The Institute of Endemic Diseases
University of Khartoum, Sudan
For a better Community Services 2009-2010
**Institute Address:**
Institute of Endemic Diseases, University of Khartoum.
Medical Sciences Campus
Qasser Street, P.O. Box 102
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Tel. +249 83 (793262) (793265) (793267) Fax +249 83 (779712)

Web site:  [www.iend.org](http://www.iend.org)

**Vision:**
The Institute of Endemic Diseases endeavors to be one of the leading research and training institutes on endemic diseases worldwide.

**Mission:**
The Institute of Endemic Diseases was established in 1993 as a research and training center for endemic diseases. It acts as a platform for biomedical and clinical research in the University of Khartoum. Community service is an ever growing objective, especially for impoverished and remote communities.

**Objectives:**

- Undertakes research on endemic diseases in the Sudan.
- Trains physicians, scientists and health workers in the Field of endemic diseases.
- Renders medical and health services to the community.
- Offers post graduate degrees in immunology, molecular biology, molecular medicine and Human nutrition.

**Staff:**

**I: Academic Staff**

**Professor A. M. Elhassan**
Emeritus Professor of Pathology
E.mail. ahmedelhassan85@gmail.com
Professor Eltahir Awad Gasim Khalil  
Professor of Pathology  
E.mail.  eltahirk@iend.org,  eltahirgasim@yahoo.ca

Professor Moawia Mohamed Mukhtar  
Professor of infectious diseases  
E.mail.  mmukhtar@iend.org

Professor. Muntaser Elyeb Ibrahim  
Professor of Genetics  
E.mail.  mibrahim@iend.org

Dr. Ibrahim Mohmaed Elhassan  
Associate professor of Parasitology  
E.mail.  Ibrahimelhassan@iend.org

Dr. Hiba Salah-Eldin Mohamed  
Associate Professor of Molecular Biology  
E.mail.  hibasalah@iend.org

Dr. Faiza Mohamed .Osman.  
Assistant Professor of Nutrition.  
E.mail.  faizaosman@iend.org

Dr. Ahmed Mudawi Musa.  
Assistant Professor of Immunology  
E.mail.  amusa@iend.org; Musaam2003@yahoo.co.uk

Dr. Sahar Mubarak Bakheit.  
Assistant professor of Molecular Biology  
E.mail.  saharbakheit@iend.org
Dr Muzamil Mahdi Abdelhameed
Assistant Professor of Molecular Parasitology
E.mail. Mahdi@iend.org

Dr. Abd Alla Sayed Mohamed
Teaching Assistant. Department of Parasitology

II. Technical Staff (Khartoum):

Ms Nahid Eid
Ms Badria Mohamed Said
Ms Abdah ElFatih ElEmam
Mr Ahmed Fath Elrahman Idris
Mr Mohamed A/Rahim Sayed
Ms Shereen Ahmed

III. Field Stations Staff:

Mr Mohame Abd Elrahman Sha’a Eldin (Kassab Centre, Gedarif State)
Mr Khalifa Mohamed Guma’a (Kassab Centre, Gedarif State)
Mr Tahir Fadul (Kassab Centre, Gedarif State)
Mr Mohamed Elamin (Kassab Centre, Gedarif State)
Mr Ata Abd Alla Eltahir (Professor Elhassan Centre, Dooka, Gedarif State)

Administration:

Director:
Professor Eltahir Awad Gasim Khalil; MBBS; LRCP; MRCS; FRCPath Feb 2006-to date.

Previous Directors:
Professor Ahmed Mohamed Elhassan; DKSM, PhD, FRCP, RCPath (1993-2002).
Professor Moawia Mohamed Mukhtar; BVS; PhD. (2002-2005).
Registrar:
Dr. Asadig Nasser Asadig omer

Secretaries:
Ms. Gadha Ahmed Elhaj
Maha MA Khalifa
Rania Elsir Khalil

Administrative Officer:
Nancy Abd Elrahman

Departments:

Department of Immunology and Clinical Pathology:

Head of the Department
Dr. Ahmed Mudawi Musa

Members
Professor A. M. El Hassan
Professor El Tahir Awad Gasim Khalil
Mr Mohamed A/Rahim Sayed
Professor EE Zijlstra (Visiting Professor)
Professor Farouk Modabber (Visiting Professor)

Department of Molecular Biology:

Head of the Department
Dr. Hiba Salah Eldin Mohamed
Members
Professor Muntaser Eltyeb Ibrahim
Professor Moawia M. Mukhtar
Dr. Muzamil M. Abdel hamid
Dr. Sahar Mubarak Bakhite
Ms Nahid Eid
Ms Abdah Elfatih El Emam
Ms Shereen Ahmed

Department of Parasitology and Medical Entomology:

Head of the Department
Dr. Ibrahim Elhassan (On sabatical leave, Saudi Arabia)

Members
Dr. Abd Alla Sayed Mohamed.
Ms Badria Mohamed Said

Department of Epidemiology and Nutrition

Head of the Department
Dr Faiza M. Osman

Members
Prof. Ahmed M. El Hassan
Mr. Ahmed Fath Elrahman Idris

Collaborating Staff:

Dr. Mona Elfaki Eltahir Efaki
Dr. Abu Zaid Abd Alla Abu Zaid
Dr. Brima Mousa
Dr. Ayman Hussein
Dr. Waleed Elamin
Mr Eltahir Fadul Khameese
Ms. Fadwa Mirgani Ali
Ms. Hadia AbdelMgeed

**Research Groups:**

1. **The Leishmaniasis Research Group/Sudan (LRG/Sudan)**
   Chairperson: Professor Ahmed Mohamed El Hassan.

2. **Malaria Research Group**
   Chairperson: Dr. Ibrahim Mohamed El Hassan.

3. **Measles Research Group**
   Chairperson: Dr. Salah Ahmed Ibrahim.

4. **Mycetoma Research Group**
   Chairperson: Professor Ahmed H. Fahal.

5. **Nutrition & Infection Research Group**
   Chairperson: Dr. Faiza M. Osman.

6. **Schistosomosis Research Group**
   Chairperson: Professor Moawia M. Mukhtar.

7. **Population Genetics Research Group**
   Chairperson: Professor MuntaserMuntaser E. Ibrahim.

8. **Tuberculosis Research Group**
   Chairperson: Professor Eltahir Awad Gasim Khalil.
**Post-Graduate Degrees**

**MSc. Qualifying courses** in Clinical pathology, Immunology, molecular biology, epidemiology and Parasitology

**Master Degrees (By Research)**
Immunology
Molecular Biology

**PhD. Degrees (By research)**
Immunology
Molecular Biology

**MD degrees:**
Immunology
Molecular Biology

**Degrees by Courses:**

*Diploma/Master Degree in Molecular Medicine*

**Aim:**

This degree in Molecular Medicine sets out to provide applicants with a thorough understanding of:

- The human genome at a molecular level.
- The molecular basis of human genetic disease.
- The molecular interactions between microbiological pathogens and the human host.
- The technology currently employed in molecular genetics and cell biology.
- The interaction between such technology and current clinical practice.
- The molecular basis of common human malignancies.
• The utilisation of knowledge on the molecular basis of human disease in planning and design of novel therapies, using pharmacological agents or gene therapy.
• The ethical and legal aspects of molecular medicine as it impinge on clinical practice.
• A working appreciation of molecular and cellular biology at the practical level and development of the ability to perform independent research.
• The ability to apply bioinformatic and computational techniques in medical and biological research, and information retrieval

**Sponsors (past and current):**

**Local Sponsors**

• University of Khartoum.
• Ministry of Higher Education and Scientific Research, Sudan.
• Sudan Medical Specialization Board, Khartoum.
• Kenana Sugar Company, Sudan.
• Hajjar Trust, Khartoum, Sudan.

**International Sponsors**

• DNDi/Geneva, Switzerland.
• European Community.
• The Wellcome Trust
• World Health Organization/ TDR
• EDCTP.
• DANIDA.
• ICGEB.
• International Voluntary Women Group, Sudan.
• International Atomic Energy.
• TWAS
• Gates Foundation
Collaborations:

Local Collaborating Centres

- Tropical Diseases Hospital, Omdurman, Federal Ministry of Health, Sudan.
- Faculty of Medicine, University of Khartoum
- Faculty of Mathematical sciences, University of Khartoum
- Tropical Medicine Research Institute, National Center For Research, Khartoum, Sudan.
- Department of Genetics and Molecular Parasitology, National Health Laboratory, Sudan.
- Soba University Hospital, Khartoum, Sudan.
- Central laboratory, Ministry of Science and Technology
- The Electron Microscopy Unit, Faculty of Science, University of Khartoum.
- The Mycetoma Unit, Soba Teaching Hospital, University of Khartoum.
- Malaria Leishmania Administration, Federal Ministry of Health.
- Veterinary Research Center, Ministry of Animal Resources.
- Leprosy Control Program, Federal Ministry of Health.
- Department of Zoology, Faculty of Science, University of Khartoum.
- Faculty of Laboratory Sciences, University of Khartoum.
- Ahfad University for Women, Omdurman.
- Research Administration Unit, Federal Ministry of Health, Ministry of Health, Gedarif State.
- School of Mathematics, University of Khartoum.
- Commission for Refugees Ministry of Interior Affairs
- Faculty of Dentistry, University of Khartoum, Sudan.
- Commission for Humanitarian Aids, Khartoum, Sudan.
- Kassalla State Ministry of Health.
- Faculty of Medicine, Kassalla University.
- National Tuberculosis Control Program
Collaboration with Scientists Abroad

