



Enaam Hussein, Ph.D., M.Sc., B.Sc. (hon.)

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First name: Enaam
Gender: Female

Last Names: Hussein Mohammed Ahmed Ali
Date of birth: 25.11.1976 Marital status: married

Key academic qualifications:

Jan. 2013 – Feb. 2016

Ph.D. degree in Biochemistry, Molecular biology and Biotechnology, University of Ferrara, Ferrara, Italy.

Ph.D. thesis entitled “A novel nanoparticle-mediated delivery of microRNA in a Chronic Lymphocytic Leukemia mouse model: identification of miR-26a as a potential therapeutic agent”, supervised by Dr. Silvia Sabbioni and Dr. Massimo Negrini.

July 2007 – Jan. 2009

M.Sc. in Molecular Medicine (courses plus Dissertation),
Institute of Endemic Diseases, University of Khartoum,
Khartoum, Sudan.

M.Sc. thesis entitled “Epstein Barr-virus Expression in Hodgkin’s Lymphoma in Sudan”. supervised by Emeritus professor of pathology, Ahmed Mohamed El Hassan and Dr. Sahar Bakhet.

1996 – 2001

B.Sc. First class honours degree in Haematology and Immunohaematology, Faculty of Medical Laboratory Sciences (FMLS), University of Khartoum, Khartoum, Sudan.

Thesis entitled "Platelets and coagulation defects in Sudanese patients with Chronic Renal Failure Undergoing Dialysis, supervised by Dr. Anwar Kordofani and Dr. Selma M. Suleman.

Awards and academic prizes:

2000 The prize of the University of Khartoum for the best academic performance in Haematology and Immunohaematology (4th year), FMLS, University of Khartoum.

2001 The prize of the University of Khartoum for the best academic performance during for the Bachelor degree (5th year) in Haematology and Immunohaematology, FMLS, University of Khartoum.

2018 Awarded the European Haematology Association scholarship for the The Highlights of Past European Haematology Association (EHA) - HOPE Cairo, Cairo, Egypt.

Teaching and administrative Experience:

Nov. 2019 to date Vice-Dean for academic Affairs, Faculty of Medical Laboratory Sciences, University of Khartoum, Khartoum, Sudan.

Octo. 2017 to date Research Lab. Manager, The Biomedical Research Laboratory, Faculty of Medical Laboratory Sciences, University of Khartoum, Sudan.

June 2018 to Nov. 2019 Head Department, Haematology & Immunohaemaology Department, Faculty of Medical Laboratory Sciences, University of Khartoum, Khartoum, Sudan.

July 2016 to date Assistant Professor, Department of Haematology & Immunohematology, Faculty of Medical Laboratory Sciences, University of Khartoum, Khartoum, Sudan.

August 2017 to Oct.2019 Assistant Professor (Joint Job), Department of Haematology & Immunohematology, National University, Khartoum, Sudan.

Feb. 2009 – Jan. 2013 Lecturer, Haematology & Immunohaematology Department, Faculty of Medical Laboratory Sciences, University of Khartoum, Sudan.

March.2003 – Dec. 2008 Teaching assistant, Haematology & Immunohaematology Department, University of Khartoum, Sudan.

June 2010 – Sep 2010 Part-time lecturer, Molecular Medicine course, Faculty of Medicine, Sudan International University, Khartoum, Sudan.

Sep. 2009 – Oct. 2012	Part-time lecturer, Haematology & Immunohaematology Department, National University for Medical Technical studies, Khartoum, Sudan.
April 2009 – May 2012	Part-time lecturer, Haematology & Immunohaematology Department, Nile College, Khartoum, Sudan.

Proficiency qualifications:

21 April- 5 th May 2019	NLP (Neurolinguistics programming) practitioner, at Sabri Abugroon Training Center (STC), instructed by Mohamed Almujtaba Elzuber for 80 contact hours. License No. 1549, Reg.cer., No. 96628, certificate number: 10968., Khartoum, Sudan.
8 th - 20 Oct. 2018	A certificate of Professional Adminstrative Leader “ minimaster programme of 80 credit hours” at ALTHURAYA Training and Human Development Center, Khartoum, Sudan, by Master Coach Eng. Omer Gorafy.
Nov.2018	Workshop on KAIZEN Japanese Quality system at ALTHURAYA Training and Human Development Center, Khartoum, Sudan, by Master Coach Eng. Omer Gorafy.
May, 2018	Workshop on Training of Trainers, at ALTHURAYA Training and Human Development Center, Khartoum, Sudan, by Master Coach Eng. Omer Gorafy.
April, 2012	Awarded the Certificate of Specialists Registration (No. 04010100), from Sudanese National Council for Medical and Health Professions, Khartoum, Sudan.
Dec., 2011	Full registered (No. 04010100), at The Sudanese National Council for Medical and Health Professions, Khartoum, Sudan.

