**Alexis Nzila, PhD**

**Asst. Professor**

King Fahd University of Petroleum and Minerals (KFUPM)

PO Box 468 Dhahran Saudi Arabia

Office:+966 3 860 7716

Home: +966 3 860 5021

Email: alexisnzila@kfupm.sa

Email: alexisnzila@yahoo.co.uk

**SUMMARYOFQUALIFICATIONS AND MAJOR ACHIEVEMENT:**

-Trained as Parasitologist and biochemist.

- Currently, Asst. Professor in Biological Studies

-Lead a research group for more than 10 years

Have a deep understanding of the biology (biochemistry) of folate in malaria and in mammalian cell: Used this knowledge to discover new drugs against malaria

-Evaluated one of such drugs (methotrexate) in baboons

-Discovered strategies to reverse resistance to antimalarial antifolates, using the ucosuric agent probenecid (which has been tested in a PhaseII/III trial in human)

- Carried out Phase I clinical evaluation in human of methotrexate, an old drug, I “re-discovered” as antimalarial

-Contributed to the understanding of the mechanisms of resistance to antimalarials

- contributed to establishing that methotrexate is also potent against *Plasmodium vivaxin vitro*.

-Experienced in leadership, and in creative thinking, which have led to the discovery of new antimalarials,using malaria and cancer cells biochemistry

- Managed research grants and some of them of more than 300,000 US Dollars.

-Good writing skills: Published more than 45 manuscripts in international scientific journals

-Good communications kills: Participated in several international conferences

- Got two majors awards. The African scientists of the year 2006 by Pfizer-Royal Society, UK and the African scientist of the year 2009 by European Union developing countries clinical trial partnership (EDCTP).

**PAST PROFESSIONAL AFFILIATIONS:**

Worked with

- University of Cape Town, South Africa

-University of Liverpool, UK

-University of Oxford, UK

-University of Washington, Seattle, USA

-The KEMRI/Wellcome Trust collaborative programme in Kenya

**SPECIALISEDSKILLS:**

Proficient in:

-French and English

-Microsoft package, Word, Powerpoint, Excell;Stata programme(statistics):ISISDraw (chemical structure)

**PROFESSIONALEXPERIENCE:**

From Sept 2011

**Asst. Professor, at the King Fahd University of Petroleum and Minerals (KFUPM), Dharan Saudi Arabia**

Activity: Teaching to undergraduate and graduate classes, leading a research group

April 2011-July 2011:

**Visiting scientist at the University of Oxford, Wellcome Trust Center for Human geneitcs, Oxford**

Activity:

Analysis of wide genome variation of malaria parasite

*October 2010-March 2011:*

**Visiting scientist at the University of the Cape Town, at the Department of Chemistry and Clinical pharmacology.**

Activity:

Work on Biotransformation of compounds as strategy to discover new drugs

In vitro High through put screening of antimalarials

Drug repositioning as strategy to discover new antimalarial

*January2007 to present 2010 October 2011*

**Sanger Institute (Cambridge, Hinxton), and University of Oxford Hinxton and Oxford UK**

Principal investigator

Whole genome

Phenotype association to understand the mechanisms of antimalarial drug resistance using the new sequencing platform, Solexa sequencing.

This is a collaborative project between the Sanger Institute and our KEMRI/Wellcome Trustcenter.

Organised and directed the following work at the KEMRI/Wellcome center:

-*In vitro* adaptation of malaria parasite for long term culture

-*in vitro* chemosensitivity profile of Kenyan isolates against most 20antimalarials

-Preparation of human-DNA-free parasites using lymphoprep and plasmodipur filters for sequencing (Solexa sequencing at Sanger Institute).

*January2005 to present*

**KEMRI Wellcome Trust Programme Nairobi, Kenya**

Principal investigator

Studies on “Understanding the mechanisms of lumefantrine, piperaquine and amodiaquine resistance in Plasmodium falciparum".