1. Professor E. E. Zijlstra, Faculty of Medicine, University of Malawi, Malawi.
2. Professor P. A. Kager, Department of Infectious Diseases, Tropical Medicine and AIDS, Academic Medical Centre, University of Amsterdam, Netherlands.*
3. Dr. Linda Oskam, Royal Tropical Institute, Amsterdam, The Netherlands.*
4. Dr. S. G. Reed, Infectious Disease Research Institute, Seattle, WA, USA.
5. Dr. Marita Troye-Blomberg, The Wenner-Gren Institute, Department of immunology, Stockholm University, Sweden.
7. Dr. Thor Theander, Dr. A. Kharazmi. Centre for Medical Parasitology, University of Copenhagen.
8. Dr. Douglas Barker, Department of Pathology, University of Cambridge.*
9. Professor L. L. Cavalli-Sforza, Department of Genetics, Medical School, Stanford University.
10. Dr. Hannah Akuffo, Microbiology and Tumorbiology Centre, Karolinska Institute, Sweden.*
11. Professor Thomas Unnasch, University of Alabama, USA.
12. Prof. Henry A. Verbrugh, University of Rotterdam, Netherlands.
13. Professor Jennifer Blackwell, Cambridge University, UK.
14. Professor Domininc Kwiatkowski, University of Oxford, UK.
15. Professor A. D. M. E. Osterhaus, Erasmus University, Rotterdam, Netherlands.*
16. Professor Trefer Jenkins, Johansberg, South Africa.
17. Professor Himla Sodyal, Johansberg South Africa
18. Dr. Mark Seielstad, Harvard University, USA.
19. Dr. Jeremy C. Mottram, Glasgow, UK.
20. Professor Francesco Baralle, International Center of Genetic Engineering and Biotechnology (ICGEB) Trieste Italy.
21. Professor R. Ward, Keele University, U.K.
22. Dr. Bela Veress, Department of Pathology, Malmo General Hospital, Malmo, Sweden.
23. Dr. Farroukh Modabber, Tehran, Iran; DNDi/Geneva, Switzerland.
24. Dr. Ikram Guzani, Pasteur Institute, Tunisia*.
25. Professor Ib Bygbjerg / Institute of Public Health, Copenhagen University
26. Dr. Rosbella Onyango, College of Public Health, Moi University, Kenya
27. Professor Sara Tishkoff, University of Maryland, USA
28. Professor Endashaw Bekele, University of Addis Ababa
29. Professor Jacques Louis, Pasteur Institute, Paris
30. Professor Pascal Launois, WHO Immunology Research and Training Center, Lausanne, Switzerland
31. Professor Nancy Sera, Cali, Columbia
32. Professor P. Styft, Prince Leopold Tropical Medicine Research Institute, Belgium
33. Dr. Greet Dieltiens, Prince Leopold Tropical Medicine Research Institute, Belgium
34. Professor Simon Croft, London School of Hygiene & Tropical Medicine, London, UK.
35. Dr. Vanessa Yardley, London School of Hygiene & Tropical Medicine,

Research Projects (Past and Current)

1. Safety, Immunogenicity and efficacy of Autoclaved leishmania major vaccine (ALM) in an endemic area of L. donovani infection in eastern Sudan. TDR (Professor Eltahir A.G. Khalil & Professor Ahmed M. Elhassan)

2. Safety and immunogenicity of ALUM/ALM vaccine in Healthy Sudanese volunteers (Professor Eltahir A.G. Khalil & Professor Ahmed M. Elhassan).

3. Immunochemotherapy for patients with persistent post kala-azar dermal leishmaniasis (PKDL) using Alum-precipitated ALM+BC vaccine and sodium stibogluconate: a hospital-based approach. (Professor Eltahir A.G. Khalil & Professor Ahmed M. Elhassan)

4. Immunochemotherapy for patients with persistent post kala-azar dermal leishmaniasis (PKDL) using LeishF2 vaccine and sodium stibogluconate: a hospital-based approach. (Professor Eltahir A.G. Khalil)
5. Immune profile and clinical presentations of patients with tuberculous lymphadenitis in the Sudan. (Professor Eltahir A.G. Khalil)


7. Anaemia of chronic malaria: the role of depressed erythropoietin response. (Professor Eltahir A.G. Khalil)

8. Congenital Malaria: a neonatal prospectus. (Professor Eltahir A.G. Khalil)

9. Sickle cell anaemia: a card/registry system for the control of HbS in nomadic tribes in western Sudan. (Professor Eltahir A.G. Khalil, Mr AA Nimir)

10. Sickle haemoglobin screening: Cellulose acetate versus ID technique. (Professor Eltahir A.G. Khalil, Mr AA Nimir)

11. AID to displaced people in Sudan: magnitude and efficiency. (Professor Eltahir A.G. Khalil, Dr Wigdan Ismail)

12. The origin of Hb.S gene haplotypes in the Myssieria tribe of Western Sudan: a moleculo-biological study, towards developing a community-based card/registry scheme for the control of sickle cell disease. Professor EAG Khalil, (Sponsor: Institute of Endemic Diseases, University of Khartoum).

13. The febrile child: towards developing a clinical algorithm to improve patients’ management. Collaborative study with the Central Police Hospital (Professor EAG Khalil, Dr Fawzi A Mahgoub)


15. Cytogenetic aberrations in cord blood of Sudanese neonates: Safety of Cord stem
Cells. Professor EAG Khalil (Waiting for funding).


18. HLA Allelic Patterns and haplotypes of major Sudanese tribes: a study of ethnology. Professor EAG Khalil, Dr MEE Eltahir (Sponsor: Institute of Endemic Diseases, University of Khartoum).


20. The role of amodiaquine/Artesunate Vs Chlorquine home management in reducing malaria burden in a cluster of villages along the White Nile. (Sponsor: White Nile State/IEND).

21. The role of Multiplicity of P.falciparum infection in the development of protective immunity against malaria. Professor EAG Khalil, SA Omer (TEMRI/IEND).

22. Malaria morbidity and mortality in an area of stable transmission in eastern Sudan: possible role of Hb AS, Hb F levels and G-6-P-D deficiency. (Sponsor: Institute of
Endemic Diseases, University of Khartoum). Professor EAG Khalil, AM Musa

23. LEAP 0104 project entitled “A multicentre comparative trial of efficacy and safety of Sodium Stibogluconate (SSG) versus Paromomycin (PM) versus Combination of SSG and PM as first line treatment for visceral leishmaniasis in Ethiopia, Kenya and Sudan”. July 2004 to date. (Dr. Ahmed Mudawi Musa, Professor Eltahir AG Khalil).

24. Single High dose Ambisome for primary Sudanese visceral Leishmaniasis. (Professor Eltahir.A.G. Khalil, Dr Brima Younis Musa & Dr Ahmed Mudawi Musa)

25. Miltefosine/SSG/Ambisome combination regimens for primary Sudanese visceral leishmaniasis. (Dr Ahmed Mudawi Musa, Professor Eltahir .A.G. Khalil)


27. Evaluation of molecular biological and serological methods in the diagnosis of leishmaniasis under field conditions. (Prof. Ahmed M. Elhassan).


29. Vaccines against leishmaniasis. (Prof. Ahmed M. Elhassan).

30. Epidemiology and immunopathology of mycetoma in the Sudan. (Prof. Ahmed M. Elhassan).

31. Epidemiology of leprosy in the southern part of Gedaref State, Sudan. (Prof. Ahmed M. Elhassan).

32. Epidemiology of malaria in two villages on the Rahad River, Gedarif State, Sudan. (Prof. Ahmed M. Elhassan).

34. Research grants: Grants received from TDR, EC, Wellcome Trust, DANIDA and most recently from The Academy of Sciences for the Third World (TWAS) to work on nasopharyngeal cancer ((Prof. Ahmed M. Elhassan).

35. GIS and epidemiology of Malaria in Sudan. Ongoing. (Dr. Ibrahim Elhassan).


37. Humoral and cellular immune responses to Malaria vaccine candidates. Ongoing. (Dr. Ibrahim Elhassan).

38. Impact of malaria-Helminthes co-infection on clinical and immunological immune responses to malaria. Ongoing. (Dr. Ibrahim Elhassan).


41. Genetic Diversity and Susceptibility to Malaria. (Co-Investigator, member of immunology cluster) supported by EU. 2004-2007. (Dr. Ibrahim Mohamed Elhassan).

42. Natural History of PKDL and its role in transmission. Supported by TDR/WHO 1999-2004. (Dr. Ibrahim Mohamed Elhassan & Dr Ahmed Modawi Musa).

43. The role of antigenic variation in maintenance of asymptomatic malaria infections throughout the Sudanese dry season 1998-2001. Supported by TDR/WHO. (Dr. Ibrahim Mohamed Elhassan).

44. The role of strain specific immunity in the development of strain specific immunity
Supported by. Tropical Medicine Award, The Wellcome Trust Fellowship, UK 1998-2001

45. Genetic Epidemiology in Sudan (International Centre For Genetic Engineering And Biotechnology).1997-2000 (Prof. Muntaser Ibrahim)


47. Genetic Susceptibility to Visceral Leishmaniasis: Comparative Studies in India, Sudan and Brazil (Prof. Muntaser Ibrahim-Co-Applicant). 2007- Ongoing

48. Detection of Drug Resistant Malaria and Tuberculosis Supported By IAEA (RAF/6/025) Regional Project (Prof. Muntaser Ibrahim).


51. Genetic of Cancer (Colorectal, Breast, Cervical). Ongoing –(Prof. Muntaser Ibrahim)


53. Y chromosome and mitochondrial genetics markers and their role in shaping the current ethno-geographical picture of Sudan. Ongoing (Prof. Ibrahim).

