

Dufton M. Mwaengo, PhD

Department of Medical Microbiology

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Education

- Ph.D., (Molecular Virology), 1996
Dept of Pathology (College of Veterinary Medicine & Biomedical Sciences)
Colorado State University, Fort Collins, CO, 80523 (USA)
Thesis Title: Molecular and Immunological Analysis of Ovine Lentivirus Genes and Gene-products.
Advisor: Professor James C. DeMartini
- B.Sc. Biochemistry/Chemistry Major (*upper 2nd class honors*), 1985
Faculty of Science, University of Nairobi
Nairobi, Kenya

Postdoctoral Training

- OaK Ridge Institute of Science & Education (ORISE) Fellowship, 2003-2004
US Centers for Disease Control & Prevention (CDC)
Kisumu field station, Kisumu, Kenya
- Senior Fellow, University of Washington (Dept Laboratory Medicine) 2002-2003
Seattle, WA (USA)
- Postdoctoral Fellow (University of Toronto)/Project Scientist (University of Nairobi), 1999-2001
Kenya AIDS Control Project, Nairobi, Kenya
- Postdoctoral Fellow (Yerkes Regional Primate Research Center) 1996-1998
Emory University
Atlanta, GA (USA)

Academic Appointments

- Senior Lecturer (Dept Medical Microbiology) 2014-Present
University of Nairobi, Nairobi, Kenya
- Senior Lecturer (Dept of Biomedical Laboratory Sciences) 2011-2013
Kigali Health Institute (KHI), Kigali, Rwanda
- Lecturer (Depart of Medical Microbiology), 2005-2010
University of Nairobi, Nairobi, Kenya

Leadership Positions

Laboratory Director (HIV-1 Research Laboratory) 2003-2004
 CDC Field Station, Kisumu, Kenya

Other Positions and Employment

Head of Department 2012-2013
 Kigali Health Institute (KHI)
 Kigali, Rwanda

Educational Administration and Leadership

Member, Dean's Curriculum Review Committee 2015-Present
 School of Medicine, College of Health Sciences,
 University of Nairobi, Nairobi, Kenya

Teaching Activities

Virology – Undergraduate students (MBChB/BDS-BPHARM/BSc Nursing students) >10 yrs
 Virology – Teaching postgraduate students (MSc/MMed students)

Advising and Mentoring**Undergraduate students**

All programs serviced by Dept of Medical Microbiology (MBChB/BDS-BPHARM/BSc Nursing) >8 yrs
 Postgraduate students
 MSc, MMed (Pathology & Surgery), PhD students

Grants

Consortium for National Health Research (CNHR) grant 2009-2014
 Title: Impairment of vaccine induced protective responses during infection with helminth worms
 PI: Dr Thomas Kariuki, Director – Institute of Primate Research (IPR), Karen, Nairobi
 Description – To support one PhD student training and one Postdoctoral fellow
 Role – Co-PI

College Research Council (CRC) grant (Intracollege Research Proposal) 1995-1996
 Title: Analysis of North American Ovine Lentivirus Genes”
 PI: Dufton Mwaengo
 Description – Intracollege Research Grant (CSU) to support PhD training