Organised and directed the following work:

-*In vitro* chemosensitivity profiles of parasite against antimalarials

-Sequencing of drug resistance gene (using capillary method)

-Selection of resistance *in vitro* and *in vivo* (using murine malaria)

-Reversal of drug resistance *in vitro* and *in vivo* using chemosensitiser agents

*September 1999 to December2004*

**University of Liverpool Liverpool, UK**

Research fellow

Studies on parasite biochemistry and understanding of antimalarial mode of actions(3

Months per year):

Carried out the following work:

-Quantification of drug uptake/drug transport in the parasite

-Expression and purification of parasite dihydrofolate reductase

*September 1999 to September2004*

**KEMRI/Wellcome Trust Nairobi**

Research fellow

Principal Investigator:"Understanding of the mode of action of the combination of antifolate drugs and the mechanism of pyrimethamine/sulfadoxine (Fansidar®) resistance in *P.falciparum*."

This project contributed to the understanding of the mechanisms of the antifolate pyrimethamine-sulfadoxine resistance.

Carried out, organized and directed the following work:

-PCR analysis

-Sequencing

-Drug chemosensitivity assays

-Phenotype/genotype association.

*March1996 to September 1998*

**KEMRI Wellcome Trust Nairobi**

Post-doctoral fellow

-*In vitro* culture of malaria parasite,

-Analysis of drug sensitivity assays,

-PCR and Genotyping of plasmodium genes.

*January1996 to March1996*

**University of Washington, Seattle, USA**

Postdoctoral fellow

Post Doctoral Training on molecular biology of malaria: Genotyping of *Plasmodium falciparum*dihydrofolate reductase gene using PCR

*1995*

**University of Sciences and techniques Montpellier, France**

Ph.D. Parasitology

The thesis title:"Detection and Identification of African trypanosomes by molecular hybridizationand by polymerase chain reaction."

Carried out work on:

-PCR analysis

-Primers design

-Gel electrophoresis

-DNA purification and quantification

-Molecular hybridization

*1990*

**University of Sciences and technique Montpellier**

Degree of Advanced Studies Parasitology

Thesis on African Trypanosomiasis and Hormones disorders.

Carried out work on:

-*In vitro* culture of trypanosome

-*In vivo* culture of trypanosome in mice

-Quantification of hormone concentrations in mice

*1989*

**University of sciences and technique Montpellier**

Master of Sciences in Biochemistry and Molecular Biology

*1988*

**University of sciences and techniques Montpellier**

Bachelors of Sciences in Biochemistry

**TEACHING AND TRAINING AND CAPACITY BUILDING EXPERIENCE**

From 1999, have been training and supervising students at various level of education (with report writing)

* 10 undergraduate students in attachment for 3-6 months
* 5 Masters students
* 2 PhD students (one is completing the training after 5 years)
* 1 Post doctoral (for 3 years)

From 2006, running of courses on biochemistry and molecular biology of malaria to interns as part of internship programme in our Unit.

**AWARDED RESEARCH GRANTS**

Irish Health Research Board (HRB)[GHRA-06-03] of the Republic of Ireland. Project grant of 252,862 Euros from January 2007- December 2009, on “Investigation of mechanisms of resistance to the antimalarial drugs lumefantrine, piperaquine and amodiaquine in Africa”, co-investigator with Dr Agnus Bell of Trinity College, Dublin. Half of the funds (126,431 Euros are allocated to Alexis Nzila).

European Union grant of 124,920 Euros from March 2007 to March 2010 on the “Development of New Drugs for the Treatment of Malaria: The antimalarial potential of Methotrexate and aminopterin”

Pfizer award with the Royal Society (UK) of £60,000 from October 2006 to October 2008 on “the understanding of the mechanism of action of the antifolate anticancer methotrexate in Plasmodium falciparum and the exploration of the potential of methotrexate as antimalarial.”

International Atomic energy Agency (IAEA): Small Project grant, 21,000 US $ from 2005 to 2008. Impact of polymorphism on dihydrofolate reductase, dihydrofolate pteroate and host immunity markers on the efficacy of chlorproguanil dapsone.

