Dr. med. vet. Seddik Hammad



Deputy PI - Section Molecular Hepatology, Department of Medicine II, Medical Faculty Mannheim, Heidelberg University, Germany

Role in LiSyM-Cancer

- Deputy Principle Investigator LiSyM-Cancer II
- Spatial OMIC technologies (GeoMX DSP) and profiling
- Multi-scale modelling of NAFLD/MASLD
- mouse models for MASLD, MASH, cirrhosis, HCC

Expertise

- Systems Medicine & Disease Modeling (Liver, Fibrosis, ACLF, DILI)
- Regulatory Science & Predictive Toxicology
- Translational Research (Bench-to-Clinic Integration)
- Multi-Omics & Spatial Biology (scRNA-seq, spatial transcriptomics, proteomics) and Data Analysis
- Next-Generation Sequencing (NGS), Single Cell(nuclei) RNAseq, Spatial Transcriptomics/Proteomics, Cell isolation and imaging
- Atomic Absorption Spectrometry, IHC/IF, RNAScope, FACS, MACS

Degrees

- 2022, Veterinary License, Baden-Württemberg, Germany
- 2008 - 2012, Doctor's Degree, Veterinary Medicine, Institute of Pharmacology and Toxicology, Justus Liebig University Giessen, Germany
- 2008 - 2012, Ph.D., Faculty of Veterinary Medicine, Justus Liebig University Giessen (in collaboration with the Department of Systems Toxicology, Leibniz Research Centre for Working Environment and Human Factors, IfADo, and WHO Collaborating Centre for Occupational Health, TU Dortmund), Germany
- 2006 - 2007, Study of pre-doctoral courses, Department of Forensic Medicine and Toxicology, Faculty of Veterinary Medicine, South Valley University, Qena, Egypt
- 2003 - 2005, Study of pre-Master courses and Master Thesis, Department of Forensic Medicine and Toxicology, Faculty of Veterinary Medicine, South Valley University, Qena, Egypt
- 1996 – 2001, Bachelor Degree in Veterinary Sciences (B.V.Sc.), Faculty of Veterinary Medicine, South Valley University, Qena, Egypt

Professional Experience

- Since 2024, Principal Investigator & Core Facility Manager (Cell Isolation and Molecular Imaging Unit), Coordinator of Animal Experiments in the Section Molecular Hepatology, Molecular Hepatology, Dept. of Medicine II, University Medical Center Mannheim, Heidelberg University, Germany
- 2016 - 2023, Senior Scientist Group Lead, Molecular Hepatology, Dept. of Medicine II, University Medical Center Mannheim, Heidelberg University, Germany
- 2012 - 2015, Postdoctoral Research Fellow Department of Systems Toxicology, Leibniz Research Centre for Working Environment and Human Factors (IfADo), WHO Collaborating Centre for Occupational Health, TU Dortmund, Dortmund, Germany
- 2010 - 2012, German Fellowship (Ph.D. Position), Department of Systems Toxicology, Leibniz Research Centre for Working Environment and Human Factors (IfADo), WHO Collaborating Centre for Occupational Health, TU Dortmund, Dortmund, Germany
- 2008 - 2010, Ph.D. Student, Department of Systems Toxicology, Leibniz Research Centre for Working Environment and Human Factors (IfADo), WHO Collaborating Centre for Occupational Health, TU Dortmund, Dortmund, Germany
- 2005 - 2008, Assistant Lecturer, Department of Forensic Medicine and Toxicology, Faculty of Veterinary Medicine, South Valley University, Qena, Egypt
- 2003 - 2008, Research Assistant at South Valley University, Egypt

Honors and Awards (selection)

- 2017, Encouragement Award in the field of agricultural and veterinary sciences, The Academy of Scientific Research and Technology, Egypt
- 2015, Best Oral Presentation Award, 31st German Association for the Study of the Liver (GASL) in Munich, Germany
- 2011, IfADo Award Dortmund University, Germany