Publications

Peer-reviewed publications

1. Mwala DM, **Mwaengo DM**, & Mburu DN. (2014). Molecular Detection and Phylogenetic Analysis of Kenyan Human Bocavirus Isolates. *J INFECT DEV CTRIES* 8(2): Page 221-227
2. Edouard Ntagwabira, **Dufton Mwaengo**, Jean-Frederic Flandin, Charles Muhizi, Omu Anzala, and Odette Mukabayire. (2013). Determination of human herpes simplex virus in clear cerebrospinal fluids by multiplex PCR in Rwanda. *AFR J. BIOTECH* 12(19): Page 2553-2557
3. **D. Mwaengo**, G. Lorenzo, J. Iglesias, M. Warigia, R. Sang, R. Bishop, and A. Brun. (2012). Detection and Identification of Rift Valley fever virus in mosquito vectors by quantitative real time PCR. *VIRUS RES* 169(1): Page137-143
4. Zeh C, Amornkul P, Inzaule S, Ondoa P, Oyaro B, **Mwaengo DM**, Vandenhoudt H, Gichangi A, Williamson J, Thomas T, De Cock KM, Hart C, Nkengasong J, Laserson K. (2011). Population-Based Biochemistry, Immunologic and Hematological Reference Values for Adolescents and Young Adults in a Rural Population in Western Kenya. *PLoS ONE* 6(6) e21040
5. Zeh C, Oyaro B, Vandenhoudt H, Amornkul P, Kasembeli A, Bondo P, **Mwaengo D**, Thomas TK, Hart C, Laserson KF, Ondoa P, Nkengasong JN. (2011). Performance of six commercial enzyme immunoassays and two alternative HIV-testing algorithms for the diagnosis of HIV-1 infection in Kisumu, Western Kenya. *J VIROL METHODS* 176(1-2): Page 24-31
6. Thomas TK, Masaba R, Borkowf CB, Ndivo R, Zeh C, Misore A, Otieno J, Jamieson D, Thigpen MC, Bulterys M, Slutsker L, De Cock KM, Amornkul PN, Greenberg AE, Fowler MG; KiBS Study Team. (2011). Triple-antiretroviral prophylaxis to prevent mother-to-child HIV transmission through breastfeeding--the Kisumu Breastfeeding Study, Kenya: a clinical trial. *PLoS Med.* 2011 Mar; 8(3):e1001015. Epub 2011 Mar 29.
7. Amornkul PN, Vandenhoudt H, Odhiambo F, **Mwaengo D**, Juma B, Ouma J, Nasokho P, Rosen D, Vulule J, Vitek C, Misore A, Greenberg A, Slutsker L, De Cock KM. (2009). HIV prevalence and associated risk factors among individuals aged 13-34 years in rural western Kenya. *PLoS ONE* 4(7):e6470
8. Gallardo C, **Mwaengo DM**, Macharia JM, Arias M, Taracha EA, Soler A, Okoth E, Martín E, Kasiti J, Bishop RP. (2009). Enhanced discrimination of African swine fever virus isolates through nucleotide sequencing of p54, p72, and pB602L (CVR) genes. *VIRUS GENES* 38(1): Page 85-95
9. **Dufton Mwaengo** and Pauline O. Lawrence. (2003). A putative DNA helicase and novel oligoribonuclease in *Diachasmimorpha longicaudata* entomopoxvirus (DIEPV). *ARCH VIROL.* 148(7): Page 1431-44
10. **Dufton M. Mwaengo** and Francis J. Novembre. (1998). Molecular Cloning and Characterization of Viruses Isolated from Chimpanzees with Pathogenic HIV-1 Infections. *J. VIROL.* 72(11): Page 8976-8987
11. **Dufton M. Mwaengo**, JO Carlson, & JC DeMartini. (1997). Envelope Glycoprotein Nucleotide Sequence and Genetic Characterization of North American Ovine Lentiviruses. *VIROLOGY* 238(1): Page 135-144
12. **Dufton M. Mwaengo**. (1996). Molecular and Immunological Analysis of Ovine Lentivirus Genes and Gene-products. Colorado State University Library (PhD thesis)

Books & Chapters

Scott Brodie, **D. Mwaengo**, L.D. Pearson and J.C. DeMartini. (1995). Molecular approaches to diagnosis of ovine lentivirus infection. In: Y. Becker and G. Darai, eds. *PCR: Protocols for diagnosis of human and animal virus diseases*. *Frontiers of Virology, Vol II: 509-516*. New York: Springer-Verlag

Abstracts

1. E. Mpabuka, **D. Mwaengo**, JC Uwimbabazi, RM Habimana, JP Musabyimana, E Mukantwali, F. Musonera, & O. Mukabayire. Genetic Analysis of HIV-1 subtypes in Rwanda. The South African Society of Biochemistry and Molecular Biology. 29th January – 01st February 2012, Drakensberg, KwaZulu-Natal, South Africa.
2. Edouard Ntagwabira, **Dufton Mwaengo**, Omu Anzala, and Odette Mukabayire. Multiplex PCR detection of herpes simplex virus (HSV) in cerebrospinal fluid from patients with clinical suspicion of meningitis and encephalitis. The South African Society of Biochemistry and Molecular Biology. 29th January – 01st February 2012, Drakensberg, KwaZulu-Natal, South Africa.