European & Developing Countries Clinical Trials Partnership (EDCPT): Senior fellowship of 300,000 Euro from 2005-2008 on the Understanding the mechanisms of piperaquine resistance (PI).

Wellcome Trust: a grant of £150,296 for 3 years from 1999 to 2002 on The utility of combining oral artesunate with oral pyrimethamine/sulfadoxine (PSD) in delaying the emergence and spread of resistance PSD-resistant P. falciparum in Kenya (grant number 056686, with Dr Watkins and Pr Winstanley as PIs).

Wellcome Trust: A Research Fellowship Grant in Tropical Medicine of £368,000 (1999-2003) on Understanding of the mode of action of the combination of antifolate drugs and the mechanism of Fansidar® resistance in P. falciparum. (grant number 056769/Z/99/Z, PI)

National Institute of Health of USA (NIH/Fogarty International grant of 96,000$ for 3 years (2000-2003) on “ Selection of Fansidar Resistance in Malaria Parasites in Kenya” (co-PI with Pr Carol Sibley, of Washington University)

**AWARDS:**

1. Outstanding Senior African Scientist of year 2009 (European Union developing countries clinical trial partnership) [EDCTP] (20,000 Euros as research grant) [http://www.edctp.org/forumblog/2009/10/dr-alexis-nzila-and-dr-dominique-pepper-receive-edctp-award-for-outstanding-african-scientist/]
2. VIPUniversityofOxfordaward2007 (52,000 British Pound as salary support 2007-2008)
3. PfizerRoyalSociety(UK)award of the best African scientist in2006 (90,000 Euros as research grant)<http://royalsociety.org/page.asp?id=7243>

**DISTINCTION**

From December 2009: Member of African Academy of science ([www.aasc.org](http://www.aasc.org))

**PATENTS:**

1.Low and non toxic dose of methotrexate and its analogs for the treatment of malaria and for infections from other apicomplex aparasites such as toxoplasma, babesia and theilaria. Kenya Intellectual Property (KEPI),Nairobi.June2007.

2.Combination of folate with methotrexate or methotrexate analogs for the treatment of malaria, toxoplasma in human and for the infections of babesia and theileria in animal. Kenya Intellectual Property (KEPI),Nairobi.June2007.

3.Diaminopterin derivatives as antifolate agents against Plasmodium falciparum and all organisms that have a complete endogenous folate pathway.PatentP407594GB,May,2002.W.P.Thompson&Co.,Liverpool,UK.

4.Reversing antimalarial resistance and potentiation of antifolate activity by probenecid in Plasmodium falciparum. Patent P407595GB,May,2002.W.P.Thompson & Co.,Liverpool,UK.

5.Diaminopteridine derivatives as antibacterial compounds. Patent application. P408034 GBJuly, 2 002.W.P.Thompson&Co.,Liverpool,UK.

A

**JOURNAL EDITORIAL BOARD**

From 2010: Member of the editorial board of the Asian Pacific Journal of Tropical Medicine (APJTM)

**PUBLICATIONS:**

**1.Contributions to books**

John Okombo, Leah Mwai and **Alexis Nzila**. Tackling the problem of antimalarial resistance in Drug Discovery in Africa. Editor-in-Chief, Kelly Chibale, Co-Editors: Mike Davies-Coleman, Collen Masimirembwa. Publisher: Springer, <http://www.springer.com>. In press

**Alexis Nzila** and Kelly Chibale. Anticancer drug repositioning against tropical diseases: the example of methotrexate in the treatment of malaria in Drug Discovery in Africa. Editor-in-Chief, Kelly Chibale, Co-Editors: Mike Davies-Coleman, Collen Masimirembwa. Publisher: Springer, <http://www.springer.com>. In press.

**Nzila Alexis (2012)**. Antifolate drugs in the treatment Plasmodium falciparum infection In: Treatment and Prevention of Malaria. Edited by Henry M. Staines and Sanjeev Krishna. Series Milestones in Drug Therapy. Series Editors: M.J. Parnham and J. Bruivels.