54. Genetics of Migraine. 2007-ongoing (Prof. Muntaser Ibrahim)

55. Epidemiological study of cutaneous leishmaniasis in Tuti Island-Khartoum looking
for the prevalence of the disease in human and Sand flies)-1996-1998. (Dr. Hiba Salah-Eldin Mohamed)


57. Genetic susceptibility to visceral leishmaniasis –Candidate gene approach-1998-2002. supported by the Wellcome Trust (Dr. Hiba Salah-Eldin Mohamed)

58. Functional and Genetic analysis of NRAMP1 gene using Real time PCR, reporter assay and sequencing-2007-Ongoing. Supported by The Wellcome Trust. (Dr. Hiba Salah-Eldin Mohamed)


61. Screening of known cytokine, nitric oxide and complement receptor one genes polymorphisms in Sudanese from malaria endemic areas. 2007-Ongoing. (Dr.Hiba Salah-Eldin Mohamed) Supported by Biomalpar and University of Khartoum.

62. Functional genomics of visceral leishmaniasis -2007-Ongoing.. Supported by Royal society-Pfizer award. (Dr. Hiba Salah-Eldin Mohamed)

63. Plasmodium falciparum var genes expression and their impact on Malaria manifestations- 2010- 2012. Supported by Ministry of Higher Education Grant. (Dr. Hiba Salah-Eldin Mohamed)

64. Genetics Susceptibility to Diabetes Type 2 – 2010. (Dr. Hiba Salah-Eldin Mohamed) Waiting for Fund.

65. Identification of possible reservoir hosts of Leishmania
donovani in kala-azar endemic region in eastern Sudan. 1992-1993 World Health Grant # 920144. (PI -Professor Maowia M. Mukhtar).

66. Epidemiology of Malaria and rapid epidemiological mapping (REMO) of Onchocerca volvulus infection in Sudan. 1995-1996 World Health Grant # 950011. (PI -Professor Maowia M. Mukhtar).


70. Immunology and histamine release in Onchocerciasis patients pre and post ivermectin treatment. World Health Organization grant number 960636. (Co- PI -Professor Maowia M. Mukhtar).

71. Cellular immune response of camel peripheral blood lymphocytes to Trypanosoma evansi, Rinderpest, Hydata and Brucella antigens Jan 1997 to June 1998. International Foundation of Science grant number B/2584-1 (PI -Professor Maowia M. Mukhtar).


75. Efficacy of measles mass vaccination in urban and periurban sites in Khartoum, Sudan. (PI -Professor Maowia M. Mukhtar). WHO grant No. YP/181. 2001 to 2003.

76. The burden of pulmonary tuberculosis in eastern Sudan. (Senior fellowship EDCTP (Professor Maowia M. Mukhtar). 2005.


79. Correlates of protective immunity to Leishmania infection (Co- PI Prof. Maowia M. Mukhtar) 2005 – 2006. UBS grant

80. DNA heterogeneity of Onchocerca volvulus isolates from different Onchocerciasis Endemic regions of Sudan. Supported by TDR\ WHO. (PI Prof. Maowia M. Mukhtar)

81. Immunity in Bovine Schistosomiasis. Supported by a grant from The EEC.( PI Prof. Maowia M. Mukhtar)

82. Proteomics of the urine of Kala-Azar patients. Supported by the International Center Genetic Engineering and Biotechnology. (PI Prof. Maowia M. Mukhtar)

83. Biomarkers of the urine and sputum of Mycobacterium TB patients. Supported by TDR (PI Prof. Maowia M. Mukhtar)

84. Diagnosis of Visceral Leishmaniasis: a multicenter study of global network for diagnosis of Visceral Leishmaniasis. Supported by WHO/ TDR. (PI Prof. Maowia M. Mukhtar)
85. Improvement of diagnosis of pulmonary tuberculosis. Supported by EDCTP. (PI Prof. Maowia M. Mukhtar)

86. Surveys on situation analysis in refugee camps and internally displaced people, (eastern Sudan, Dar elsalam Camp (IDP from southern Sudan). (Prof. ElTahir AG Khalil)

87. Rapid assessment of leishmaniasis situation in western Sudan among nomadic tribes using GIS, TDR-funded project (2004, PI Dr. A. H. Shareif)

88. Immune profile and clinical presentations of patients with tuberculous lymphadenitis in the Sudan.

89. The mechanisms of drug unresponsiveness in patients with visceral leishmaniasis pharmacokinetics and parasite factors, LEAP0104 (DNDi sponsorship). (Dr. Ahmed Mudawi Musa).


91. Parasite Genetic factors determining the outcome of to visceral leishmaniasis – genetics variations using minisatellite DNA markers (1999-2002). MSc research. (Dr. Muzamil Mahdi Abdel Hamid)

92. Exploratory research to improve the technology of transfection of malaria parasite using *Plasmodium knowlesi* parasite model, PhD research 2004-2005. (Dr. Muzamil Mahdi Abdel Hamid)

93. Identification of new malaria vaccine candidates emerging from proteomic and genomic analysis, PhD research, 2006-2007. (Dr. Muzamil Mahdi Abdel Hamid)

94. Assessment of vaccine characteristics of Apical Membrane Antigen 1 (AMA) using animal models, PhD research, 2007-2009. (Dr. Muzamil Mahdi Abdel Hamid).


97. Molecular characterization and taxonomy of Sudanese Leishmania parasite using different molecular and genetic markers. Ongoing. (Dr. Sahar Mubarak Bakhiet).

98. Immune response to Leishmania parasite in different clinical forms of Leishmaniasis. Ongoing (Dr. Sahar Mubarak Bakhiet).


100. Monitoring of anti Leishmania antibody responses for early diagnosis and prognosis of Visceral Leishmaniasis (Dr. Sahar M Bakhiet)

101. Oral pathology Professor Ahmed M. Elhassan and Dr Imad EL Emairi. ongoing

Grants Awarded to Academic Staff


2. Wellcome Visiting Research Fellow, University of Cambridge, 1997-1998 Department of Pathology, studying the Genetics of the parasite Leishmania donovani. (Prof. Muntaser Eltyeb Ibrahim).


7. The Wellcome Trust grant. Genetic Susceptibility to Visceral Leishmaniasis: Comparative studies in India, Sudan and Brazil (Co-investigator. Prof. Muntaser Eltyeb Ibrahim)

8. IAEA (RAF/6/025) regional project. Detection of drug resistant malaria and tuberculosis. (Prof Muntaser Eltyeb Ibrahim).


12. TDR/WHO Project ID 980971. ALUM/Autoclaved Leishmania Major Vaccine In Healthy Sudanese Volunteers In Khartoum. (Prof. EAG Khalil, Prof. Ahmed M. Elhassan).


14. DNDi-LEAP 0104 Project: A Multicentre Randomized Controlled Clinical trial of A Combination of Sodium Stibogluconate (SSG) Plus Paromomycin (PM) as A First Line Treatment of Visceral Leishmaniasis Vs SSG Alone Vs PM Alone In Ethiopia, Kenya And Sudan. (Ahmed Mudawi Musa, Prof. EAG Khalil, Prof. Ahmed M. Elhassan).

15. WHO/TDR grant. Efficacy of Alum/Alm+Bcg Combined With Sodium Stibogluconate (Ssg) Compared With Ssg Alone In The Treatment Of Post Kala Azar Dermal Leishmaniasis. (PI. Professor EAG Khalil, Prof. Ahmed M. Elhassan).

16. IDRI/Seatle, USA; WHO/TDR grant. A Phase 1, Randomized, Double-Blind, Adjuvant- and Placebo-Controlled Study to Evaluate The Safety, Tolerability, and Immunogenicity of the Leish-F2 + Mpl-Se Vaccine (Recombinant Three-Antigen Leishmania Polyprotein Leish-F2 With Adjuvant Mpl-Se) in Combination With Sodium Stibogluconate In The Treatment of Patients With Post Kala-Azar Dermal Leishmaniasis. (PI. Professor EAG Khalil).

17. The mechanisms of drug unresponsiveness in patients with visceral leishmaniasis. Local sponsorship. (Prof. E AG Khalil).

18. Tuberculous lymphadenitis, clinical, cytologica, microbiological and drug response aspects: towards developing a clinical algorithm to improve patients’ management. Local sponsorship (Prof. EAG Khalil).
19. Anaemia of Visceral leishmaniasis: Possible role of blunt erythropoietin response. IEND funding. (Prof EAG Khalil).

20. Malaria morbidity and mortality in an area of stable transmission in eastern Sudan: possible role of Hb AS, Hb F levels and G-6-P-D deficiency. IEND funding (Prof EAG Khalil).

21. The febrile child: towards developing a clinical algorithm to improve patients’ management. Collaborative study with the Central Police Hospital. IEND funding (Prof. EAG Khalil/Dr. Fawzi A. Mahgoub).


24. WHO grant ID 950011. To study the Epidemiology of Malaria and to rapid epidemiological mapping (REMO of Onchocerca volvulus infection in Sudan. 1995-1996 (Prof. Maowia Mohamed Mukhtar).


28. WHO grant ID 960636. To study the immunology and histamine release in Onchocerciasis patients pre and post ivermectin treatment. (Prof. Maowia Mohamed Mukhtar).

29. International Foundation of Science grant ID B/2584- 1. To study the cellular immune response of camel peripheral blood Lymphocytes to Trypanosoma evansi, Rinderpest, Hydata and Brucella antigens Jan 1997 to June 1998. (Prof. Maowia Mohamed Mukhtar).


33. WHO grant ID YP/181. Efficacy of measles mass vaccination in urban and periurban sites in Khartoum, Sudan 2001 to 2003. (Prof. Maowia Mohamed Mukhtar).