Other Professional work experience:

Sep.2003 – Oct.2013 Medical Laboratory Specialist	I worked as a Medical Laboratory Specialist at several Hospitals and Medical Health centers at Khartoum, Sudan, including Dar AL Elaj Specialized Hospital, Alboshra Health centre, Medicare Medical Center, Prof. Elnema Medical Laboratory and Sant Mary Hospital, Khartoum, Sudan. The main responsibility was the performance of different medical laboratory tests for in and out patients. Tests include routine lab. investigation besides the special techniques of haematological and coagulation disorders.
2016-2018	As a part of my contribution in the Biomedical Research

workshop Organizer	Laboratory, at FMLS, University of Khartoum, I have organized some workshops at FMLS, University of Khartoum, includes, "Modern Immunological techniques applied in Disease" and "Introduction to Bioinformatics and Genomics".
External and internal examiner	I have been an external examiner for student's graduation projects of haematology specialty at Nile College- Medical Laboratory Sciences for two years, 2017 and 2018 and as an internal examiner for the graduate student's projects of microbiology specialty at National University, Khartoum, Sudan.
Supervisor for Student's research work	Supervision of under-graduate students for their mini-projects for the fulfillment of the B.Sc. honor's degree as well as research of M.Sc. and Ph.D. in Hematology & Immunohematology, Faculty of Medical Laboratory Sciences, University of Khartoum and National University.

Training Courses and Workshops:

November, 2019	Introduction to Bioinformatics (IBT), by H3ABioNet, Pan African Bioinformatics Network for H3Africa, included 92 contact hours' in total, UUID:201920004, organized by H3ABioNet, South Africa.
September 27-29, 2018	The Highlights of Past European Haematology Association (EHA) - HOPE Cairo 2018, under the scientific direction of Sonneveld P, Gribben J, Qari M, Mattar M, El-Beshlawy A & Kamel A., Cairo, Egypt.
April 28-29, 2018	The 2 nd Scientific conference: Multidisciplinary Research for Community Development, National University Research Institute, Khartoum, Sudan.
March 25-29, 2018	Biostatistics and Data Handling using SPSS Workshop, Faculty of Medical Laboratory Sciences, University of Khartoum, Sudan.
Feb.13-15, 2018	Modern Immunological Techniques Applied in Disease, Faculty of Medical Laboratory Sciences, University of Khartoum, in Collaboration with Rayan Centre for Medical Training, Khartoum, Sudan.
Nov. 20-28, 2017	Introduction to Bioinformatics and Genomics, Faculty of Medical Laboratory Sciences, University of Khartoum in

collaboration with Africa City of Technology, Khartoum, Sudan.

Dec. 28, 2017	A day on Proteomics Concepts and Application, Dr. Emad Konozy, Africa City of Technology, The Republic of Sudan, Khartoum Bahri, Sudan.
July 19-20, 2017	Genome Editing using CRISPR Technology and Bioinformatics Tools, Dr. Mohammed Alkhair, Monitor Integrated Solutions Training Center (MIS), Khartoum, Sudan.
June 26 – 30, 2017	Genetic Association course at the Max Delbrück Center for Molecular Medicine. The course is offered through a collaboration between The Baylor College of Medicine, Houston, Texas, USA, and Max Delbrück Center for Molecular Medicine, Berlin, Germany.
July 14, 2015	Infrafrontier - mouse models of human diseases - production, cryopreservation and phenotyping, University of Ferrara, Ferrara, Italy.
July 1 -3, 2015	Annual Meeting entitled "From Genomes to Function", Italian Society of biophysics and Molecular Biology (Società Italiana di Biofisica e Biologia Molecolare (SIBBM) at the Molecular Biotechnology centre, University of Turin, Turin, Italy.
Sep.11-13, 2014	The 56 th Annual meeting of the Italian cancer society. Dangerous Liasons: translating cancer biology into better patient's management, Ferrara, Italy.
May 27-29, 2014	Animal experiments: Treatment of animals used for experiments: Ethical and Legal Aspects, Security, Best practices, University of Ferrara, Italy.
Sep. 16-17, 2013	Conference entitled "MicroRNA: from basic research to therapeutic applications", Ferrara, Italy.
Nov. 22, 29 & Dec 13, 2012	Workshop on Scientific Writing and Publications (4 credit hours), Centre for Professional Development, National College for Medical and Technical Studies, Khartoum, Sudan.
June 5 -11, 2012	Workshop on Bioinformatics and MicroRNA technology, Mass International Academy (English Family

Communication Programme), Sudan National Federation of UNESCO Club, Khartoum, Sudan.