**Nzila M.A..(2002)**.Chemistry and Biology of Pteridines and Folates. In:Antifolates: Molecular Mechanisms of Resistance to Antimalarial Antifolate Drug Pyrimethamine/sulfadoxine. Sheldon Milstein…(et al).(eds),.KluwerAcademic Publishers, Massachusetts,USA. (invitedcontribution).

**2. Journals**

**2.1. Submitted for publication**

**Alexis Nzila**1, John Okombo, Eric Ohuma and Assad Al-Thukair. Update on the in vivo tolerance and in vitro reduced susceptibility of the antimalarial lumefantrine. *Submitted for publication*

Nyaradzo T. L. Chigorimbo-Murefu, Stefan Louw1, Mathew Njoroge**, Alexis Nzila**, Collen Masimirembwa and Kelly Chibale. Biotransformation in the discovery of antimalarial agents. Submitted for publication.

Magnus Manske, Olivo Miotto, Susana Campino, Sarah Auburn1, Jacob Almagro‐Garcia, Gareth Maslen, Abdoulaye Djimde, Ogobara Doumbo, Issaka Zongo, Jean‐Bosco Ouedraogo, Pascal Michon, Ivo Mueller, Peter Siba, **Alexis Nzila**, Steffen Borrmann, Steven M. Kiara, Kevin Marsh, Hongying Jiang, Xin‐Zhuan Su, Chanaki Amaratunga, Rick Fairhurst, Duong Socheat , Francois Nosten, Mallika Imwong, Nicholas J. White, Mandy Sanders, Elisa Anastasi, Dan Alcock, Michael A. Quail, Dan Turner, Valentin Ruano Rubio , Dushyanth Jyothi, Lucas Amanga‐Etego, Jack O’Brien, Colin Sutherland, Cally Roper, Valentina Mangano, David Modiano, Alfred Amambua‐Ngwa, David J. Conway, Shannon Takala, Chris Plow, Kirk Rockett, Julian C. Rayner, Taane G. Clark, Chris I. Newbold, Matt Berriman 1, Bronwyn MacInnis, Dominic P. Kwiatkowski. Nextgeneration sequencing analysis of Plasmodium falciparum diversity within the host and across populations. *Submitted*

J. Enrique Salcedo-Sora , Edwin Ochong, **Alexis Nzila**, Giancarlo A. Biagini , Paul A. Stocks , David Johnson , Sanjeev Krishna, Paul M. O’Neill , Stephen A. Ward , Patrick G. Bray .The Molecular Basis of Folate Salvage in Plasmodium falciparum. *Submitted.*

**2.2.Published manuscripts or in Press**

Julie Gutman, S. Patrick Kachur, Laurence Slutsker, **Alexis Nzila**, Theonesta Muttabingwa Combination of Probenecid- Sulfadoxine Pyrimethamine for Intermittent Preventive Treatment in Pregnancy? In press: Malaria Journal.

John Okombo, Steven M. Kiara, Leah Mwai, Lewa Pole1, Eric Ohuma, Isabella Ochola, **Alexis Nzila**

The baseline in vitro activity of pyronaridine and methylene blue and in Kenyan Plasmodium falciparum isolates. *In press, Antimicrobial Agent Chemotherapy,*

Steffen Borrmann, Philip Sasi, Leah Mwai, Mahfudh Bashraheil, Ahmed Abdallah, Steven Muriithi, Henrike Frühauf, Barbara Schaub, Johannes Pfeil, Judy Peshu, Warunee Hanpithakpong, Anja Rippert, Elizabeth Juma, Benjamin Tsofa, Moses Mosobo , Brett Lowe, Greg Fegan, Niklas Lindegård, **Alexis Nzila** , Norbert Peshu , Kevin Marsh. Declining responsiveness of Plasmodium falciparum infections to artemisinin-based combination therapies on the Kenyan coast. *Plos ONE 2011;6(11):e26005*

**Alexis Nzila**, Zhenkun Ma, and Kelly Chibale. Drug repositioning in the treatment of malaria and tuberculosis. *Future Medicinal Chemistry 3(11):1413-26*