34. Senior fellowship EDCTP. To study the burden of pulmonary tuberculosis in eastern Sudan 2005.. (PI- Prof. Maowia Mohamed Mukhtar).


40. WHO/ TDR training fellowship for 8 months- Cambridge University- UK (1999). (Dr. Hiba Salah-Eldin Mohamed).


43. University of Khartoum Research fund for one years (2007) (Genetics and immunological factors determining the severity of P. falciparum infection. (Dr. Hiba Salah-Eldin Mohamed)

44. WHO capacity strengthening program grant for faculty of Science (2005). “Investigation of possible reservoir host in Eastern Sudan (Co-investigator. Dr. Hiba Salah-Eldin Mohamed)

45. Royal Society Pfizer Award (2007). Recognition of my work on the genetic basis of susceptibility to visceral leishmaniasis in the Sudan. the research entitled “Functional Genomic of Visceral leishmaniasis and PKDL in the Sudan”. (Dr. Hiba Salah-Eldin Mohamed).

47. PhD Fellowship from the European malaria vaccine initiative (EMVI) and Biomedical Primate Centre (BPRC), Rijswijk, The Netherlands. 2004-2008. (Dr. Muzamil Mahdi Abdel Hamid).

48. MSc fellowship DAAD, Germany and University of Khartoum, Sudan. 2000-2002. (Dr. Muzamil Mahdi Abdel Hamid).

49. DAAD scholarship programs for Master and PhD Scholarships 2002-2006. (Dr. Sahar Mubarak Bakhiet).


52. LEAP 0104 grant. A multicentre comparative trial of efficacy and safety of Sodium Stibogluconate (SSG) versus Paromomycin (PM) versus Combination of SSG and PM as first line treatment for visceral leishmaniasis in Ethiopia, Kenya and Sudan”. July 2004 to date. (PI- Dr. Ahmed Mudawi Musa, Prof. EK Khalil, Prof. Ahmed M. Elhassan).

53. AMANET grant. African immunoassay to malaria vaccine candidates project. 2007-2009. (Prof. Moawia M. Mukhtar, Dr. Ibrahim Mohamed Elhassan, Dr. Sahar M. Bakhiet).

54. WHO/TDR /MIM. Epidemiological study of malaria in areas of seasonal malaria transmission in Ethiopia and Sudan. 2004-2008. (Dr. Ibrahim Mohamed Elhassan).

56. TDR/WHO grant. Natural History of PKDL and it is role in transmission. 1999-2004. (Dr. Ibrahim Mohamed Elhassan).

57. TDR/WHO grant. The role of antigenic variation in maintenance of asymptomatic malaria infections throughout the Sudanese dry season 1998-2001. (Dr. Ibrahim Mohamed Elhassan).

58. Tropical Medicine Award and the Wellcome Trust Fellowship, UK. The role of strain specific immunity in the development of strain specific immunity. 1998-2001. (Dr. Ibrahim Mohamed Elhassan).


Activities of the Institute During the Last Ten Years:

Workshops and Scientific Meetings:

- Molecular Biology techniques in Research and Diagnosis of Infectious Diseases (1996) Course. Institute of Endemic Diseases, University of Khartoum


• Introduction to Immunology and Molecular Biology (1997-1999). Institute of Endemic Diseases, University of Khartoum.

• World Heath Organisation meeting 22nd September 1997; Wood Hole, USA.

• Malaria research in Denmark meeting 1st-2nd December 1998, Copenhagen, Denmark.

• The 2nd African malaria vaccine testing network meeting, 22nd –25th February 1998 Accra Gahanna.

• Institute of Endemic Diseases first Scientific Meeting. 1998- Khartoum -Sudan.

• International Congress of Pediatrics, Amesterdam, The Netherlands. 1998

• The first meeting on the genetics of the populations of the Sudan (1998).

• Malaria in Africa: Challenges for cooperation 6th –9th January 1997, Dakar, Senegal.

• Surviving in Science workshop, for Wellcome Trust International Fellows, 16th -18th July 1998, London, and U.K.

• The 10th Malaria meeting of the British Society for Parasitology, 21st-23rd September 1998, Edinburgh, Scotland.

• First Scientific Meeting, Institute of Endemic Diseases (Feb. 1999).


• Introduction to Immunology and Molecular Biology (1999). Institute of Endemic Diseases, University of Khartoum


• Introduction to Bioinformatics (2000). Cambridge University. UK

• Introduction to Biostatistics and SPSS, Cambridge University, UK (2000)

• Bioinformatics course. Institute of Endemic Diseases (2000).

• Preventive Health in Displaced Camps, Institute of Endemic Diseases and Copenhagen University (2000).

• Research priority setting in El Gadarian and Kassala, Institute of endemic diseases and federal and state ministry of health (2000).

• Diarrhea in refugees' camp / institute of Endemic Diseases and commission for refugees (2000).

• National workshop for research priority setting and national conference of health research in the Sudan. 2000.
• Training for three months at Department of Pathology, University of Cambridge. UK. 2000

• The 3rd Leishmaniasis Vaccine Product Development Team (PDT) Meeting. TDR/WHO. Isfahan, Iran, 2-5 July 2000.


• International conference on population studies Cairo; Egypt (2000).

• Workshop on designing and developing clinical trials (for leishmaniasis vaccines development). TDR/WHO. Ouro Preto, Brazil, 17-20 April 2000.


• Diabetes in Sudan Situation analysis / Institute of Endemic Diseases and national diabetic control programme (2001).

• External Examiners: Moi University Institute of Public Health and Faculty of public Health Department of Nutrition / undergraduate and post graduate students (2001-2004).

• Cytogentics and Molecular cytogenetic of Cancr workshop, Khartoum; Sudan (July, 2001).

• Ethics in medical research workshop. Medical Sciences Campus, University of Khartoum (August, 2001).

• The Fifth Conference of the Syrian Clinical Laboratory Association. Damascus, Syrian Arab republic. 15\textsuperscript{th} - 17\textsuperscript{th} September 2001.

• Product Development Team, Vaccines for Leishmaniasis: Geneva, Switzerland, 5\textsuperscript{th} December 2001.

• World Leish 11, Greece 2001.

• Final meeting: Leishmania Major sequencing project, University of Trieste. Dept. of Biology, Trieste, Italy. September 2001.


• Global Forum for health research meeting / Forum 5 The 10/90 gap in health research ; assessing the progress .Geneva, Switzerland. 2001.

• Joint TDR/IDRI Leishmania Vaccine Clinical Trial Meeting: Geneva, Switzerland, 6\textsuperscript{th} - 7\textsuperscript{th} December 2001.

• Joint TDR/IDRI Leishmania Vaccine Clinical Trial Meeting: Geneva, Switzerland, 6\textsuperscript{th} - 7\textsuperscript{th} December 2001.

• Leishmaniasis Vaccine Product Development Team Meeting, Geneva, Switzerland, 24\textsuperscript{th} – 25\textsuperscript{th} October 2002.
• Nutrition in emergency situations/refugees health course institute of public health / Copenhagen University 2001-2002

• The 6th International Meeting on Molecular Epidemiology and Evolutionary Genetics in Infectious Diseases, Pasteur Institute, Paris, France. (2002).


• Africa Malaria Research Leaders Management Training workshop, Arusha Tanzania, October 6-12 2002.

• MIM Meeting Arusha, Tanzania 2002.

• Workshop on Health research Ethics and good Clinical practice, 22-26 July 2002, University of Pretoria, South Africa.


• Conference on Endemic & Infectious Diseases in the Sudan: Ministry of Science and Technology, National Centre for Research; Tropical Medicine Research Institute;


- Conference on Endemic & Infectious Diseases in the Sudan: Ministry of Science and Technology, National Centre for Research; Tropical Medicine Research Institute; Institute of Endemic Diseases, U. of Khartoum & TDR/WHO. Khartoum, Sudan, 5-8 May 2003.


- Nutrition courses, Faculty of Public and Environmental Health, Khartoum University On going.


- The genetics of Ethnicity and Disease, Medical Genetics in the developing World, Course at the ICGEB Trieste Italy 2003.

• Regional Scientific meeting of malaria vaccine Researchers, Maputo, Mozambique 10-11 November 2003.

• Molecular Diagnostics and therapeuatics a viable case for Africa 1st World Biotechnology Forum 2-5 March Concepcion Chile 2004.


• Health Genes and Culture from an African popultion perspective, 2nd Annual Africa Genome Conference. Cairo, March 2004.


• Application of Integrated management of child hood illness strategy in refugee camps in Sudan Institute of Endemic Diseases / commission for refugees United nation Higher commission for refugee UNHCR , Girba, Gedarif State, Sudan (2004).

• Audiometry & ECG practical Training Course for Researchers of the LEAP group in Collaboration with DNDi, Geneva, Switzerland, November 2004, Khartoum, Sudan.

• Post graduate course on Immunology for post graduate students, the Lieden University, The Netherlands, 2004


• Regional Training Course on Bioinformatics Applied to Tropical Diseases in Africa. South African National Bioinformatics Institute University of the Western Cape. 2004

• Regional Training Course on Bioinformatics Applied to Tropical Diseases in Africa. South African National Bioinformatics Institute University of the Western Cape. Cape town, South Africa 2004

• Audiometry training course for the investigators of DNDi/Geneva in preparation for “Multicentre, randomized clinical trial on the efficacy of Paromomycin versus SSG


- Immunological Techniques from the field to bench, AHRI, Addis Ababa, Ethiopia, October 12-21, 2005.


