to antimalarial compounds. For each molecule studied, the best in vitro and/or in vivo model is highlighted with a detailed discussion of its validity in relation to field data on *P. falciparum* resistance.

**Substituted quinolinyl chalcones and quinolinyl pyrimidines as a new class of anti-infective agents**

Moni Sharma, Vinita Chaturvedi, Y.K. Manju, Shalini Bhatnagar, Kumkum Srivastava, S.K. Puri, Prem M.S. Chauhan

European Journal of Medicinal Chemistry, Volume 44, Issue 5, May 2009, Pages 2081-2091, doi:10.1016/j.ejmech.2008.10.011

Frequency of tuberculosis and malaria is progressively increasing worldwide. New emerging strain of bacterium and resistance to currently available drugs make this field more conscientious and alarming. In this connection a series of substituted quinolinyl chalcones and substituted quinolinyl pyrimidines were synthesized and evaluated for their in vitro antitubercular activity against Mycobacterium tuberculosis H37RV and antimalarial activity against NF-54 strain of Plasmodium falciparum.

### **CR1 levels and gene polymorphisms exhibit differential association with falciparum malaria in regions of varying disease endemicity**

Swapnil Sinha et al.

Human Immunology, Volume 70, Issue 4, April 2009, Pages 244-250, doi:10.1016/j.humimm.2009.02.001

Complement receptor 1 (CR1/CD35) levels on erythrocytes and related CR1 polymorphisms have been associated with response to falciparum malaria in populations inhabiting malaria-endemic regions. Differences in disease association profiles of its low expression alleles have been observed in populations from different regions of the world. We analyzed the influence of CR1 levels and associated SNPs on susceptibility/resistance to falciparum malaria in Indian populations.

### **Parasitology: Multiplexed Real-Time PCR Assay for Discrimination of Plasmodium Species with Improved Sensitivity for Mixed Infections**

Sandra E. Shokoples, Momar Ndao, Kinga Kowalewska-Grochowska, and Stephanie K. Yanow

J. Clin. Microbiol. 2009 47: 975-980, doi:10.1128/JCM.01858-08

The implementation of real-time PCR for the diagnosis of malaria has been hampered by poor sensitivity for the detection of mixed infections. We have optimized a method that enhances the sensitivity of detection of minor species in mixed infections within a single multiplex reaction. Our assay uses species-specific forward primers in combination with a conserved reverse primer and largely overcomes primer competition for the minor species DNA.

### **Qualitative study of transmission dynamics of drug-resistant malaria**

Lourdes Esteva, Abba B. Gumel, Cruz Vargas de León

Mathematical and Computer Modelling, In Press, Accepted Manuscript, Available online 27 March 2009

This paper presents a deterministic model for monitoring the impact of drug resistance on the transmission dynamics of malaria in a human population. The model has a disease-free equilibrium, which is shown to be globally-asymptotically stable whenever a certain threshold quantity, known as the effective reproduction number, is less than unity.

### **Short Communication: Differential sub-nuclear localisation of repressive and activating histone methyl modifications in P. falciparum**

Neha Issar, Stuart A. Ralph, Liliana Mancio-Silva, Catherine Keeling, Artur Scherf

Microbes and Infection, Volume 11, Issue 3, March 2009, Pages 403-407, doi:10.1016/j.micinf.2008.12.010

Post-translational histone modifications and sub-nuclear organization epigenetically influence gene regulation, especially those implicated in antigenic variation of Plasmodium falciparum. Here we screened for histone methylation modifications and determined, for the first time, their spatial nuclear localisation.

### **Short Communication: Enhanced antibody responses to Plasmodium falciparum Pfs28 induced in mice by conjugation to ExoProtein A of Pseudomonas aeruginosa with an improved procedure**

Feng Qian et al.

Microbes and Infection, Volume 11, Issue 3, March 2009, Pages 408-412, doi:10.1016/j.micinf.2008.12.009

In this paper we report our efforts to enhance the immunogenicity of Pfs28, a transmission blocking vaccine candidate of *Plasmodium falciparum*, using a strategy of chemical conjugation.