June 3 – 11, 2012

Advanced course on Molecular Haematology Medical Research and Diagnosis. Tropical Medicine Research Institute, National Centre for Research, National Health Laboratory, Khartoum, Sudan.

April 22- 23, 2012

Workshop on Lymph nodes and bone marrow pathology. Organized by the Arab School of pathology and Sudanese association of pathologists. Omdurman Hospital, Omdurman, Sudan.

Jan. 2 -25, 2012

Theoretical and practical advanced course on Flowcytometry (Maintenance, quality control and data handling) at Al- Neelain Medical Research Centre, Faculty of Medicine and Health Sciences, Al-Neelain University, Khartoum, Sudan.

July 19 – 30, 2009

Protein chemistry workshop: For high yield applied technologies (HYAT) organized by Africa City of Technology in collaboration with Ministry of Science and Technology, and Central Laboratory in Soba, Khartoum, Sudan.

Jan. 19 – 24, 2008

“Molecular Medicine and Genomics in Africa” organized by International Centre for Genetic Engineering and Biotechnology (ICGEB) in collaboration with the Institute of Endemic Diseases, Khartoum, Sudan.

Nov. 21 – 22, 2005

Workshop on serological and molecular typing of Human Leukocytes Antigens (HLA) tissue typing (HLA typing) using HLA-Ready Plate and HLA- Ready Gene at “innTRAIN” company, Frankfurt, Germany.

Oral and Poster Presentations

September 27-29, 2018

Presented a poster at the Highlights of Past European Haematology Association (EHA) - HOPE Cairo 2018. Under the scientific direction of Sonneveld P, Gribben J, Qari M, Mattar M, El-Beshlawy A & Kamel A, Cairo, Egypt.

Jan 17 – 18, 2009

Oral presentation: Epstein Barr-virus expressions in Hodgkin’s lymphoma in Sudan, The conference of young

Feb. 25 -27, 2011

researchers of the Institute of Endemic Diseases (IEND), Khartoum, Sudan.

Poster presentation: Epstein - Barr virus expression in Hodgkin's lymphoma in Sudan, The annual international conference, Sudan.

Language Proficiency:

Language	Speaking	Reading	Writing
Arabic	Mother tongue		
*English	Very good	Very good	Very good
Italian	Good	Good	Good

*First Certificate of English was obtained in Dec.2014 (FCE), **Cambridge English, University of Cambridge**.

Topics that I taught for B.Sc. (hon.) and M.Sc. students.:

- Anaemia, signs, classification, causes, pathogenesis and diagnosis, etc.
- Leukaemia, signs, classification, causes, pathogenesis and diagnosis, etc.
- Lymphoproliferative disorders (lymphoma and plasma cell disorders)
- Myelodysplastic syndrome.
- Myeloproliferative neoplasms (polycythaemia, myelofibrosis, essential thrombocythaemia and chronic myeloid leukaemia).
- Normal haemostasis
- Coagulation defects, platelets qualitative and quantitative disorders, etc..
- Immunohaematology (ABO and Rhesus system, HDN,...)
- Flowcytometry and its applications in haematologic disorders (acute leukaemia, CLL, etc.).
- Cytogenetics and FISH technique
- Molecular biology (central dogma - gene expression, mutations, DNA repair,etc)
- Molecular biology techniques and recombinant DNA technology (Cloning).
- Advanced techniques in haematology
- Immunophenotyping and flow cytometry
- Others.

Area of research interest

My research interest is on haematological disorders, in particular, leukaemia. I am so interested in the role of microRNAs in the molecular mechanism to develop lymphoma and leukaemia. I also have an interest in autoimmune diseases, in particular, Systemic lupus Erythematosus (SLE).