Campino S, Auburn S, Kivinen K, Zongo I, Ouedraogo JB, Mangano V, Djimde A, Doumbo OK, Kiara SM, **Nzila A**, Borrmann S, Marsh K, Michon P, Mueller I, Siba P, Jiang H, Su XZ, Amaratunga C, Socheat D, Fairhurst RM, Imwong M, Anderson T, Nosten F, White NJ, Gwilliam R, Deloukas P, Macinnis B, Newbold CI, Rockett K, Clark TG, Kwiatkowski DP.Population Genetic Analysis of Plasmodium falciparum Parasites Using a Customized Illumina GoldenGate Genotyping Assay. PLoS One 2011

Roma Chilengi, Rashid Juma, Ahmed M Abdallah, Mahfudh Bashraheil, Hudson Lodenyo, Priscilla Nyakundi, Evelyn Anabwani, Amina Salim, Gabriel Mwambingu, Ednah Wenua, Julie Jemutai, Chemtai Kipkeu, G O Oyoo, Simon N. Muchohi, Gilbert Kokwaro, Tim Niehues, Trudie Lang and **Alexis Nzila**. A Phase I trial to evaluate the safety and pharmacokinetics of low-dose methotrexate as an anti-malarial drug in Kenyan Adult Healthy volunteers. *Malaria Journal10(1):63.*

John Okombo, Eric Ohumaa, Stephane Picotb, **Alexis Nzila**. Update on the mechanism ofgenetic markers of quinine resistance in Plasmodium falciparum. *Molecular Biochemical Parasitology2011 Jun;177(2):77-82.*

Mallika Imwong, Bruce Russell, Rossarin Suwanarusk, **Alex Nzila**, Mara L. Leimanis, Kanlaya Sriprawat, Supaporn Kaewpongsri, Aung Pyae Phyo, Georges Snounou, Francois Nosten, Laurent Renia. Methotrexate is highly Potent Against Pyrimethamine Resistant Plasmodium vivax.2011Journal of Infectious Diseases.:203: 207-210.

John Okombo, Steven Kiara, Josea Rono1, Leah Mwai, Lewa Pole, Eric Ohuma, Steffen Borrmann, Lynette Isabella Ochola and **Alexis Nzila**. In vitro activity of quinine and other antimalarials and pfnhe polymorphisms in Kenyan Plasmodium isolates. *2010 Antimicrobila Agent Chemotherapy54(8):3302-7*

Ping Wang, Qi Wang, Yonghong Yang, James K. Coward, **Alexis Nzila**, Paul F. G. Sims and John E. Hyde. Characterisation of the bifunctional dihydrofolate synthase-folylpolyglutamate synthase from Plasmodium falciparum; a potential novel target for antimalarial antifolate inhibition.*Molecular Biochemical Parasitology172(1):41-51*

**Alexis Nzila** & Roma Chilengi. Modulators of drug efficacy and toxicity in malaria treatment.2010 *Trends in Pharmaceutical sciences.31(6):277-83*

**Alexis Nzila,** Matthias Rottmann, Penchit Chitnumsub, Stevens M. Kiara, Sumalee Kamchonwongpaisan, Cherdsak Maneeruttanarungroj, Supannee Taweechai, Bryan K.S. Yeung, Anne Goh, Suresh B. Lakshminarayana, Bin Zou, Josephine Wong, Ngai Ling Ma, Thomas H. Keller, Veronique Dartois, Sergio Wittlin, Reto Brun, Yongyuth Yuthavong and Thierry T. Diagana. Preclinical evaluation of antifolate QN254 (5-chloro-N\*6\*-(2,5-dimethoxy-benzyl)-quinazoline-2,4,6-triamine) as antimalarial drug candidate.*2010, Antimicrobila Agent Chemotherapy54(6):2603-10*

**Alexis Nzila** and LeahMwai. In-vitroselectionofPlasmodiumfalciparumdrug-resistantparasitelines. 2010 *Journal of Antimicrobial Chemotherapy 65(3): 390-398*

