

Email: marcozaki@mu.edu.eg , Zaki.marco@mayo.edu  
phone: (+2) 01205040144

# Marco Y.W. Zaki

*Ph.D. awarded researcher with a strong track record of high-impact publications, presentations, and collaborations in chronic diseases and cancer biology. Expert in leveraging in-depth knowledge and experience in biology and biochemistry to provide relevant information and first-hand experiences.*

## Skills

### *Molecular biology:*

Western blotting	<div></div>
IHC, IF, ICC stains	<div></div>
Real time PCR	<div></div>
ELISA	<div></div>
Genetic manipulation	<div></div>
Cloning	<div></div>
Antibody purification	<div></div>

### *Cell-based assays*

2D co-culture	<div></div>
3D tumour spheroids	<div></div>

### *In vivo models*

Animal handling	<div></div>
Tissue processing	<div></div>
Primary cell isolation	<div></div>

### *Mechanistic assays*

### *Functional assays*

### *Bioinformatics*

IPA software	<div></div>
GSEA software	<div></div>

### *Academic:*

Classroom management	<div></div>
Academic writing	<div></div>
Online lecturing	<div></div>
Lecture planning	<div></div>

## Work Experience

### **Lecturer, Biochemistry and Cell Biology (Mar 2020 - Present)**

Faculty of Pharmacy, Minia University, Egypt.

### **International Cooperation Coordinator (Feb 2023 - Present)**

Deraya University, New Minia, Egypt.

### **Research Collaborator (Dec 2023-Present).**

Mayo Clinic, Rochester, Minnesota, USA.

### **Founder and Director of Newton Interdisciplinary Laboratory for Elucidating Chronic and Non-Communicable Diseases (NILE CAN) (Oct 2023- Present)**

Faculty of Pharmacy, Minia University, Egypt.

### **Director, Centre for Research and Sustainability (CRS) (Oct 2023-Present)**

Deraya University, New Minia, Egypt.

### **International Liver Cancer Association (ILCA) Research Fellow (Jan 2023 - Present)**

Mayo Clinic, USA and Minia University, Egypt.

### **Newton Research Fellow (Sep 2021 - Dec 2022)**

University of Birmingham, UK and Minia University, Egypt.

### **Guest Researcher (Jan 2020 - Dec 2020)**

Faculty of Medical Sciences, Newcastle University, UK.

### **Teaching assistant, Biochemistry (2010-2015)**

Faculty of Pharmacy, Minia University, Egypt.

## Education

### **2020 Ph.D. in Medical sciences**

- Newcastle cancer institute, Newcastle University, UK.
- **Title:** The liver microenvironment- a driver of Hepatocellular carcinoma.
- **Supervisors:** Helen Reeves, Fiona Oakley, John Lunec, Dina Tiniakos.

### **2014 Master of science in Biochemistry**

- Biochemistry department, Faculty of Pharmacy, Minia University, Egypt.
- **Title:** Investigation of possible changes of HDGF expression in hepato-carcinogenic mouse model.
- **Supervisors:** Mekky Abouzeid, Nabil M. Abdel-Hamid.

### **2009 Bachelor's degree in pharmaceutical sciences**

- Faculty of Pharmacy, Minia University, Egypt.

# Publications

*Eldafashi, N et.al.* The protective role of two oxindole derivatives is mediated by modulating NLRP3/caspase-1 and PI3K/AKT pathways in a preclinical animal model of hepatic ischemia reperfusion injury. Life Sciences, 2024.

*Armandi, A et.al.* Serum ferritin levels can predict long-term outcomes in patients with metabolic dysfunction-associated steatotic liver disease. GUT, 2024

*Wilkinson, A et.al.* The senescent secretome drives PLVAP expression in cultured human hepatic endothelial cells to promote monocyte transmigration. iScience, 2023.

*Zaki, MYW.et al.* Sulfatase-2 from cancer associated fibroblasts – an environmental target for hepatocellular carcinoma? Liver cancer, 2022.

*Gee LMV et.al.* Anti-Cholestatic Therapy with Obeticholic Acid Improves Short-Term Memory in Bile Duct Ligated Mice. The American Journal of Pathology, 2022.

*Laslie J. et.al.* c-Rel-dependent Chk2 signaling regulates the DNA damage response limiting hepatocarcinogenesis. Hepatology, 2022.

*Attia EZ et.al.* Potential topoisomerases inhibitors from *Asergillus terreus* using virtual screening. South African Journal of Botany, 2022.

*Zaki, MYW. et al.* Innate and Adaptive Immunopathogenesis in Viral Hepatitis; Crucial Determinants of Hepatocellular Carcinoma, Cancers, 2022.

*Younes, R. et al.* Caucasian lean subjects with non-alcoholic fatty liver disease share long-term prognosis of non-lean: time for reappraisal of BMI-driven approach? Gut 2022.

*Zaki, MYW. et al.* Key features of the environment promoting liver cancer in the absence of cirrhosis, Scientific reports, 2021.

*Zaki, MYW. et al.* A Three-Dimensional Spheroid Model to Investigate the Tumor-Stromal Interaction in Hepatocellular Carcinoma, Journal of visualised experiments, 2021.