Previous research experience: -

- Dealing with different sampling techniques; blood, cell lines and tissue samples either fresh or Formalin fixed Paraffin embedded.
- Transfection of different cell lines using lipofectamins and Neon electroporation transfection system.
- Analysis and results interpretation of different functional assays including, cell viability and cell count, Annexin v and dead cell assay, cell cycle assay, using Muse instrument from Millipore company.
- Dealing with primary murine Chronic Lymphocytic Leukemia (CLL) cells and cell lines of both suspended and adherent cells (B cell lines and Hepatocellular carcinoma cell lines).
- Recombinant DNA technology, capability of producing stable clones.
- Preparation of co-culture condition that may mimic the Microenvironment of chronic lymphocytic leukaemia, used for drug screening.
- Nucleic acids extraction: DNA & RNA Extraction, protein purification and immune-blotting techniques (blood, cell lines, and tissues).
- Basic and advanced molecular biology techniques (conventional PCR, RT-PCR, Real time-qPCR, digital PCR (ddPCR)).
- Data analysis using Microsoft Excel and GraphPad prism 6.
- Endnote x7 and Mendeley softwares for writing and reference citation and Docear software of mind mapping and reference citation.

List of Publications:

- **Methylation of the suppressor of Cytokine Signaling 1 Gene (SOCS1) in Philadelphia negative myeloproliferative neoplasms.** E.B. YASIN1, R. ALSERIHI2, H. ALKHATABI2,4,5, H.M.H. QUTOB1, R. QAHWAJI2, S.W. KATTAN3, K.A. GHOLAM6, E. HUSSEIN7, A.S. BAREFAH4,8, M.E. ALGHUTHAMI9, A. ABUZENADAH, *European Review for Medical and Pharmacological Sciences*, 2022; 26: 8451-8458.
- **Measurement of Platelet Parameters and D-Dimer Level in Sudanese Patients with Long Standing Diabetes Mellitus Type 2.** Amna Elbadri Yassin Elbadri1, Islam Hussain Mohammed Abdulhafeez1, Namarig Alawad Omer Ali1, Shiraz Osman Abdallah Osman1, Tamador Yassen Hamed Mohammed1, Mosab Nouraldein Mohammed Hamad2,3, **Enaam Hussein Mohammed Ahmed Ali1**, Alaa Ibrahim and Ahmed Abdulhafeez Nimir. *EC Endocrinology and Metabolic Research* 4.3 (2020): 01-13.
- **The Influence of Glutathione-S-Transferase M1 (GSTM1) Null Polymorphism in Acute Leukemia in Sudanese.** Alaa Atef Hamid Yasin, Elfirdous Salah El-deen Ahmed Abdallah, Halima Ali Ibrahim Ali, Romisa Abd-Algadir Mohammed Ahmed Mohamed, Romisa Kamal Ahmed Alrehema, Mosab Nouraldein Mohammed Hamad and **Enaam Hussein Mohammed Ahmed Ali***. *EC Endocrinology and Metabolic Research* 5.2 (2020): 01-10.

- **ABO and Rhesus Grouping among Sudanese Patients with Coronary Artery Disease at Sudan Heart Center- Khartoum State.** Areeg A El-Amin1, Haneen M Hassan1, Ruba IH Alkheder1, Maram H Al-tyeb1, Ahmad A Bushra1, Mosab Nouraldein Mohammed Hamad2 and **Enaam Hussein Mohammed Ahmed Ali**, EC Emergency Medicine and Critical Care 4.1 (2020): 01-12.
- **Anti-leukemic activity of microRNA-26a in a chronic lymphocytic leukemia mouse model.** LD 'Abundo, E Callegari1, A Bresin, A Chillemi, BK Elamin, P Guerriero1, X Huang, E Saccenti, **EMAA Hussein**, F Casciano, P Secchiero, G Zauli1, GA Calin, G Russo, LJ Lee, CM Croce, G Marcucci, S Sabbioni, F Malavasi, and M Negrini. **Nature communication**. Oncogene advance online publication, 7 August 2017; doi:10.1038/onc.2017.269 (www.nature.com/onc).
<https://www.ncbi.nlm.nih.gov/pubmed/?term=Anti-leukemic+activity+of+microRNA-26a>
- **Immunophenotypic Features of T Cell- Acute Lymphoblastic Leukemia in Sudan.** Jadallah A. Ebrahim, Abanoub A. Tanious, Ahmed G. Mirgani, Esmail T. Almahdi, Khabbab. Elshareef, Eltayeb A. Abd Elgadir, **Enaam M.A.A. Hussein**, Osama Altayeb and Eman Abbass. European Journal of Biomedical and Pharmaceutical sciences (ejbps), 2017, Volume 4, Issue 7, 22-28.
http://www.ejbps.com/ejbps/abstract_id/2665
- **Epstein - Barr virus expression in Hodgkin's lymphoma in Sudanese patients.** **Enaam Hussein**, Ahmed Mohamed EL Hassan and Sahar Mubarak Bakhet. The abstract was published in the Abstract Book and the Journal of European Haematology Association (an official supplement of HemaSphere, the official EHA Journal), the Mobile App of the 23rd Congress of EHA, and on the EHA Learning Center. Submission ID: **EHA-2807**, Topic: Hodgkin lymphoma – Biology & Translational Research, Final Abstract Code: PB1995 **Hodgkin lymphoma – Biology & Translational Research**.

https://learningcenter.ehaweb.org/eha/2018/stockholm/216590/enaam.hussein.epstein.-barr.virus.expression.in.hodgkins.lymphoma.in.sudan.html?f=menu=6*ce_id=1346*ot_id=19057*media=3*marker=168.