Publications

2026-06-10	Transient suppression of the ECM1 gatekeeper is essential for HGF/c-MET-driven liver regeneration
2026-04-29	Phosphatidylserine-Dependent Clearance of Damaged Red Blood Cells by Liver Sinusoidal Endothelial Cells in Alcohol-Related Liver Disease *Biology*
2026-03-14	Semi-automated isolation of parenchymal and non-parenchymal liver cells from mice and humans with enhanced stellate cell fraction *Cell & Bioscience*
2025-12-01	Immunoglobulin G binding as a quantitative marker of hepatocellular death across acute and chronic liver injury
2025-09-01	From cirrhosis to cancer: α-SMA+ CAF and CD68+ macrophage rewiring in the cirrhosis–HCC transition *79. Jahrestagung der DGVS mit Sektion Endoskopie Jahrestagung der Deutschen Gesellschaft für Allgemein- und Viszeralchirurgie mit den Arbeitsgemeinschaften der DGAV und Jahrestagung der CACP*
2025-08-02	The interplay between biomechanics and cell kinetics explains the spatial pattern in liver fibrosis
2025-07-25	Mouse precision-cut liver and kidney slices: an optimized ex vivo model for acute toxicity testing
2025-07-17	ECM1 expression in chronic liver disease: Regulation by EGF/STAT1 and IFNgamma/NRF2 signalling. *JHEP Rep*
2025-06-05	TGF-β serves as a critical signaling determinant of liver progenitor cell fate and function
2025-03-12	Mechanisms underpinning the effect of exercise on the non-alcoholic fatty liver disease: review. *EXCLI J*
2025-02-06	ECM1 attenuates hepatic fibrosis by interfering with mediators of latent TGF-beta1 activation. *Gut*
2025-01-01	TGF-β critically determines the activation state of both, the macrophage subpopulation that is particularly recruited in the context of MASH progression, as well as of TAMs *41. Jahrestagung der Deutschen Arbeitsgemeinschaft zum Studium der Leber*
2024-11-05	The TGF-beta1 target WISP1 is highly expressed in liver cirrhosis and cirrhotic HCC microenvironment and involved in pro- and anti-tumorigenic effects. *Biochem Biophys Res Commun*
2024-09-09	Direct Ingestion of Oxidized Red Blood Cells (Efferocytosis) by Hepatocytes. *Hepat Med*
2024-08-23	A digital liver twin demonstrating the interplay between biomechanics and cell kinetics can explain fibrotic scar formation
2024-03-01	ERRγ-inducible FGF23 promotes alcoholic liver injury through enhancing CYP2E1 mediated hepatic oxidative stress *Redox Biology*
2024-02-08	TGFβR1 inhibition drives hepatocellular carcinoma proliferation through induction of toll-like-receptor signalling *International Journal of Experimental Pathology*

2024-01-01	Progression of MASLD goes along with significant changes of a recruited and TGFb sensitive macrophage population *Zeitschrift für Gastroenterologie*
2024-01-01	The Interplay of TGF-β1 and Cholesterol Orchestrating Hepatocyte Cell Fate, EMT, and Signals for HSC Activation *Cellular and Molecular Gastroenterology and Hepatology*
2023-12-12	Extracellular Matrix Protein 1 Attenuates Hepatic Fibrosis by Inhibiting TSP-, ADAMTS-, and MMP-Mediated Latent TGF-β1 Activation
2023-08-01	GPNMB induces hepatic steatogenesis and modulates liver cancer cells *Zeitschrift für Gastroenterologie*
2023-07-01	Tolerance of repeated toxic injuries of murine livers is associated with steatosis and inflammation *Cell Death & Disease*
2023-01-01	Repeated toxic injuries of murine liver are tolerated through minute steatosis and mild inflammation *39. Jahrestagung der Deutschen Arbeitsgemeinschaft zum Studium der Leber*
2023-01-01	Monitoring TGF-β1 effects on liver cells in vivo *39. Jahrestagung der Deutschen Arbeitsgemeinschaft zum Studium der Leber*
2023-01-01	Digital twin demonstrates significance of biomechanical growth control in liver regeneration after partial hepatectomy *iScience*
2022-01-01	Multi-omics profiling identifies molecular signatures of acute-on-chronic liver failure in Abcb4KO mice upon chemical intoxication *38. Jahrestagung der Deutsche Arbeitsgemeinschaft zum Studium der Leber*
2021-12-03	Mesenchymal stromal cells mitigate liver damage after extended resection in the pig by modulating thrombospondin-1/TGF-β *npj Regenerative Medicine*
2021-10-14	MicroRNA-124 Alleviates Retinal Vasoregression via Regulating Microglial Polarization *International Journal of Molecular Sciences*
2021-08-24	Liver Sinusoidal Endothelial Cells Suppress Bone Morphogenetic Protein 2 Production in Response to TGFβ Pathway Activation *Hepatology*