### **Amplification-free Illumina sequencing-library preparation facilitates improved mapping and assembly of (G+C)-biased genomes**

Iwanka Kozarewa, Zemin Ning, Michael A Quail, Mandy J Sanders, Matthew Berriman, Daniel J Turner

Nature Methods 6, 291 - 295 (15 Mar 2009), doi: 10.1038/nmeth.1311

Amplification artifacts introduced during library preparation for the Illumina Genome Analyzer increase the likelihood that an appreciable proportion of these sequences will be Here we present an amplification-free method of library preparation, in which the cluster amplification step, rather than the PCR, enriches for fully ligated template strands, reducing the incidence of duplicate sequences, improving read mapping and single nucleotide polymorphism calling and aiding *de novo* assembly. We illustrate this by generating and analyzing DNA sequences from extremely (G+C)-poor (*Plasmodium falciparum*), (G+C)-neutral (*Escherichia coli*) and (G+C)-rich (*Bordetella pertussis*) genomes.

### **Molecules in focus: PfEMP1: An antigen that plays a key role in the pathogenicity and immune evasion of the malaria parasite Plasmodium falciparum**

Noa D. Pasternak, Ron Dzikowski

The International Journal of Biochemistry & Cell Biology, Volume 41, Issue 7, July 2009, Pages 1463-1466, doi:10.1016/j.biocel.2008.12.012

The deadliest form of human malaria is caused by the protozoan parasite *Plasmodium falciparum* affecting millions worldwide every year. *P. falciparum* virulence is attributed to its ability to evade the human immune system by modifying infected host red blood cells to adhere to the vascular endothelium and to undergo antigenic variation. The main antigenic ligands responsible for both cytoadherence and antigenic variation are members of the *P. falciparum* Erythrocyte Membrane Protein-1 (PfEMP1) family.

### **Molecules in focus: Citicoline (CDP-choline): What role in the treatment of complications of infectious diseases**

Ronan Jambou, Fatima El-Assaad, Valery Combes, Georges Emile Grau

The International Journal of Biochemistry & Cell Biology, Volume 41, Issue 7, July 2009, Pages 1467-1470, doi:10.1016/j.biocel.2009.02.011

A dysregulated host immune response, as opposed to the intrinsic virulence of a microbial pathogen induces a large part of the pathology seen in infectious diseases. However, current therapies are designed to target the pathogen rather than the underlying pathogenic mechanisms responsible for the manifestation of the pathology. Recent studies have highlighted the role of endothelial cell alteration in the pathology induced in sepsis and cerebral malaria. This short review highlights the potential role of citicoline as part of adjunct therapy in the treatment of infectious diseases.

### **Infectious disease surveillance update**

Onisillos Sekkides

The Lancet Infectious Diseases, Volume 9, Issue 4, April 2009, Page 213, doi:10.1016/S1473-3099(09)70097-0

Advances in Malaria Control.

### **Artemisinin resistance could endanger fight against malaria**

Talha Burki

The Lancet Infectious Diseases, Volume 9, Issue 4, April 2009, Page 213, doi:10.1016/S1473-3099(09)70098-2

No abstract available

### **Application of pharmacogenomics to malaria: a holistic approach for successful chemotherapy**

Rajeev K Mehlotra<sup>†</sup>, Cara N Henry-Halldin & Peter A Zimmerman

Pharmacogenomics, March 2009, Vol. 10, No. 3, Pages 435-449

Our knowledge concerning the basic mechanisms involved in the pharmacokinetics of antimalarial drugs is fragmentary. In addition, the link between antimalarial drug pharmacokinetics and treatment outcomes is generally unclear. The purpose of this article is to provide general background information on antimalarial drug resistance and associated parasite genetic factors, and subsequently highlight the aforementioned unexplored and unclear areas, with a view to stimulate much needed further research.

### **Glycophorin B is the erythrocyte receptor of Plasmodium falciparum erythrocyte-binding ligand, EBL-1**

D. C. Ghislaine Mayer, Joann Cofie, Lubin Jiang, Daniel L. Hartl, Erin Tracy, Juraj Kabat, Laurence H. Mendoza, and Louis H. Miller

PNAS 2009 106:5348-5352; published online before print March 11, 2009, doi:10.1073/pnas.0900878106

In the war against Plasmodium, humans have evolved to eliminate or modify proteins on the erythrocyte surface that serve as receptors for parasite invasion, such as the Duffy blood group, a receptor for Plasmodium vivax, and the Gerbich-negative modification of glycophorin C for Plasmodium falciparum. In turn, the parasite counters with expansion and diversification of ligand families. The high degree of polymorphism in glycophorin B found in malaria-endemic regions suggests that it also may be a receptor for Plasmodium, but, to date, none has been identified. We provide evidence from erythrocyte-binding that glycophorin B is a receptor for the P. falciparum protein EBL-1, a member of the Duffy-binding-like erythrocyte-binding protein (DBL-EBP) receptor family.