- Immunological Techniques from the field to bench, AHRI, Addis Ababa, Ethiopia, October 12-21, 2005.

- First Annual BiomalPar Conference on the Biology of the malaria, March 2-4 2005 Heidelberg (Germany).

- Brazilian Society of Protozology, Coxambu 7-10 Nov 2005.

- Advanced Regional Training Program in Bioinformatics, Muscat, Oman, 10-14 December 2005

- Winter school of bioinformatics and statistical genetics (2005-On going).

- Health system and Health research in conflict areas, Institute of Endemic Diseases, University of Khartoum and Department of International Health, University of Copenhagen (Khartoum 28-30th July 2005).
• Training course at Institute for Staff Skills Development -University of Khartoum (2006, 2009).

• the 2nd Annual BiomalPar Conference on the Biology of the malaria, March 2-4 2006 Heidelberg (Germany)


• Chloroquine-resistant P.falciparum malaria in Sudan: examining the evidence, three years after stopping chlorquine. July 2006. In collaboration with Faculty of Medicine, University of Khartoum & the Sudanese Society of Clinical Biology.


• The 2nd DNDi consultative meeting on the pharmacokinetics of paromycin, paromycin/SSG combination in Sudanese patients with visceral leishmaniasis as part of the multicenter randomised clinical trial to test Paromomycin versus SSG versus a combination of SSG and Paromomycin for treatment of visceral leishmaniasis,8-9.06.2006, KEMRI, Nairobi, Kenya.

• The 11th Conference of Pan Arab Association of Clinical Biology, Damascus, April/May; Syria 2006.


• International Congress of Parasitology, Glasgow. United Kingdom. 2006.

• Workshop on Chloroquine-resistant *P. falciparum* malaria in Sudan, July 2006. University of Khartoum.

• The first scientific meeting of the Sudanese society of Clinical Biology Khartoum,24-27th November 2006.

• Third Annual BiomalPar Conference on the Biology of the malaria, April 10-12 2007 Heidelberg (Germany).

• Molecular diagnosis of infectious diseases (leishmaniasis, Malaria, Tuberculosis), Khartoum 8-11 July 2007.


• African Society of Human Genetics Meeting, Cairo-Egypt.2007.

• The 7th LEAP (Leishmaniasis East Africa Platform)/DNDi Geneva meeting “Multicentre, randomized clinical trial on the efficacy of Paromomycin versus SSG versus SSG/Paromomycin combination for the treatment of visceral leishmaniasis.” Kampala, Uganda 15-16.03.2007.

- Functional Genomic of Malaria Parasites (Biotec, Thiland

- March -2007. WHO/TDR and BioMalPar

- Malaria research capability strengthening in Africa and informal consultation on malaria research Capacity needs, WHO Regional office for Africa(AFRO), Brazzaville, 26-30 March 2007


- The winter course of life science on Immunology .Al-Neelain University –Sudan.5-10 January 2008.


• National training course on the use of stable isotopine techniques in nutrition: International Atomic Energy Agency/IEND. Khartoum, Sudan 7-10 April 2008.

• XIIth conference of Syrian Clinical Laboratory Association; Damascus May 2008.


• Afro-Immunoassay project-2 workshop-Standardization of Immunoassay and introductory statistics. Noguchi Memorial Institute for Medical Research Accra, Ghana July-2008


• Dr. Hiba Mohamed –The Royal Society- London-3rd of November 2008

• TWAS XIX General Meeting. Invited as TWAS Young Affiliate, 8-13 November 2008, Mexico City, Mexico

• Training at Department of Parasitology, Biomdeical Primate Research Centre (Part of my PhD), Leiden University, The Netherlands (2004-2008). Funded by EMVI/ European Union and Biomedical primate research centre, The Netherlands

• On line Course on Analysis of epidemiological data using R software and Epicalc, Epidemiology Unit, prince of Songkla University, Thailand 2008.

• Immunity to malaria (Cluster 4_ BiomalPar Project) 8-10 December 2008 st.Odile France
• Scientific and research collaborative meeting between the Institute of Endemic Diseases and Medical research institute Kilifi Kenya 31/6- 1/7 2008

• Search consortium meeting 25/07/2008 Nairobi Kenya.

• The 3rd imitative to strengthen health research capacity in Africa 6-8 August 2008. Nairobi, Kenya.

• WorldLeish 4 Congress on Leishmamiasis. Lucknow. India 3-7 February 2009.

• Third conference of the Society of Clinical biology 2009 Sudan.

• Proposal writing and research management. EDCTP. Uganda .March 2009.

• GCLP in VL laboratories (organized by WHO) 18-21 August 2009.

• Malaria mapping seminar, In collaboration with Gezira university and The Welcome Trust centre at Kenyan medical research institute /Oxford University, Held at university of Khartoum on 17 March 2009

• Update on malaria in Africa, convergent ethical issue in HIV, Tb, Malaria vaccine trials in Africa work shop, university of Kwazulu natal South Africa 10-11 February 2009.

• Malaria epidemiology and control in Africa, Institute for virology and immunology, University of Würburg, Germany 20 May 2009

• African Society of Human Genetics Meeting, Yaounde Cameroon, March 2009

• Leishmaniasis: Collaborative Research opportunities in North Africa and the Middle East 21-25 June 2009


• The Fifth forum of European and development countries clinical trial program for malaria, Tb, and HIV. Arusha, Tanzania 12-14 October 2009

• BioMalPar meeting, Heidelberg 2009.

• MIM meeting, Nairobi 2009

• Sudanese Academy of Young Scientist 1st meeting. Institute of Endemic Diseases and Nile college, Khartoum, February 2009


• Worldleish 4 Congress on Leishmaniasis. Lucknow. India 3-7 February 2009.

• Young scientist 1st meeting. Institute of Endemic Diseases and Nile college, Khartoum, February 2009

• Third conference of the Society of Clinical biology 2009 Sudan.

• Proposal writing and research management. EDCTP. Uganda. March 2009.

• GCLP in VL laboratories (organized by WHO) 18-21 August 2009.

• Good Clinical Laboratory Practice (GCLP) in VL laboratories (organized by WHO/TDR) .18-21 August 2009. Khartoum-Sudan.

• Malaria mapping seminar, In collaboration with Gezira university and The Welcome Trust centre at Kenyan medical research institute /Oxford University, Held at university of Khartoum on 17 March 2009

• Update on malaria in Africa, convergent ethical issue in HIV, Tb, Malaria vaccine trials in Africa work shop, university of Kwazulu natal South Africa 10-11 February 2009.

• Malaria epidemiology and control in Africa, Institute of virology and immunology, University of Wörburg, Germany 20 May 2009

• African Society of Human Genetics Meeting, Yaounde Cameroon, March 2009

• The Fifth forum of European and development countries clinical trial program for malaria, Tb, and HIV. Arusha , Tanzania 12-14 October 2009

• BioMalPar meeting, Heidelberg 2009.

• MIM meeting, Nairobi 2009

• Malaria Day at el Nailain University, 25th April 2010

• Ongoing initiative for collaborate with the University of Gezeera and the Blue Nile Institute for communicable diseaseas. 2010

• Agreement to collaboration with the Department of Tropical Medicine of the Medical Mission Hospital at the University of Wurzburg, Germyen and the Institute of
Endemic Diseases of the University of Khartoum. 2010

- Coordination and participation in a course on The Right of Women to Health organized by Women Initiative Group May 7-12-2010. The course was part of a project sponsored by the EU (Professor ElHassan).

- Professor Elhassan is running courses on Tropical Diseases at the University of Science and Technology and Medco Centre -2010- present

- lecture delivered by Professor Elhassan on complications of renal transplants at the Nephrology Conference at Alazhary University in April 2010

- Professor Elhassan was a guest at the Faculty of Medicine and Medical lab Technology where he inaugurated a one day exhibition by the students and gave a pathology lecture and another on music and medicine. February 2010

- Several articles on Music of the Abbasid period in the local press by Professor Elhassan.

- The 1st Scientific conference of the Post Graduate Collaege University of Khartoum 2010. “Problems of research in Sudan and the University of Khartoum.” Professor AM Elhassan.


**Students:**

**Masters degrees (By research): Current:**

• Ahmed Adlan. Plasmodium falciparum Erythrocyte Binding Antigen (EBA-175) genotypes distribution in Sudanese malaria patients and it is relation to phenotypes. Supervisor Dr. Hiba Salah Eldin Co-supervisor Dr.Nasereldin Elhadi.

• Ahmed Elnazeer. Genetic factors determining severity of Plasmodium falciparum infection. Supervisor Dr. Hiba Salah Eldin Co-supervisor Dr.Ibrahim .M. Elhassan.

• Eiman Hussien Abudamir. Immunology of breast feeding against diarrheal infection. Supervisor Dr. Faiza M. Osman.

• Hiba Kailanni. Comparison between conventional, molecular and immunological diagnostics of pulmonary TB. Supervisor Prof. Moawia M. Mukhtar.

• Hiba Osman. Comparative diagnostics of pulmonary TB. Supervisor Prof  Moawia M. Mukhtar.

• Mohammed Osman. MD. Supervisor Prof. Ahmed M. Elhassan, Dr. Ibrahim M. Elhassan.


• Nuha Mohamed Elhassan. Autosomal and mitochondrial genomes the possible cross talk mechanism. Supervisor Prof. Muntaser Eltayeb Ibrahim

• Omima Abd Aziz Osman. Drug resistance for mycobacterium TB. Supervisor Prof. ELtahir A.G.Khalil.

• Soha Aydrous. Immune responses to malaria vaccine candidates (MSP3/GLURP). Supervisor Dr. Ibrahim M. Elhassan, Co-supervisor Prof. Muntaser Eltayeb.