**Alexis Nzila,** John Okombo,Becker Perez Ruy,Roma Chilengi,Trudie Langand Tim

Niehues. Anticancer agents against malaria:time to revisit?. 2010. *Trends in Parasitology 26(3): 125-129*

Leah Mwai, Steven M. Kiara, Abdi Abdirahman, Lewa Pole, Anja Rippert, Abdi Diriye Pete Bull, Kevin Marsh, Steffen Borrmann, **Alexis Nzila.** In vitro activity of piperaquine, lumefantrine and dihydroartemisinin in Kenyan Plasmodium falciparum isolates and polymorphisms in Pfcrt and Pfmdr1. *2009 Antimicrobial Agent Chem.53(12):5069-73.*

Steven M Kiara, John Okombo, Victor Masseno, Leah Mwai, Isabella Ochola, Steffen Borrmann and **Alexis Nzila**. In vitro activity of antifolate and polymorphism in dihydrofolate reductase of Plasmodium falciparum isolates from Kenyan coast: Emergence of parasites with Ile-164-Leumutation.*2009 Antimicrobial Agent Chem. 53(9):3793-8.*

Beatrice Irungu, Daniel Kiboi, Bernard Langat, Geoffrey Rukunga, Sergio Wittlin and **Alexis**

**Nzila**. Methotrexate and aminopterin lack in vivo antimalarial activity against murine malaria species,*2009 Experimental Parasitology 123(2):118-21*

Leah Mwai, Edwin Ochong, Abdulrahman Abdi, Stevens Murithi, Steve Ward, Kevin Marsh,

Gilbert Kokwaro, Phillip Sassy, Steffen Borrmann and **AlexisNzila**. Decrease of chloroquine resistance in Kilifi district ,Kenya. *Mal J. 2009 8:106.*

Victor Masseno, Steven Muriithi and **Alexis Nzila**.In-vitro chemosensitization of Plasmodim

Falciparum to antimalarials by verapamil and probenecid. Antimicrobiol Agents Chemother,

2009 53(7):3131-3132.

Kiboi D.M., B.N.Irungu, B.Langat, S.Wittlin, R.Brun, J. Chollet, O. Abiodun, J.K.Nganga,

V.C.S.Nyambati, G.M.Rukunga, A.Bell and **A.Nzila.** Plasmodium berghei ANKA: Selection of resistance to piperaquine and lumefantrine in a mouse model. *Experimental Parasitology 2009 22(3):196-202.*

Philip Sasi, Abdi Abdulrahaman, Leah Mwai, Judith Straimer, Elise Schieck, Anja Rippert, Mahfudh Bashraheil, Amina Salim, Judith Peshu, Ken Awuondo, Brett Lowe, Munir Pirmohamed, Peter Winstanley, Steve Ward, **Alexis Nzila,** Steffen Borrmann. In vivo and invitro efficacy of amodiaquine against Plasmodium falciparum in an area of continued use of 4-aminoquinolines in EastAfrica. *2009 J Infect Dis .2009 199:1575-1582*

Laura K Certain, Marnie R Briceño,B.A.;Steven M Kiara, **Alexis M Nzila**, William M Watkins, Carol H Sibley.Limited genetic diversity in pyrimethamine resistant strains of Plasmodium falciparum from Kenya. *2008 J Infect Dis.197(12):1743-51*

Eunice Nduati, Abdi Diriye, Ommeth Sheila, Leah Mwai,Steven Kiara, Victor Masseno, Gilbert Kokwaro and **Alexis Nzila.**Effect of folate derivatives on the activity of antifolate drugs used against malaria and cancer.*Parasitology Research2008,102(6):1227*-1234.