### **Research Article: A comprehensive Plasmodium falciparum protein interaction map reveals a distinct architecture of a core interactome**

Stefan Wuchty, John H. Adams, Michael T. Ferdig

Proteomics, Volume 9, Issue 7, Date: No. 7 April 2009, Pages: 1841-1849, doi 10.1002/pmic.200800383

We derive a map of protein interactions in the parasite Plasmodium falciparum from conserved interactions in Saccharomyces cerevisiae, Caenorhabditis elegans, Drosophila melanogaster, and Escherichia coli and pool them with experimental interaction data. The application of a clique-percolation algorithm allows us to find overlapping clusters, strongly correlated with yeast specific conserved protein complexes. Such clusters contain core activities that govern gene expression, largely dominated by components of protein production and degradation processes as well as RNA metabolism.

### **Residual effects of Mossman 100 (permethrin 10% EC) impregnated bed nets and its impact on malaria vectors and incidence of malaria**

N Komalamisra, Y Samung, R Srisawat, P Kaisri

The Southeast Asian Journal of Tropical Medicine and Public Health, Volume 40, Number 2, March 2009: 229

The objective of this field trial was to assess the residual effectiveness of permethrin 10% treated mosquito nets on malaria control compared with untreated nets. The study was carried out between July and December 2007 in the Pong Nam Ron District of Chantaburi Province, Thailand.

### **Society Meeting Paper: Proceedings of a joint meeting between the Norwegian Society of Infectious Diseases and the Royal Society of Tropical Medicine and Hygiene, Oslo, 20 June 2008**

Melanie J. Newport, Bjorn Myrvang

Transactions of the Royal Society of Tropical Medicine and Hygiene, Volume 103, Issue 4, April 2009, Pages 321-324, doi:10.1016/j.trstmh.2008.11.010

This paper presents the proceedings of a scientific meeting that was held between the Royal Society of Tropical Medicine and Hygiene and the Norwegian Infectious Diseases Society at Ullevål University Hospital, Oslo on 20 June 2008. Seven speakers updated the audience on recent advances in relevant issues, including international maternal and child health, podoconiosis, schistosomiasis and HIV, leprosy in the UK, rapid diagnostic tests for malaria, delayed diagnosis of tuberculosis and the Global Filariasis Programme. The meeting ended with a series of case presentations.

### **Society Meeting Paper: Out with the old, in with the new: the utility of rapid diagnostic tests for malaria diagnosis in Africa**

Chris Drakeley, Hugh Reyburn

Transactions of the Royal Society of Tropical Medicine and Hygiene, Volume 103, Issue 4, April 2009, Pages 333-337, doi:10.1016/j.trstmh.2008.10.003

After many years of development, rapid diagnostic tests (RDTs) for malaria are now being rolled out in many African countries to support the introduction of artemisinin-based combination therapies (ACT). RDTs create new opportunities both for improved care and as research tools, but it is important that the research agenda continues to address the many challenges, both operational and technical, that still need to be met. Here we review what is known and what new evidence is needed to maximise the utility of RDTs in Africa.

### **Original Articles: A qPCR-based multiplex assay for the detection of Wuchereria bancrofti, Plasmodium falciparum and Plasmodium vivax DNA**

Ramakrishna U. Rao, Yuefang Huang, Moses J. Bockarie, Melinda Susapu, Sandra J. Laney, Gary J. Weil

Transactions of the Royal Society of Tropical Medicine and Hygiene, Volume 103, Issue 4, April 2009, Pages 365-370, doi:10.1016/j.trstmh.2008.07.012

The purpose of this study was to develop real-time multiplex quantitative PCR (qPCR) assays for the simultaneous detection of *Wuchereria bancrofti* (Wb), *Plasmodium falciparum* (Pf) and *P. vivax* (Pv) in mosquitoes. We optimized the assays with purified DNA samples and then used these assays to test DNA samples isolated from *Anopheles punctulatus* mosquitoes collected in villages in Papua New Guinea where these infections are co-endemic.

### **Book Review: Atlas of Human Malaria**

Giovanni Swierczynski, Maria Gobbo. Az Color s.r.l., Sirmione, 2007.