• Tamador El Zebear. P53 genes polymorphisms in breast cancer patients. Supervisor Prof. Muntaser Eltayeb.

• Tasneem Moawia. Validation of asexual blood stage antigens as putative malaria vaccine candidate molecules using standardized assays. Supervisors Prof Moawia Mukhtar, Dr. Ibrahim M. Ellassan.

• Tayseer Mahiadein Abdalla Alawad. Supervisor Prof. Altahir.A.G. Khalil.

• Waleed Hussain Omer Amer. Molecular epidemiology of anti-malarial drug resistance genes in Sennar region. Supervisor Prof. Muntaser Eltayeb.

- Wigdan Salih Ali Azrag. Genetic diversity of malaria parasite in eastern Sudan. Supervisor Prof. Muntaser Eltayeb-Co supervisor Dr. Ibrahim M. El Hassan.
- Huasm Abd lramn Mohamed. Monitoring of anti leishmania antibody responses for early diagnosis and prognosis Sudanese visceral leishmaniasis. Supervisor Prof Moawia M. Mukhtar.
- Ahmed Giebriel. Supervisor Dr. Ahmed Mudawi.
- Salma Mohamed Badri. In vivo antiplasmodial effect to Azadiracta indica (neem) using cellerbar Purkinje cell murine cerebral malaria. Supervisor Prof Eltahir A. G. Khalil.

**PhD students (By Research): Current:**

- Ameera Adam. The pathology of nasopharyngeal cancer in Sudan and its association with the Epstein Barr virus. Supervisor Prof A M EL Hassan
- Eman Hussain Khalifa. Nasopharyngeal carcinoma associated Epstein Barr virus in Sudan Histological, serological, and Immunohistochemical study. Supervisor Prof A M EL Hassan
- Ayman Awad. Immunomodulation of different clinical forms of leishmaniasis. Supervisor Prof Moawia M. Mukhtar.
• Habab Merghani Yassin: Immune evasion and recrudensence in P falciparum: PfEMP-1 paradigm. Supervisor Prof Eltahir Awad Gasim Khalil.


• Amel Osman khider. Genetic susceptibility of Asthma in chromosomes in Sudanese population. Supervisor Prof. Muntaser Eltayeb Ibrahim.


• Ghada Hassan Hig Ali. Methylation studies in colorectal cancer patients. Supervisor. Prof. Emad Fadalmula and Prof Muntaser Ibrahim

• Sarra Mohmmed Hussien. Migrane profile in Sudan. Supervisors Dr. Salah M. Ali majzoob and Prof. Muntaser Ibrahim.

• Ameera Adam Mohmmed Adam. Supervisor Prof. Muntaser Eltayeb.


• Amir Tageldin Ibrahim . Genetic susceptibility to Type 2 Diabeties . Supervisor Dr. Hiba salah-Eldin Mohamed
- Arif Farah El rahman. Supervisor Prof. Maowia M. Mukhtar.
- Kawther Abdel galeel. TLR2 and 4: possible roles for susceptibility to latent Mycobacterial infections. Supervisor Professor Eltahir Awad Gasim Khalil.
- Amani Ahmed Mohammed Alamin. Studies on protein profile in a panel of Sudanese breast cancer patients. Supervisor Prof. Muntaser Eltayeb

Degrees awarded with full or partial supervision (2002-2010):

MSc degrees by Research:

- Areej kamil Abdelazziz, Safety and Immune modulatory effects of escalating doses of Alum-precipitated autoclaved Leishmania major (ALM) vaccine plus BCG in healthy Sudanese volunteers. Supervisor Professor Eltahir Awad Gasim Khalil
- BaderAldin AlAmin: A study on 4 selected sudanese populations based on 6 polymorphic microsatellite markers. Supervisor Professor Muntaser E Ibrahim
- Abdelgadir Haj Elagib. Possible predisposing factors for the development of thrombotic cerebrovascular accidents (CVAs) in Sudanese patients<50 years. Supervisor Professor Eltahir Awad Gasim Kalil.
• Muzamil Mahdi Abdel Hamid. Genetic variations within Leishmania donovani parasites revealed by minisatellite DNA markers and RFLP analysis. Supervisor Professor Muntaser E. Ibrahim.
• Adel Naser Morsi. Supervisor Professor Eltahir A.G. Khalil.
• Ahmed Dafalla. Supervisor Professor Moawia M. Mukhtar.
• Amel Farouk Aldawi. HLA frequency of HLA-DRB1 and HLA-DQB1 alleles in mycetoma patients. Supervisor Professor Moawia Mukhtar.
• Amel Saeed. Evaluation of Leishmania antigens for the diagnosis of visceral Leishmaniasis. Supervisor Professor Moawia Mukhtar.
• Abdelbadeih A M Elhassan. The genetic diversity of two ethnically different populations in eastern Sudan based on four SNPs in the 5q31-33 region. Supervisor Professor Muntaser E Ibrahim.
• Ayman awad. Characterization of Leishmania antigens in urine of VL Patients. Supervisor Prof Moawia Mukhtar.
• Dalal Kamal Eldin Diab. Characterization of malaria related anaemia in eastern Sudan. Supervisor Dr Ibrahim Elhassan.
• Dina Tag El Sir. Supervisor Prof Moawia M. Mukhtar.
• Fatima Eltigani. Future effects of imported S haplotypes on the epidemiology of Plasmodium falciparum infection in eastern Sudan: possible scenario. Supervisor Professor Eltahir Awad Gasim Khalil.
• Gihan Mossalami. Supervisor Prof Moawia M. Mukhtar.
• Hala Taha Mohamed. Supervisor Prof. Muntasir Eltayeb Ibrahim.
• Hani Ishaq. Supervisor Prof. Muntasir Eltayeb Ibrahim.
- Hind M Abushama. Inter and intra population diversity of Anopheles arabiensis in Khartoum state as revealed by polymorphic molecular markers. Supervisor Professor Muntaser E Ibrahim.


- Israa Omer Elrayah. Analysis of cellular immunity of mycetoma patients. Supervisor Professor Moawia Mukhtar.


- Limya Elhag Yousif Ahmed. Immuno-epidemiological studies of malaria in Rahad River area eastern, Sudan. Supervisor Dr Ibrahim Elhassan.


- Maha Mohammed Osman Mohammed. Genetics of lactase persistence in Sudanese population. Supervisor Professor Muntaser Eltayeb Ibrahim, Co supervisor Dr. Sara Tishkoff.

- Mai A Masri: Mutational analysis of brca2 and p53 genes in a panel of Sudanese breast cancer patients. Supervisor Professor Muntaser E Ibrahim.

- Manal Gamal Eldin Abdu. Characterization of Pentostam resistant Leishmania donovani isolates from eastern Sudan. Supervisor Professor Moawia Mukhtar.


- Misk El Yemen El Mekki. Sensitivity and specificity of RAL2, Calreticulin and PDI recombinant antigens of Onchocerca volvulus. Supervisor Professor Moawia Mukhtar.


- Mohamed Salih Mohamed Ahmed. The Role of IFNg and IFNgR1 gene polymorphisms in susceptibility to PKDL. Supervisor Dr. Hiba Salah Eldin, Co supervisor Prof. Muntaser Eltayeb Ibrahim.
• Mohaned Osman Abdalla. Sero-prevalence of anti-merozoite surface protein-1(19) (MSP1_{19}) antibodies in an area of unstable malaria transmission: examining a candidate vaccines for malaria Supervisor Professor Eltahir Awad Gasim Khalil.

• Mona Abdel Rahman El Agib. Monitoring of Leishmania donovani specific antibodies in Kala-Azar and Post Kala-Azar dermal Leishmaniasis patients in Sudan. Supervisor Professor Moawia Mukhtar.

• Mukhlid Imam Ali, Characterization of dermal lieishmaniasis. Supervisor Professor Moawia Mukhtar.

• Muna Mohamed Atta Elmanan. Genetic diversity in development of Immunity to malaria. Supervisor Dr Ibrahim El hassan.


• Nagat Ibrahim, De novo multi-drugs resistance of Mycobacterium tuberculosis Supervisor Professor Eltahir Awad Gasim Khalil.


• Nahla Babiker Ayed. Surrogate markers of immunity to human visceral leishmaniasis. Supervisor Professor Eltahir Awad Gasim Khalil.

• Nahla M Ali Osman: Molecular features of the Leishmania donovani cell cycle. Supervisor Professor Muntasir E. Ibrahim.

• Nevien Abdel Wahab Hassan. Association of abnormal hemoglobins with clinical malaria. Supervisor Professor Muntasir E. Ibrahim.


• Nuha Mohamed Yousif Ismail, Humoral immune responses to the Glucose-regulated Protein 78-a novel Leishmania donovani antigen. Supervisor Dr Ibrahim Elhassan.

• Omenia El Fatah. Mutation analysis of microsatallites & macroarray in Sudanese colorectal cancer Supervisor Professor. Muntasir Eltayeb Ibrahim.

• Rania S Giha. A possible role for Global Methylation in cancer pathogeneisis among Sudanese breast cancer patients. Supervisor Professor Muntasir E Ibrahim.