Un-published work:

- Microenvironment in CLL: CD40L fibroblasts enhances cell proliferation and increase cell viability of isolated splenocytes from Chronic Lymphocytic Leukemia mouse model. **Enaam M.A.A. Hussein** and Massimo Negrini.
- The influence of Glutathione-S-transferase M1 (GSTM1) Null polymorphism in Acute Leukemia in Sudanese. By Alaa Atef Hamid Yasin, Elfirdous Salah El-deen Ahmed Abdallah, Halima Ali Ibrahim Ali, Romisa Abd-Algadir Mohammed Ahmed Mohamed, Romisa Kamal Ahmed Alrehema and **Enaam Hussein**.
- Evaluation of Smoking Effect on Haematological Parameters, Iron Status and Coagulation Profile among Smoker Students at National University-Sudan. By Asma

Salih Abakr Idres, Bha Aldin Aldaw Ali Mohamed, Fouad AbdoAlmutal Rahma Alhassan, Hisham Ahmed Alsubki Alhassan, Lujain Abdallah Mohamed Mohamed Alnoor, Mohammed Meirgany Salih Ali, Murtada Kamal Aldin Mohamed Yassen, Nora Mohamed Ali Salih Mohamed Ali, Suaad Abu Talib Alsheikh and Enaam Hussein.

Ongoing work (M. Sc. or Ph.D. Students under my supervision):

- Glutathione Theta-1 gene polymorphism among a selected group of Sudanese Patients with Acute Leukemia. By Baraa Altahir Hassan, Bint Elmina Faisal Adam, Ethar Ahmed Alteab, Israa Abdalla Mohamed Ahmed, Maab Mohammed Elzaki (B.Sc.)
- Frequency and prognostic impact of IDH2 mutation among selected group of Sudanese patients with Acute Myeloid leukaemia at Khartoum state in 2018. By Alaa Sharif Adam, Malaz Elzaki Hassan, Morooj Jamal Ahmed, Nuran Omer Abdalla, Rufida Abdalla Abbas and Salma Omer Khalafalla (M.Sc.).
- Evaluation of the of Tumor Necrosis factor-alpha level On Pancytopenia among Patients with Acute Leukaemia at Khartoum State. By Tuga Hassan Haj Hamad (M.Sc.).
- A study on complement 4 Gene and complement serum level among Sudanese Female Patients with Systemic lupus erythematosus. By M.N. Ahmed, E.A. Ekhlas, E.A. Elsideeg, A.M. Esraa, M.J. Faiza, J.M. Missa (M.Sc.).
- Genetic prediction of prognosis in childhood acute lymphoblastic leukemia (ALL) by Elhadi Ali Yahya Osman (PhD).
- Epidemiological and molecular study of Sickle Cell Anemia in Kordofan States in Sudan. by Mansour Mohamed Omer El-Sharief (Ph.D. degree obtained recently).

Additional skills and experience:

- Supervision of the under-graduate students of hematology specialty, during in-service training at some hospitals and research centers in Khartoum, Sudan.
- Supervision of post-graduate students (M.Sc. and Ph.D.) for their research work and thesis writing.
- Communication and networking word processing (Microsoft Word), PowerPoint and statistical software – Excel, Graph-Pad Prism data analysis program.
- Experience in research design including: data and samples collection methods, diagnostic laboratory tests, data analysis (statistical software) and thesis writing.

Professional Memberships:

- Nov.2018 to present: Member of the European Research Initiative on CLL (**ERIC**).
- 2009–Present: Member of Faculty Board, Faculty of Medical Laboratory Sciences, University of Khartoum, Sudan.
- 2009 –Present: Member of African Society of Human Genetics (ASHG).
- 2007–Present: Member of the Sudanese Union for Medical Technologists.
- 2006–Present: Member of the Sudanese Society of Clinical Biology.

References:

Prof. A M EL Hassan

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 Institute of Endemic Diseases
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 Head Department of pathology
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