John Williams

Transactions of the Royal Society of Tropical Medicine and Hygiene, Volume 103, Issue 4, April 2009, Page 428, doi:10.1016/j.trstmh.2009.01.002

No abstract available

### **Can malaria be eliminated?**

Brian Greenwood

Transactions of the Royal Society of Tropical Medicine and Hygiene, Volume 103, Issue 1, Supplement 1, April 2009, Pages S2-S5, doi:10.1016/j.trstmh.2008.10.027

Since the perceived failure of the Global Programme for Malaria Eradication in 1969, the eradication of malaria has not been considered a feasible goal. However, in October 2007 the goal of malaria eradication was resurrected by Melinda and Bill Gates, and this aspiration has subsequently been endorsed by the WHO and by the Roll Back Malaria Partnership. This change in direction of malaria control has provoked a vigorous debate within the malaria research and control communities as to whether resurrection of the goal of eradication at this point in time is helpful or likely to be counterproductive. The consensus that has emerged is that eradication of malaria, although theoretically possible, is not likely to be feasible within the medium term using existing control tools.

However, malaria elimination (cessation of local transmission) is a realistic short- to medium-term goal for an increasing number of countries that are already bringing malaria under control.

### **Caring for children with cerebral malaria: insights gleaned from 20 years on a research ward in Malawi**

Terrie E. Taylor

Transactions of the Royal Society of Tropical Medicine and Hygiene, Volume 103, Issue 1, Supplement 1, April 2009, Pages S6-S10, doi:10.1016/j.trstmh.2008.10.049

Clinicians treating patients with severe malaria in endemic areas confront a variety of challenges inherent to resource-poor settings, but it is possible to provide excellent care. The basic requirements, in addition to a thorough clinical examination of the patient, include assessing parasitaemia; determining anaemia (via haematocrit or haemoglobin); estimating blood glucose and lactate concentrations; establishing and maintaining i.v. access; measuring oxygen saturation and providing supplemental oxygen when necessary; grouping, cross-matching and transfusing blood. This paper provides practical information on determining the Blantyre Coma Score, collecting cerebrospinal fluid and measuring the opening pressure, and administering controlled volumes of i.v. fluids. Included is a narrative protocol describing the approach to patients with cerebral malaria used on the research ward at the Queen Elizabeth Central Hospital in Blantyre, Malawi.

### **The evolution of drug-resistant malaria**

Christopher V. Plowe

Transactions of the Royal Society of Tropical Medicine and Hygiene, Volume 103, Issue 1, Supplement 1, April 2009, Pages S11-S14, doi:10.1016/j.trstmh.2008.11.002

Molecular epidemiological investigations have uncovered the patterns of emergence and global spread of Plasmodium falciparum resistance to chloroquine and sulfadoxine-pyrimethamine. Malaria parasites highly resistant to chloroquine and pyrimethamine spread from Asian origins to Africa, at great cost to human health and life. If artemisinin-resistant falciparum malaria follows the same pattern, renewed efforts to eliminate and eradicate malaria will be gravely threatened. This paper, adapted from a talk given in honour of Professor Malcolm Molyneux in Liverpool in September 2008, reviews the rise and fall of clinically important forms of drug-resistant falciparum malaria and considers how lessons learned from studying the evolution of drug-resistant malaria can be applied to efforts to prevent and deter resistance.

### **Developing national treatment policy for falciparum malaria in Africa: Malawi experience**

Grace Malenga et al.

Transactions of the Royal Society of Tropical Medicine and Hygiene, Volume 103, Issue 1, Supplement 1, April 2009, Pages S15-S18, doi:10.1016/j.trstmh.2009.02.003

The Roll Back Malaria (RBM) initiative promotes strong partnerships for implementing effective malaria control measures. The development of clear policies to guide such implementation at country level offers a way of assessing the achievement of set milestones in this collaborative venture. In this article we describe the policy development process for the treatment of falciparum malaria in Africa, based on experience in Malawi, where the first-line drug treatment was recently changed from sulfadoxine-pyrimethamine to an artemisinin combination therapy.

## **Jobs**



**Post Doctoral Fellow in Medical Entomology, London School of Hygiene & Tropical Medicine(University of London), Department**

## **of Infectious and Tropical Diseases, Disease Control and Vector Biology Unit**

Closing date for applications: 4 May 2009

Ref: reference NH02

There has been a recent resurgence of interest in medical entomology research and renewed international recognition of the public health potential of vector control. The development of emerging technologies for controlling malaria vector mosquitoes in Africa, whilst additionally strengthening relevant endemic country research capacity is essential for successful malaria elimination.