• Rassha Wageeallah. Supervisor Professor Moawia M. Mukhtar.
• Rihab Abdel Gadir Hashim, Parasite diversity and antibody response to Plasmodium falciparum in patients with cerebral Malaria Supervisor Professor Moawia Mukhtar.
• Rihab Bereir. Allele frequency and Genotype distribution in disease related genes among selected populations in the Sudan. Supervisor Professor Muntaser E Ibrahim.
• Rose Ajake, MD, University of Khartoum, Role of Tumor necrosis factor Alpha in severe malaria among children admitted to Khartoum children’s Emergency Hospital. Supervisor Dr. Ibrahim Elhassan.
• Salma Mohamed Khidir, Th1/Th2 immune response switch: the case of post kala-azar dermal leishmaniasis. Supervisor Professor Eltahir Awad Gasim Khalil.
• Samah Mahjoub Hassan. Molecular characterization of Sudanese Acacia sengal var Sengal. Supervisor Professor Moawia Mukhtar Co supervisor Dr. Esam E. Warag.
• Sara Basher Taha Mohammed. Immune recognition to malaria vaccine candidates RESA and CSP in malaria endemic area in Sudan. Supervisor Professor Dr Ibrahim Elhassan.
• Sara Hamad Hasab Elgawi. In vitro induction/augmentation of unresponsiveness to sodium stibogluconate in Leishmania donovani isolates. Supervisor Professor Eltahir Awad Gasim Khalil.
• Shadin Abed Elgaffar AbdelRahim. Exposure to Plasmodium falciparum parasites outside the malaria season in an area characterized by seasonal & unstable malaria transmission in eastern Sudan Supervisor Dr. Ibrahim Elhassan.
• Shima Faroug. IL10 gene polymorphisms and development of PKDL. Supervisor Dr. Hiba Salah Eldin. Co supervisor Prof. Muntasir Eltayeb Ibrahim.
• Tageldin A M Nour. Genetic characterization of Sheep Pox virus. Supervisor Professor Muntasir E Ibrahim.
• Tayseer Abdelhady Mohammed Yousif. Immunological characterization of hyperactive splenomegaly Syndrome (HMS) in Sudan. Supervisor Dr Ibrahim Elhassan.
• Mohmmed salah EL nour Mohmmed. Supervisor Professor Eltahir Awad Gasim Khalil Abdalla Abd El Moati. Supervisor Prof. Muntasir Eltayeb.
• Badria Mohammed Said (NOS2 polymorphisms among selected ethics group in Eastern Sudan. Supervisor Dr. Hiba Salah-Eldin. Co-Supervisor Dr. Ibrahim M. ElHassan.


• Mervat El-Shaikh Sulaiman. The distribution of IL-4and IL-4R polymorphisms in two ethic group in malaria endemic areas in eastern Sudan. Supervisor Dr. Hiba Salah Eldin Co-supervisor Prof. Muntasir Eltayeb Ibrahim.

• Mervat Mohammed El Kazi. A comparative study of malaria transmission during the dry and wet seasons in endemic area in eastern Sudan. Supervisor Dr. Ibrahim M. Elhassan.

• Habab Elsir. Comparative diagnostic of HIV using ELISA and sputum test. Supervisor Prof Moawia M. Mukhtar.

• Mohamed Osman Hussein. Cellular immunity of visceral leishmaniasis patients. Prof. Moawia M. Mukhtar.

• Mohammed Mohieldien Abbas Alfaki. The impact of helminthes co-infection in the clinical and immunological outcome of Plasmodium falciparum Malaria. Supervisor Dr. Ibrahim M. Elhassan Co-Supervisor Prof. Muntasir Eltayeb.

• Mohammed Salih El-Nour Mohammed. Cytogenetic Aberration in Sudanese Neonates. Supervisor Prof. Altahir A.G. Khalil.

• Mona Zamrawe. Supervisor Prof. Muntaser Eltayeb.

• Nazik Awad. Protein profile of leishmania axenix form. Supervisor Prof Moawia M. Mukhtar.

• Mujtaba El-Smany Ahmed. Mononuclear cell immunophenotyping of C.B. Supervisor Prof. Eltahir A.G. Khalil.

• Nahid Eid. Population substructure and malaria candidate SNPs with in different Epidemiological setting in Sudan. Supervisor Prof. Muntasir Eltayeb Ibrahim.

• Reem Khalil Mohammed Taha. The role of IgE antibodies in protection against P.F. Supervisor Dr. Ibrahim M. Elhassan. Co-Supervisor Prof. Muntasir Eltayeb.

• Sara Elsir Mohammed Elhassan. Characterization of leishmania antigens in urine of visceral leishmaniasis patients. Supervisor Prof Moawia M. Mukhtar.
• Sara Nour El Dayem. Polyclonal anti-leishmanial antibodies: is it a necessity to human hosts? Supervisor Prof. Eltahir.A.G. Khalil.
• Omnimyah ELfatih Yousif. Micosatellite Instability and loss of heterozygosity in Sudanese Colorectal Cancer. Supervisor Prof. Muntaser Eltayeb.
• Zienab Ali Almahdi. Estimation of malaria transmission in central Sudan using ELISA. Supervisor Dr. Ibrahim M. Elhassan. Co-supervisor Prof. A. Nugud
• Addebadea Ahmed. The genetic Diversity of two ethnically different populations in eastern sudan based on four single nucleotide polymorphisms in chromosome 5 Q 31-33. Supervisor Prof. Muntaser Eltayeb.
• Niven Abdel wahab salih. Supervisor Prof. Muntaser ELtayeb Tite. Fregnency of hemoglotion S.C and their asssoaation with malaria episode in tow population in Eastern sudan.
• Hani Ishag. Supervisor Prof. Muntaser ELtayeb Tite. Immuno - Evasion and recrudeuces of .P Falciparum.
• Somaya Mohammed ElHassan. Supervisor Prof Maowia M. Mukhtar.
• Reem Badreldin Suilman. Supervisor Professor Ahmed Mohamed ElHassan.
• Nada Mamoon. Supervisor Professor Maowia Mohamed Mukhtar.
• Habab Musa Abdalla saad. Human conception disorders: an immunological disorder. Supervisor Prof. Eltahir A.G. Khalil
• Salma Mahoud Badri. Professor Eltahir Awad Gasim Khalil

**Awarded PhD Degrees by Reserach:**

• Eman Hussain Khalifa. Nasopharyngeal carcinoma associated Epstein Barr virus in Sudan Histological, serological, and Immunohistochemical study. PhD in Immunology. Professor Ahmed M. Elhassan
• Abbas Mohamed Ahmed. Local and systemic immune response to combined sheep pox and anthrax vaccine. Professor Moawia Mukhtar.
• Ahmed Mudawi Musa. Natural History of Sudanese PKDL Immuno- chemotherapy. Professor A.M. Elhassan/Professor Eltahir Awad Gasim Khalil.
• Anas Elmahbashi (Yemen). Supervisor Prof Moawia M. Mukhtar.
• Gamila Ibrahim Ahmed Gad Alla. Humoral immune response to P. falciparum antigens in population living in seasonal and unstable malaria transmission area (Eastern Sudan). Professor Musatafa Idris/Dr Ibrahim M. Elhassan.
• Hiba salah Mohamed. Genetic susceptibility to Kala-azar in Sudan. Prof. Muntaser E Ibrahim and JM Blackwell.
• Layla Ismail. Population genetics of Camelus dromedaries in Sudan. Professor Moawia Mukhtar.
• Misk Elyemen Abd Elatti. Supervisor Prof Moawia M. Mukhtar.
• Mohamed Haroun Ali. Analysis of the cellular and humoral immunity to Rinderpest virus. Supervisor Professor Moawia Mukhtar.
• Nahla Osman Mohamed Ali. Supervisor Muntaser E Ibrahim and J Mottram.
• Nawal Tagilser. Supervisor Prof. Muntaser Eltayeb Ibrahim, Co-supervisor Dr. Nageeb suliman.
• Nazar M Abdalla. Immunological and molecular studies on leishmaniasis in the Nuba Mountains. Supervisor Prof Muntaser E Ibrahim and M ELmagzoub.
• Sahar Mubarak Bakheit. Supervisor Prof Moawia M. Mukhtar.
• Victor L. Kuajock, Immunology and molecular biology of Mycobacterium (Nocardia) infection in cattle. Supervisor Professor Moawia Mukhtar.
• Waleed M Elamin. Supervisor Prof Moawia M. Mukhtar.
- Wigdan Ismail Evaluation of Humanitarian Aid to Internally Displaced Populations in Sudan: taking health care as an example PhD. Supervisor Professor Eltahir Awad Gasim Khalil.
- Mansour Mohamed Mansour. Humoral immune responses to malaria vaccine candidate Glutamote –Rich Protein (Ro, RI, RII) in inhabitants of Gezira state, Sudan. Supervisor Dr. Ibrrahim M. Elhassan. Sudan University of Science & Technology.
- Arwa Abbas. The role of viruses (HPV and EBV) in the etiology of cancer esophagus in Sudan. MD. Supervisor Prof. Ahmed M. Elhassan
- Hisham Youssif Hassan. Genetic patterns of Y chromosome and DNA variation with implications to the peopling of the Sudan. Supervisor Prof. Muntaser E. Ibrahim.
- Muzamil Mahdi Abdel Hamid. Development of the Plasmodium Knowlesi rhesus macaque model using the leading malaria vaccine candidate the Apical membrane antigen 1. Supervisors Prof Alan W Thomas, Dr Ibrahim Elhassan and Dr. Bart W. Faber.
- Fathia Adam. Supervisor Prof. Eltahir A.G. Khalil.
- Abbas Mohammed Ahmed. Supervisor Prof. Moawia M. Mukhtar.
- Dina M. Hassan. Supevisor Prof. Muntaser Eltayeb.
- Malik Hassan Ibrahim, Common Rh haplotypes among major Sudanese populations. Supervisor Prof Eltahir Awad Gasim Khalil.
• Nawal Tagelsir Mohamed The role of human and parasite population diversity in the development and spread of resistance towards anti-malarial drugs. Supervisor Dr. Najeeb S Saeed and Dr. Muntaser E. Ibrahim.
• Abdelgadir Hag Elagib: a molecular Study of rare Coagulation disorders. Supervisor Professor Eltahir Awad Gasim Khalil.
• Abier Elzein Genetic role of host in susceptibility to Malaria. Supervisor Dr. Muntaser Ibrahim.
• Ali Alamin Naser. Molecular characterization of P. falciparum in a highly malaria endemic area in Central Sudan. Supervisor Ibrahim M. Elhassa, Sudan University of Sciences & Technology.