Gilbert Kokwaro, LeahMwai and **Alexis Nzila**. Current status of artemether-lumefantrine in the treatment of uncomplicated falciparum malaria. *Expert Opin Pharmacother.2007 Jan;8(1):75-94.*

**Nzila Alexis.** Inhibitors of de novo folate enzymes in Plasmodium falciparum. *Drug discovery today,2006Oct;11(19-20):939-44..*

**Nzila A.**The past,the present and the future of antifolate in the treatment of Plasmodium Falciparum infection. *Journal of Antimicrobial and Chemotherapy, 2006 57(6):1043-54.*

Nduati E, Mberu KE, S Hunt, **Nzila M A.**2,4-dimanopteridin based compounds as potent

Inhibitors of folate pathways:new class of antifolate drugs falciparum*.Antimicrobial Agent*

*Chemoth.200549(9):3652-3657.*

B.R. Ogutu, **A.M. Nzila,** E.Ochong, S. Mithwani, B.Wamola, C.H.O.Olola, B.Lowe,G.O.Kokwaro, K. Marsh and C.R.J.C.Newton.The use of sulfadoxine/pyrimethamine in shortening the duration of the quinine treatment of childhood severe falciparum malaria.Tropical

*Tropical Med.Inter.Health,2005,5,484-488.*

**Nzila Alexis,** Steve Ward, Kevin Marsh, Paul Sim,John Hyde. *Comparative folate Metabolism in humans and malaria parasites (PartI): pointers for malaria treatment from cancer chemotherapy.Trends in Parasitology,2005,21(6),292-297*

**Nzila Alexis,** Steve Ward, Kevin Marsh, Paul Sim, John Hyde. Comparative folate metabolism in humans and malaria parasites (PartII): activities as yet untargeted or specific To Plasmodium.*Trends in Parasitology,2005,21(7),334-339.*

**Alexis Nzila**, Edwin Ochonga, Eunice Nduati, Kokwaro Gilbert, Peter Winstanley, Steve Ward and Kevin Marsh. Why has the dihydrofolate reductase 164 mutation not consistently been found in Africayet?*Trans.Soc.Trop.Med.Hyg2005,99(5):341-346.*

Sheila Ommeh, Eunice Nduati, Eddy Mberu, Gilbert Kokwaro, Kevin Marsh, Andre Rosowsky and **Alexis Nzila.**Invitro activity of 2,4-diaminoquinazoline and 2,4-diaminopteridine derivatives against Plasmodium falciparum. *Antimicrobiol. Agent* *Chemoth 2004, 48(10)3711-3714.*

**Nzila Alexis,** Gilbert Kokwaro, Peter Winstanley, Kevin Marsh and Steve Ward. Therapeutic Potential of folate uptake inhibition in Plasmodium falciparum.Trends in Parasitology2004, 20(3):109-112.

Giancarlo A. Biagini , PaulM. O’Neill, **Alexis Nzila,** Stephen A. Ward and Patrick G.Bray. Antimalarial Chemotherapy: Young Guns or Back to the Future?*Trends in Parasitology 2003,19:479-487.*

Edwin Ochong’, **Alexis Nzila,** Serah Kimani, Gilbert Kokwaro, Theonest Mutabingwa, Bill

Watkins and Kevin Marsh Molecular monitoring of the Leu-164 mutation of dihydrofolate reductase in a highly pyrimethamine/sulfadoxine-resistant area in Africa.*MalariaJournal2003,2:46*

Ingrid VF vanden Broek, Gatko T, Lowoko B, **Nzila A**, Ochong’E and K. Keus. Comparison Chloroquine, Sulfadoxine/Pyrimethamine and Amodiaquine efficacy to treat uncomplicated falciparum malaria in Upper Nile, South Sudan.*Trans.Soc.Trop.Med.Hyg200397;229-235.*

Ochong’ EdwinO., Ingrid.v.f. Van Den Broek, Kees Keus, and **Nzila A.** Association between chloroquine and amodiaquine resistance and allelic variation in the Plasmodium falciparum multipledrug resistance 1 gene and the choloroquine resistance transporter gene in isolates from the Upper Nile in Southern Sudan.*Am.J.Trop.MedHyg,200369(2):184-187*

**Nzila MA,** Mberu KE , Bray P., Kokwaro G., Winstanley P, Marsh K and Ward S. Chemosensitization of Plasmodium falciparum by Probenecid in vitro. *Antimicrobiol.Agent Chemoth200347(4):2108-2112.*

