

Aurino M., Kemas

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Education

- 2018-2020 **Master of Medical Science in Toxicology** | Karolinska Institutet (KI), Sweden
Thesis: *Purification and profiling of extracellular vesicles from primary human hepatocyte (PHH) spheroids and analysis of vesicular miR-122 upon acetaminophen-induced liver injury*. Jan – June 2020. Supervisor: Assoc. Prof. Volker Lauschke (KI)
Presented on June 2, 2020
- 2007-2011 **Bachelor in Bioengineering** | Nanyang Technological University (NTU), Singapore
Thesis: *Plasmonic self-assembly of gold nanocomposite at polar/non-polar interface*
Sep 2010 – May 2011. Supervisor: Nanyang Assoc. Prof. Duan Hongwei (NTU)

Publications

1. **A.M. Kemas**, S. Youhanna, R. Zandi Shafagh, and V.M. Lauschke Insulin-dependent glucose consumption dynamics in 3D primary human liver cultures measured by a sensitive and specific glucose sensor with nanoliter input volume. **FASEB Journal** (in press).
2. X. Chen, Y. Zu, X. Hong; **A.M. Kemas**, Z. Gao. Coordination of mercury (II) to gold nanoparticle associated nitrotriazole towards sensitive colorimetric detection of mercuric ion with a tunable dynamic range. **Analyst**, 2011. 136(8): p. 1690-1696.

Employment & research experience

- 2020-present **Research assistant** | Dept. of Physiology and Pharmacology, Fyfa. KI, Sweden
- Development of sensitive and selective glucose sensor to study insulin-dependent dynamics of glucose consumption in 3D primary human hepatocytes (PHH).***
June 2020-present | with Sonia Youhanna, Reza Zandi Shafagh, and Assoc. Prof. Volker M. Lauschke
- Developed and characterized a glucose sensor platform in different nutritional perturbations
 - Co-authored a research article (see *Publication 1*)
- 2019-2020 **Thesis student** | Dept. of Physiology and Pharmacology, Fyfa. KI, Sweden
June 2019-June 2020 | with Sonia Youhanna and Assoc. Prof. Volker M. Lauschke
- Established a method to purify extracellular vesicles (ECV) from PHH microtissues
 - Profiled the ECV and analyzed its vesicular miR-122 cargo
- 2017-2018 **Research Assistant** | National University of Singapore (NUS), YLL School of Medicine, Biochemistry (Synthetic Biology lab)
- Engineering E. coli to synthesize (S)-equol from isoflavone***
July 2017 – Aug 2018 | with Dr. Ho Chun Loong, Lawrence and Assoc. Prof. Matthew Chang, Wook
- Performed plasmid design, bacterial cloning and transformation
 - Performed PCR-directed mutagenesis
 - Performed recombinant proteins purification and characterization (Michaelis-Menten kinetics, K_m and k_{cat} measurement)

2013-2016 **Research Assistant** | Institute of Bioengineering and Nanotechnology (IBN) A*Star, Singapore (Biosensors, Diagnostics and *In vitro* model lab)

- **High content phenotypic screening for drug-induced thrombotic microangiopathy**
Mar 2015-April 2016 | with Dr. Daniele Zink (Team Leader)
 - Performed dose-response experiments with relevant primary human cells
 - Developed a microfluidic culture system
 - Performed a phenotypic screening based on immunostaining images
- **Development and validation of colorimetric gold nanoprobe assay in**
a). KRAS and BRAF genotyping,
b). Salmonella detection.
Mar 2013 – Mar 2015 | with Prof. Jackie Y.Ying (Executive Director) and Dr. Yanbing Zu (Principal Research Scientist)
 - Performed assay optimization and validation
 - Assisted senior scientists in preparing technical disclosures

2010 **Youth Research Program** | Student | IBN A*Star, Singapore
Jan-Aug 2010 | with Dr. Xiaojun Chen (mentor)

- **Gold nanoparticle for mercuric (II) ions detection in liquid samples**
 - Synthesized nitrotriazole-capped gold nanoparticles
 - Performed assay optimization
 - Co-authored a research article (see *Publication 2*)

Awards

- Recipient of Singapore's Ministry of Education Tuition Grant Scheme for Undergraduate Study (2007-2011)
- Bronze medalist, Indonesia's National Chemistry Olympiad. 2006

References

- **Annika Hanberg, PhD** | Professor, IMM, KI | Phone: +46 852487526 | email: annika.hanberg@ki.se
- **Sonia Youhanna, PhD** | Postdoctoral researcher, Physiology and Pharmacology, KI | Phone: +46 76 408 2417 | Email: sonia.youhanna@ki.se
- **Ho Chun Loong, Lawrence, PhD** | Asst. Prof., Biomedical Engineering, Southern University of Science and Technology (SUSTech), China | Phone: + 86 1857 6699 774 | Email: hejl@sustech.edu.cn