**Master /Diploma Degree of Molecular Medicine by Courses:**

**Awarded Diplomas 2006-2007**
1- Salma Barakat Mohamed Modawi
2- Aurelio Manyang Kuat Ngot
3- Omer Mustafa Mohammed El Faki
4- Omer El Faroug Ahmed Mohammed
5- Intisar Siddig Mohammed Higazy
6- Rehab Mustafa Hassan Badi
7- Rehab Salah Eldin Mahmoud

**Awarded Diploma 2008-2009**
1- Azhari Fadul Eltoum
2- Mohammed Farah Hassan Adm

**Awarded Master Degree 2006-2008**
1- Afrah Elmalih Almobark Ahmed
2- Ashraf Mohammed Higazi Hassan
3- Ayman Abdullah Hussein Mohammed
4- Bakhieta Attalla Ibrahim Attalla
5- Elias Fomunyam Onyoh
6- Enaam Hussein Mohammed Ahmed Ali
7- Enas Mustaf Ibrahim Malik
8- Hafi Anwer Mohamed Ahmed Saad
9- Hagir Mohamed Ahmed Elsheikh
10- Hassan Zackaria Ali Ishag
11- Hiba Yassin Yousif Mohammed Salih
12- Kenneth Llado Lino Sube
13- Liena Elbaghir Omer ElSayed
14- MagdEldin Abdelhafiz Abdelhabib Elgizouli
15- Mayada Mustaf Ahmed El Fadol
16- Mansour Mohamed 0mer
17- Nazar Gafar Abdul Rhaman
18- Salma Mahmoud Yousif Mohamed
19- Sami Ahmed Mohammed Ali
20- Sulafa Bannaga Elsheikh Hajo

**Current Master students 2008-2010**

1. Asmaa Hassan Saad
2. Ashraf Osman Alawad
3. Ahmed Farouk Ahmed
4. Azza El- Shafie Khidir
5. Bashir Al-Sidig Yousef
6. Dalia Ahmed
7. Ilham Abdallah Elbushra
8. Mohammed Abdulkader
9. Mohanad Alhafiz Abdella
10. Musab Mohammed Ali
11. Nadia Hassan Mohamed
12. Omar Abdulmuneim
13. Randa Ali Nimeri
14. Safia Ghaneim Elsheikh
15. Sarrah Elnour Khalifa
16. Sara Ibrahim
17. Sara Mohammad Abuelgasim
18. Sheeren Alsaid Ismael
19. Safaa Othman Hassan
20. Tasnim Omer Elsammani
21. Walaa Abdullah Ome
Research Facilities

Bazoura, Kassab, Professor Elhassan Centre (Dooka) and Um Elkheir Field Stations:

The Institute has two well established & fully equipped research and primary health care facilities in remote areas of the Eastern Province (600 Km southeast of Khartoum. The Leishmania Research group/Sudan (LRG/Sudan) has been working for the last 14 years. The facilities were built by the community in Bazoura, Kassab and Dooka towns and surrounding villages with generous contribution from DNDi/Geneva. There is close collaboration with the State Ministry of Health, Gedarif State, Primary Health Care Program, and Federal Ministry of Health. The centres are run as service to the community, a field research station for the Institute and a training facility for graduate and undergraduate students.

Research equipments

I. Cell and tissue cultures:
1. Lamina Flow Hood (4)
2. Refrigerated centrifuge (2)
3. Microcentrifuge (8)
4. CO\textsubscript{2} incubator (5)
5. Cooled incubater (4)
6. Electric -pipette (6)
7. Micro-pipette (30)
8. Inverted microscopes (3)
9. Liquid Nitrogen storage containers. (4)
10. Freezers and Refrigerators. (16)

II. Protein Electrophoresis:
1. SDS Page mini-gels. (5)
2. Protein blotting for mini-gel. (2)
3. Light trans-illuminator. (4)
III. Enzyme Linked Immuno-Sorbent Assay (ELISA):
1. ELISA reader and ELISA plates washer. (4)
2. Autoclaves. (5)

IV. Polymerase Chain Reaction (PCR):
1. PCR machines. (12)
2. DNA agarose submarine gel apparatus. (6)
3. Ultra violet light electrophoresis transilluminator. (3)
4. Biophotometer. (1)
5. Hybridiser. (1)
7- Real time PCR machine (1)
8- Nanodrop (1)
9- Phosphoimager (1)

V. DNA sequencing:
1. DNA manual sequencing apparatus. (1)
2. Automated squencer (1)

VI. Internet access facilities:
The Insitute through grant from WHO has established a full 24 hours access to the internet, which is provided free for the staff and students of the Institute.

Visiting Staff:

- Professor EE Zijlstra, Faculty of Medicine, University of Malawi, McIntyre. Malawi.
- Professor J. Blackwell And Dr. Chris Peacock.Cambridge University, UK Collaborating on Immunogenetics of Leishmaniasis,. Counte part: Pr. Muntaser E. Ibrahim and Dr. Hiba Salah-Eldin Mohamed
• Professor Ib Bygbjerg Public Health Institute of Endemic Diseases University of Copenhagen, Visit May 2000, Collaboration on displacement health studies. Counter part: Professor A. M. Elhassan.
• Professor Mohamed haj Hassan and Dr. Rik de Swart. Third World Academy, Trieste, Italy.
• Dr. Faroukh Modabber, Tehran, Iran; DNDi? Geneva.
• Professor Peter G. Smith London School of Hygiene & Tropical Medicine. London, U.K.
• Professor Abdel Quum Babikir, London, U.K.
• Professor Thor Theader; University of Copenhagen, Denmark. Dr. Douglass Barker, Cambridge University UK, Visit in February 2000, Collaboration on Leishmania Research.

Plans for Next Five Years:

• Development of more specialized laboratories for Genetic transfection, mutation induction and nucleic acid analysis including automated sequencing.
• Creation of a Bioinformatic Unit.
• Strengthening the Biostatistic Unit in the Department of Epidemiology and Clinical Studies.
• Increase the number of trained staff by 100%
• Extend the available facilities.
• Establishment of a vaccinology Clinical Trials Units.
• Advanced immunology, Malaria and Leishmania immunology.
• Regular: Ethics in Health research, GCP courses.

Current difficulties:

• The availability of the physical space needed for the extension of the facilities. Building of the another floor is needed to accommodate the planned extension.
• The diminished National support for the Institute services and programmes to remote communities.
Publications:

2010


2009:


polymorphisms and development of post Kala-azar dermal leishmaniasis (PKDL) in a selected Sudanese population. Public Health Genomics.[Epub ahead of print]


2008:


Public Library of Science Plos v 2 issue 6 1-4


Homologous housekeeping proteins in Nocardia--the NoDaMS proteomic database.


35. Maowia M. Mukhtar,, E.M. Elamin; Sahar M. Bakhiet; and Musa M. Kheir. 2008. Accepted EMRO First report on Leishmania major/HIV coinfection in a Sudanese patient.


41. Hassan MM; Elamin EM and Mukhtar Isolation and identification of Leishmania donovani from Phlebotomus orientalis, in an area of eastern Sudan with endemic visceral leishmaniasis. MM. Ann Trop Med Parasitol. 2008 Sep;102(6):553-5

2007


54. Abbas M. Ahmed; M.M. Mukhtar; A.M. Elhussien; T. A.M. Nour; and M.A. Fadul Combined anthrax and sheep pox vaccine: produciotn and immunization trail in Sudan. *Journal of animals and veterinary advances.* 2007; 6(4); 517-521.


59. Yousif NM; Musa AM; El-Hassan AM; Khalil EAG & Elhassan IM. (2007). Anti-Glucose-Regulated Protein 78 (GRP78) antibody response in Alum/ALM plus BCG vaccine, visceral leishmaniasis and Post Kala-azar Dermal Leishmaniasis patients. Sudan Journal of Medical Sciences (Sudan JMS); 2(3):175-178.

2006:
65. Anne-Louise Leutenegger; Mustafa A. Salih; Pablo Ibanez; Maowia M. Mukhtar; et al Juvenile-onset Parkinsonism as a result of the first mutation in the adenosine triphosate orientation domain of PINK1.. 2006.. Arch. Neurol. 2006; 63:1257-1261.


2005:


2004:


83. Mohamed HS, Ibrahim ME Miller EN, White JK, Cordell HJ, Howson JM, Peacock CS, Khalil EAG, El Hassan AM & Blackwell JM (2004). SLCIIAI (formally NRAMP) and susceptibility to Visceral leishmaniasis ine the Sudan European Journal


2003:


2002:


2001


2000:


history of human populations. Nature Genet. 26:358-361

1999:

1998:


1997:


1996:


1995:
94. Ahmed AI, Gadir AFA, Hashim FA, El kadaro AY, Zijlstra EE & El Hassan AM.


1994:


1993:


1992:


Books:


Translations: M E Ibrahim: The Great Human Diasporas, The history of human genetic diversity and evolution, By LL.Cavalli-Sforza (to Arabic)


Professor Elhassan Centre for Tropical Diseases, Dooka, Gedarif State, Sudan