**Nzila MA,** Mberu EK, Nduati E, Ross A, Watkins W.M and C.H. Sibley. Genetic diversity of

Plasmodium falciparum parasites from Kenya is not affected by antifolate drug selection.*Int.*

*J.Parasitol.200232(12):1469-1476.*

Mberu EK, **Nzila AM**, Nduati E, Ross A, Monks SM, Kokwaro GO, Watkins WM, Hopkins SibleyC. Plasmodium falciparum: invitro activity of sulfadoxine and dapsone in field isolates from Kenya: point mutations in dihydropteroate synthase may not be the only determinants In sulfa resistance.*Exp Parasitol.2002.101(2-3):90-96.*

SibleyCH, Hyde JE, Sims PFG, Plowe CV, Kublin J,Mberu EK, Cowman AF,Winstanley, PA, Watkins WM, **Nzila AM** .Pyrimethamine-sulfadoxine resistance in Plasmodium falciparum: What next?*Trends in Parasitology2001,17:582-588.*

MutabingwaT.,**Nzila A**, Mberu E, Nduati E, Winstanley P, Watkins W and Hills E. Drug Resistant falciparum malariain Tanzania: chlorproguanil-dapsone is effective treatment for infections resistant to pyrimethamine-sulfadoxine. *Lancet2001358(9289):1218-23.*

**Nzila MA,** Mberu EK,Sulo J, Dayo H, Winstanley PA, Sibley CH and Watkins WM. Towards an understanding of the mechanism of pyrimethamine/sulfadoxine resistance in Plasmodium falciparum:the genotyping of dihydrofolate reductase and dihydropteroate synthase of Kenyan parasites. *Antimicrobiol. Agent Chemoth 2000 44(4):991-996.*

Mberu EK, Mosobo M,**Nzila MA**, Kokwaro GO,Sibley C & Watkins WM.The changing pattern of invitro response to pyrimethamine-sulfadoxine in Plasmodium falciparum field isolates from Kilifi, Kenya.*Am.J.Trop.Med Hyg.2000 62(3),396-401..*

**Nzila MA**,Nduati E, Mberu EK,Sibley CH, Monks S, Winstanley PA and Watkins WM. Molecular evidence of selective pressure for drug resistance exerted by the long acting antifolate drug pyrimethamine/sulfadoxine compared with the shorter acting chlorproguanil/dapsone on Kenyan isolates of P.falciparum.*J.Infect.Dis.2000181(6):2023-2028.*

Mookherjee S, HowardV, **Nzila-Mouanda A.**,Watkins W & Sibley CH.Analysis in yeast of Plasmodium falciparum low frequency dihydrofolate reductase alleles isolated from polyclonal patient samples.*Am.J.Trop.Med.Hyg.1999,61:131-140.*

**Nzila-Mounda,** A., Mberu EK, Sibley CH, Plowe CV, Winstanley PA and Watkins WM. (1998). Kenyan Plasmodium falciparum field isolates: correlation between pyrimethamine and chlorcycloguanil activity in vitro and point mutations in dihydrofolate reductase.*Antimicrobial. Agents Chemotherapy,1998,42(1):164-169.*

Okomo-Assoumou, M.C. Daulouede, S.,Lemesre,J.L.,**N'zila-Mouanda,** A. & Vincendeau, P.. Correlation of high serum levels of tumor necrosis factor-with disease severity in human African trypanosomiasis. *Am.J.Trop.Med.Hyg.1995,53(5),539-543.*

**Nzila-Mouanda A,** Oury B, Fournet F, Cadoux C, Grébaut P, Dia M, Lemesre JL. Détection et identification des trypanosomes africains par PCR. *Vet.Res.1994,25,605-606.*

Stevens JR., Mathieu-Daudet F, McNamara JJ, MizenVH & **Nzila-Mouanda A.**.Mixed population in Trypanosoma brucei in wild Glossina palpalis palpalis. *Trop.Med.Parasitol. 1994.45,313-318.*