*Younes, R. et al.* Long-term outcomes and predictive ability of non-invasive scoring systems in patients with non-alcoholic fatty liver disease. Journal of Hepatology, 2021.

*Eldafashi, N. et al.* A pcd1 role in the genetic predisposition to NAFLD-HCC? Cancers 2021.

*Esparza-Baquer, A. et al.* TREM2 defends the liver against hepatocellular carcinoma through multifactorial protective mechanisms. GUT, 2021.

*Laslie J et al.* c-Rel orchestrates energy-dependent epithelial and macrophage reprogramming in fibrosis. Nature Metabolism 2020.

*Younes, M. et al.* Presence of Serum Antinuclear Antibodies Does Not Impact Long-Term Outcomes in Non-alcoholic Fatty Liver Disease. American Journal of Gastroenterology, 2020.

*Worrell, J et al.* cRel Expression Regulates Distinct Transcriptional and Functional Profiles Driving Fibroblast Matrix Production in Systemic Sclerosis. Rheumatology, 2020.

*Moran-Salvador, E et al.* MeCP2 regulates the myofibroblast RNA landscape and its fibrogenic activity is controlled by site-specific phosphorylation. Gastroenterology, 2019.

*Paish, H. et al.* A novel bioreactor technology for modelling fibrosis in human and rodent precision-cut liver slices. Hepatology, 2019.

**Zaki, M.Y.W** and Reeves, H. Long intergenic non-coding RNAs in hepatocellular carcinoma – a focus on Linc00176. Non-coding RNA Investigation, 2018.

Reeves H, **Zaki MYW**, Day CP. Hepatocellular Carcinoma in Obesity, Type 2 Diabetes, and NAFLD. Digestive Diseases and Sciences. 2016.

# Prizes

**Newton prize 2020 (200,000 £)**

To recognise the excellent research supported by Newton fund.

**ILCA Africa fellowship 2022 (40,000 €)**

To support the discovery of novel therapeutic targets and biomarkers for liver cancer.

# Awards

2024 **Travel award**, oral talk, AHPBCC annual meeting, Mombasa, Kenya.

2022 **Travel award**, oral talk, AHPBCC annual meeting, Cairo, Egypt.

2019 **Young investigator award**, oral presentation, EASL-HCC summit, Lisbon, Portugal.

2018 **Young investigator award**, oral presentation, EASL-ILC, Paris, France.

2017 **Travel award**, poster presentation, AASLD meeting, Washington, USA.

2017 **Young investigator award**, oral presentation, EASL-HCC summit, Geneva, Switzerland.

# Accomplishment

**UK Alumni 2022 award finalist**

Science and Sustainability Award

# Publications

Zaki, MYW and Reeves, H. The genetic heterogeneity of hepatocellular carcinoma and the implications for personalised medicine. Translational Cancer Research. 2016.

# Conferences

## Conference organisation

Conference organisation committee for the first Africa Hepatopancreatobiliary cancer consortium (AHPBC) scientific conference, Egypt, August 2022.

## Invited oral talks

- New Basic Science Approach for The Study of Liver Cancer Development and Progression, PHS, Alexandria, Egypt, 2024.
- Tissue microenvironment in the pathogenesis of chronic liver diseases and liver cancer, Faculty of Pharmacy-Minia University conference, Egypt, 2024.
- Leveraging Basic Science in Africa: Enhancing the Partnership Between ILCA, AHPBCC and the Egyptian Higher Education Institutions as an example, AHPBCC annual conference, Mombasa, Kenya, 2024.
- Taking that next step: Tips on how to become an independent researcher and lead your own projects, ILCA seminar series, 2022.
- Liver Cancer "Omics" And Optimizing Therapy: Immune Checkpoint Therapy, AHPBCC scientific conference, Cairo, Egypt, 2022.

## Oral presentations

- Zaki, MYW. *et al.* Genome wide RNA expression analysis identifies CD44 positive macrophages as promoters of hepatocyte proliferation and the development of NAFLD-HCC. EASL-HCC summit, Lisbon, Portugal, 2019.
- Gee, L *et al.* Obeticholic acid limits cholestasis induced cognitive decline by maintaining blood-brain barrier integrity and preserving neuronal health. EASL-ILC, Vienna, Austria, Journal of hepatology, 2019.
- Mahdi, A, Zaki, MYW. *et al.* What drives development of HCC in non-cirrhotic NAFLD? EASL-ILC Paris, France, Journal of hepatology, 2018.
- Zaki, MYW. *et al.* The role of Stromal SULFATASE-2 in the progression of Hepatocellular carcinoma. British association for the study of the liver (BASL) meeting, Derbyshire, UK, 2018.
- Zaki, MYW. *et al.* Stromal SULFATASE-2 promotes Human hepatocellular carcinoma cell growth and is a potential novel therapeutic target. EASL-HCC summit, Geneva, Switzerland, 2017.