We are looking for a post doctoral researcher, preferably with experience of conducting field research in tropical countries to provide essential supervision, support and mentorship required by post-graduate students who will undertake field research at the Ifakara Health Institute (IHI) in Tanzania [www.ihl.or.tz](http://www.ihl.or.tz) . The successful candidate will act as a project leader of an international collaboration to investigate the control of adult African malaria vectors with spatially repellent compounds and insecticides. A relevant doctorate or equivalent, strong scientific and research training skills, as well as adaptability and ability to work in a team is essential. Experience with entomology, epidemiology, international health, challenging conditions and team leadership desirable but not essential. The post is available for 3 years.

The appointment will be made on the LSHTM National Research Fellow scale with a starting salary between £31,738 - £36,533 per annum depending on qualifications and experience. Additional overseas allowances and benefits will be provided as appropriate.

For further particulars and an application form, please contact The Personnel Office, LSHTM, (telephone 020 7927 2203 (24 hour answer phone) or e-mail [personnel@lshtm.ac.uk](mailto:personnel@lshtm.ac.uk)), quoting reference NH02. Only applications in the format outlined in the recruitment pack will be considered. Applicants are encouraged to contact Sarah Moore (email: [smoore@ihl.or.tz](mailto:smoore@ihl.or.tz)) or Nigel Hill (email: [nigel.hill@lshtm.ac.uk](mailto:nigel.hill@lshtm.ac.uk)) for informal discussions.

The London School of Hygiene & Tropical Medicine is committed to being an equal opportunities employer

Don't forget to mention **MalariaWorld** when replying to this advert.

## **News**

### Africa

31 March 2009, Africa Science News Service

#### **Kenya: Global Financial Crisis should not affect Health funding for Africa**

The effect of the credit crunch is being felt across the globe with both developed and developing countries rushing to cut expenditure in key government departments. US President, Barack Obama signed a USD787 billion of rescue stimulus package last month, in a bid to save the US economy from further spiral.

30 March 2009, ANGOP

#### **Angola: Zaire Teachers Get Malaria Fight Training**

A total of 63 teachers from all levels are since Saturday attending a seminar on "Malaria prevention and treatment measures" in Soyo district, northern Zaire province, Angop learned.

30 March 2009, New Times

**Rwanda: Gasabo District Spends Rwf 240 Million on Indoor Mosquito Spraying**

At least Rwf 240m has been spent in implementing the Indoor Residual Spraying (IRS) project in Gasabo District, as part of the fight against malaria. This was disclosed last week by Eric Rutoni Kayoge, the IRS Operations Manager.

26 March 2009, IPPmedia

**United Republic of Tanzania: Govt sees malaria beaten in 6 years**

Following Monday`s release of a new global map on malaria, the government has expressed hope that Tanzania will triumph over the killer disease in six years` time

25 March 2009, Ghana News

**Ghana: Malaria endemic areas educated on prevention systems**

A five-day public educational campaign against malaria has ended at Jema in the Kintampo South District, Brong-Ahafo Region for six endemic areas. The exercise, aimed at sensitizing the people living in remote areas in the district on dangers associated with malaria, was carried out by staff of the district Information Services Department (ISD) and jointly sponsored by the Ministry of Health (MoH) and the Ghana Health Service (GHS).

15 March 2009, AllAfrica.com

**Angola: Health Ministry Foresees to Reduce Malaria Cases**

The Health Ministry (Minsa) intends to decrease from 15,000 new cases of malaria registered every year to 12,000 for 100,000 people , until the end of the year, as it is referred on the national plan for 2009, presented Wednesday at the 20th ordinary council, that is running in Huambo city.

Asia

29 March 2009, Daily Times

**Pakistan: Dengue, malaria mosquitoes breeding in ponds of stagnant water:**

The City District Government Lahore (CDGL) teams will start the second phase of fumigation in Gulberg Town and other parts of the city from tomorrow (Monday) to get rid of the growing number of mosquitoes in its drive against malaria and dengue.

26 March 2009, Xinhua

**China: Gov't: Tanzania to beat malaria in six years**

The government of Tanzania has expressed high hope of rolling out malaria by 2015 after Monday's release of a new global map on the killer disease.

Oceania

26 March 2009, ABC Online

**Australia: Scientist hopes malaria efforts help dengue fight**

A Brisbane-based Army scientist hopes her work on treatments for drug-resistant malaria may also help control dengue fever.