3. M. Mwamburi, **D. Mwaengo**, J.M. M'Imunya, A.O. Anzala, B. Estambale, C.A. Wanke (2011). Success and challenges of anti-retroviral treatment expansion program in urban setting: Characterizing treatment refusal. 6th International AIDS Society (IAS) Conference, July 17-20, 2011, Rome, Italy
4. D.M. Mwala, **Mwaengo D.M** and Mburu D.N (2011). A new parvoviridae family virus associated with respiratory infections. 1st International Scientific Conference, College of Health Sciences, University of Nairobi. June 15-17, Nairobi, Kenya.
5. Gallardo C., **Mwaengo D. M.**, Pelayo V., Okoth E., Macharia J. M. and Bishop R. (2007) Molecular epidemiology of ASFV isolates recovered from samples collected in Kenya during 2006-2007 suspected outbreaks pp 59-60. In "EPIZONE INSIDE OUT" proceedings of First annual meeting network of excellence for epizootic disease diagnosis and control. May 30th-June 1st 2007, Lublin/Pulawy, Poland
6. Carmina Gallardo, Richard Bishop, **Dufton M. Mwaengo**, Elena Martín, Joseph M. Macharia and Marisa Arias. "New approaches in molecular and serological diagnosis of African swine fever (ASF) on new emerging variants". 13th International Symposium for the World Association of Veterinary Laboratory Diagnosticians. Melbourne, Australia, November 11th-14th, 2007.
7. Carmina Gallardo, **Dufton M. Mwaengo**, Virginia Pelayo, Edward Okoth, Joseph M. Macharia and Richard Bishop. "Molecular Epidemiology of ASFV isolates recovered from samples collected in Kenya during 2006-2007 suspected outbreaks". Annual Meeting of National African Swine fever Laboratories. Hannover (Germany) 6th June 2007.
8. **Dufton Mwaengo**, Gema Lorenzo, Raquel Martín Folgar, Richard L. Bishop, Alejandro Brun (2007). Puesta a punto de un ensayo de detección del virus de la fiebre del valle del Rift mediante PCR en tiempo real (Spanish). Centro de Investigación en Sanidad Animal (CISA-INIA) Valdeomos, Madrid, (Spain)
9. Timothy Thomas, P Amornkul, J Mwidau, R Masaba, L Slutsker, **D Mwaengo**, J Vulule, K DeCock, and M Fowler. (2005). Preliminary Findings: Incidence of Serious Adverse Events Attributed to Nevirapine among Women Enrolled in an Ongoing Trial Using HAART to Prevent Mother-to-Child HIV Transmission, 12th Conference on Retroviruses and Opportunistic Infections, Boston, MA, USA, Feb 22-25, 2005
10. Vandenhoudt H, Amornkul PN, Odhiambo F, Nasokho P, Otwoma N, **Mwaengo D**, Vulule J, Misore A, Buve A, Vitek C, Greenberg A, Slutsker L, Marum E, De Cock KM. First sexual intercourse and exposure to HIV infection among women in a high HIV prevalence area in Western Kenya. International AIDS Conference, July 2004, Bangkok, Thailand
11. **Dufton Mwaengo** and Pauline O. Lawrence. Sequence analysis of a putative DNA helicase and four peptides encoded by ORFs of DIEPV. (2001). Entomological Society of America (ESA) annual meeting, San Diego, California, USA, Dec 9-12, 2001
12. **Mwaengo D**, Luscher MA, Bwayo JJ, Plummer FA, MacDonald (2000). Identification of HLA class II epitopes of HIV-1 Gag (A Clade) restricted by resistance-associated HLA. Intl AIDS Conference, July 2000, Durban, South Africa.
13. **Dufton Mwaengo**, Mark Luscher et al. (2000). Use of competitive peptide binding assay for identification of HLA class II epitopes of HIV-1 (A clade), Canadian AIDS Health Researchers (CAHR) conference, Montreal, Quebec, Canada (April 2-5, 2000)
14. **Dufton Mwaengo** et al. (1998). Pathogenic HIV-1 Infection in Chimpanzees: Biological, Molecular and in vivo characterization of virus. Non-Human Primate Conference, Seattle, WA
15. Shawn O'neil, F.J. Novembre, J. DeRosayro, C. Suwyn, **D. Mwaengo** et al. (1998). Mucosal barriers to oral and vaginal infection with SIV. Early events following SIV/SHIV exposure, Hyatt Dulles Hotel, Herndon, Virginia December 2-3, 1998
16. Brodie SJ, **Mwaengo D**, Pearson LD. (1994). Molecular approaches to diagnosis of ovine lentivirus infection. 75th conference of research workers in animal diseases, Chicago, IL