## Poster presentations

- Labiano, I *et al.* Trem2 Defends the Liver Against Hepatocellular Carcinoma Through Multifactorial Protective Mechanisms. International liver cancer association (ILCA), Madrid, Spain, 2020.
- Zaki, MYW. *et al.* Sulfatase-2 (SULF2) in the hepatocellular carcinoma microenvironment orchestrates disease progression and therapy resistance. EASL-HCC summit, Lisbon, Portugal, 2019.
- Esparza, A. *et al.* Non-parenchymal TREM2 halts hepatocarcinogenesis through the inhibition of liver inflammation and hepatocyte proliferation", EASL HCC summit, Lisbon, Portugal, 2019.
- Gee, L\*, Zaki, MYW\* *et al.* High throughput RNA Sequencing Unravels Pathways Associated with Cognitive Deficit in Primary Billiary Cholangitis. EASL-ILC, Vienna, Austria, Journal of hepatology, 2019.

# Memberships

2020-present Africa  
Hepatopancreatobiliary cancer  
consortium (AHPBC).

2022-present International Liver  
Cancer Association.

2019-2023 European association  
for cancer research (EACR).

2017-2019 European association  
for the study of liver (EASL).

2017-2018 British association for  
cancer research (BACR).

# Studentships

2019 Newcastle university post-  
submission academic development  
scholarship (3 months, 3870 £)

2015 Newton-Mosharafa Ph.D.  
scholarship (4 years, 115,000 £)

# Hands-on Training

Cancer Research UK Med-Immune  
Alliance, Cambridge, UK, 2018,  
Producing and purifying active SULF2  
protein.

MRC Harwell, Oxford, UK, 2018 Culling  
and processing tissues of genetically  
engineered (KO) mice.

Pil AB, Newcastle University, UK, 2017.  
Animal handling course.

Institute of Biochemistry and molecular  
biology, Faculty of medicine, Bonn  
University, Germany, 2012 Producing  
and purifying tagged HDGF protein.  
Purifying in-house rabbit anti-human  
HDGF antibody.

## Poster presentations, continued...

- Govaere, O. *et al.* The vanin 1-cysteamine pathway regulates immune tolerance upon lipid-induced oxidative stress in non-alcoholic fatty liver disease. EASL-ILC, Journal of hepatology, Paris, France, 2018.
- **Zaki, MYW.** *et al.* Stromal SULFATASE-2 in hepatocellular carcinoma – a prognostic biomarker that regulates growth and predicts resistance to inhibition of Wnt/ $\beta$ -catenin, JNK and NF- $\kappa$ B pathways. ILCA meeting, London, UK, 2018.
- Worrell, J. *et al.* The nuclear factor-kappa B subunit c-Rel is a core regulator of matrix production and dermal fibrosis. 15<sup>th</sup> international workshop on scleroderma research, Pittsburgh, USA. British journal of dermatology, 2018.
- Labiano, I *et al.* Trem2 Defends the Liver Against Hepatocellular Carcinoma
- **Zaki, MYW.** *et al.* Stromal Sulfatase-2 – a critical regulator of hepatocellular carcinoma growth and migration. AASLD, Washington, USA, Hepatology, 2017.
- **Zaki, MYW.** *et al.* SULFATASE-2, secreted from Cancer-associated fibroblasts, promotes hepatocellular carcinoma cell growth. ICM director's Day, school of medical sciences, Newcastle, UK, 2017.
- **Zaki, MYW.** *et al.* SULFATASE-2, secreted from Cancer-associated fibroblasts, promotes Human hepatocellular carcinoma cell growth. BACR tumour microenvironment conference, Nottingham, UK, 2017.
- **Zaki, MYW.** *et al.* Production and Characterization of Rabbit Anti-mouse Hepatoma Derived Growth Factor (HDGF) IgG for Western Blotting and Immunohistochemistry. 9<sup>th</sup> international pharmaceutical sciences conference, Assiut, Egypt, 2014.

## References

### Lewis Roberts

Title: Professor of Medicine. Consultant, Division of Gastroenterology and Hepatology, Department of Internal Medicine.

Email: roberts.lewis@mayo.edu

Address: Mayo Clinic, Rochester, Minnesota.

### Helen Reeves

Title: Professor & Honorary Consultant Gastroenterologist at Newcastle Hospitals NHS Foundation Trust.

Email: helen.reeves@nd.ac.uk

Address: Newcastle University Cancer Centre, Paul O'Gorman Building, Medical School, Framlington Place, Newcastle upon Tyne, UK, NE2 4HH.

### Fiona Oakley

Title: professor of fibrosis biology, Newcastle Fibrosis Research Group.

Email: fiona.oakley@newcastle.ac.uk

Address: Bioscience Institute, Faculty of Medical Sciences, Newcastle University, Newcastle upon Tyne, UK, NE2 4HH.

### Shishir Shetty

Title: Professor of cancer immunology.

Email: s.shetty@bham.ac.uk

Address: Centre for Liver and Gastrointestinal Research, University of Birmingham, Birmingham B15 2TT, UK.

## Voluntary Roles

### EACR ambassador

Gives first-hand assistance to those in high risk to develop cancer.

Provides up-to-date information to community about recent advances in cancer research.