Americas

1 April 2009, PR Web (press release)

**USA: Nothing But Nets Launches World Malaria Day Fundraising Challenge**

The United Nations Foundation's Nothing But Nets campaign launched a worldwide fundraiser challenge today to raise money to send lifesaving bed nets to refugee camps in Africa, where malaria is the number one killer of refugees.

1 April 2009, Liberian Daily Observer

**USA: USAID Gives MOH Malaria Medicines**

The United States Agency for International Development (USAID) has handed over to the Ministry of Health and Social Welfare (MOHSW) a shipment of artemisinin-based combination therapy (ACT) drugs to treat malaria.

31 March 2009, Kaisernetwork.org

**USA: Funding HIV/AIDS, TB, Malaria 'Smart Investment,' U.N. Secretary General Ban Says**

Funding programs aimed at fighting HIV/AIDS, tuberculosis and malaria is a "smart investment," United Nations Secretary General Ban Ki-moon said Monday in a video message to a meeting in Caceres, Spain, to call on donors to fund United Nations-supported efforts against the three diseases, Xinhuanet reports.

30 March 2009, American Chronicle

**USA: History of Global Killer- Malaria**

A female Anopheles mosquito acts as a deadly hypodermic, injecting the malaria parasite when she feeds on human blood. Nearly half billion people get malaria each year. More than a million die. After decades of neglect, the world is renewing its fight against the disease.

26 March 2009, IRINnews.org

**USA: ASIA: Fighting the spread of Artemisinin-resistant malaria**

Scientists and health workers are racing to contain a malaria strain along the Thai-Cambodia border that is becoming increasingly resistant to Artemisinin, the best drug available to fight it, experts say.

25 March 2009, OurSports Central (press release)

**USA: Sounders FC Launch Campaign to Buy Bed Nets to Prevent Malaria**

The Seattle Sounders FC will launch a Bed Net fundraising campaign by inviting fans to make a donation at Saturday's Sounders FC match at the Xbox Pitch at Qwest Field.

Europe

30 March 2009, Times Online

**UK: Waging war on superbugs**

An investigation into the evolution of disease and how genetics are helping in the war against infections from malaria to MRSA

26 March 2009, EDTCP

**The Netherlands: Putting the well-being of African study participants first: Gabon establishes national ethics committee**

As the number of health research conducted in sub-Saharan Africa increases, so does the need for improved review of the ethical and scientific rigour of these trials. As we work on increasing the quality of research, we should also work on ensuring the safety of research participants. The recently established National Bioethics Committee of Gabon, which was established with the help of a grant from the European and Developing Countries Clinical Trials Partnership (EDCTP), is an example of the progress made to safeguard the well-being of African study participants.

26 March 2009, Insciences Organisation

**Switzerland: Most detailed malaria map ever highlights hope and challenges facing global community**

The most detailed map ever created of malaria risk worldwide is published today by an international team of researchers funded by the Wellcome Trust.

## The MalariaWorld 200<sup>th</sup> issue Draw

To celebrate this milestone we have organized a draw with **12 great prizes!**

1. Photo camera: 1 Pentax Optio M60 (10 Mb pixels) in a black leather case + a 2 Gb memory card, offered by Pentax Netherlands through Photo Van Beek
2. Journal subscriptions: 5 x 1 year online subscription to Acta Tropica or another parasitological journal, offered by Elsevier Publisher
3. Malaria Mosquito art: 1 superb Anopheles mosquito image on canvas size 50x70 cm, offered by Bugs in the Picture, Wageningen, The Netherlands
4. Mugs: 5 'End – Malaria' Blue Ribbon mugs, offered by the Malaria Foundation International

### How to participate

For every new subscriber that you bring to MalariaWorld your name will be added to the draw. Here's how:

Open a new email. First, provide the **name**, **email address**, and **country** of the person you want to sign up. Below you write your own name and email address. Send your email to [inga@malaria-world.com](mailto:inga@malaria-world.com) . Only current members can participate in the draw. You can sign up more than one person in one email (make sure you put your own name and email address last!) or send more emails. New email addresses will be verified. Terms and conditions of the draw are shown at the end of this email.

The winners will be announced in MalariaWorld – Issue 205. In case we draw winners from non-malarious countries we hope that these are willing to donate their prize to a colleague in a malaria-endemic country.

### MalariaWorld - Knowledge for Solutions

K&S Consulting is an independent consultancy firm concerned with medical information provision, training activities, and infectious diseases consultations.

Ingeborg (Inga) van Schayk, MSc & Bart Knols, PhD MBA  
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