

# CURRICULUM VITAE

**MOHAMMAD SHOMALI, Doctor of Natural Sciences,**

Shafa Badran

Amman

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Date of birth: 29 August 1973

Nationality: Jordanian and German

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## PROFESSIONAL QUALIFICATIONS

**Current Position:** Assistant professor in Biochemistry and Biotechnology, School of Pharmacy Philadelphia University, Amman-Jordan

**Teaching Courses:** Biotechnology, Biochemistry, Clinical Biochemistry, Cell Biology, Molecular Biology and Immunology

**Current research activates:** -Exploring of plant extracts in lowering of the blood glucose level *in vivo* and *in vitro*.  
-Generation of monoclonal antibodies against different antigens

**02.2013-06.2015**

**Consultant (R&D):** Jordanian Pharmaceutical Manufacturing,

- Generated monoclonal antibodies using hybridoma technology (anti-Lipoarabinomannan (LAM) from *Mycobacterium tuberculosis* and anti-HCG Alpha.
- Selection of the best clones.
- Purification of antibodies using Äkta Explorer
- Established an ELISA detection system for Tuberculosis
- Development of pregnancy rapid test
- Developed an *in vitro* hepatocytotoxicity system for testing of different drugs using primary hepatocytes.

**April 2005-March 2008**

**Head of Biotech. Lab.:** Gulf Pharmaceutical Industries (Julphar)/United Arab Emirates

- Cloning and expression of human Erythropoietin in CHO cells
- Leded the upstream and downstream processing of alpha-Erythropoietin (Roller bottles system and Äkta system)
- Optimized production (raw material) and scaling up the production under GMP guidelines
- Wrote SOPs
- Trained new staff under GLP/GMP

**September 2004-January 2005**

**Analyst:** Department of plant viral disease: LUFA company/Kiel

- **Prepared samples from potato and potato leaves to be scanned via ELISA**

## **Education**

**April 2008-December 2012**

**Scientific employee (Graduate Student):** University of Kiel (Biochemistry department, mentor: Prof. Grötzinger)

### **Thesis Title:**

Recombinant Expression of the NOD2 CARD2 Domain and Determination of the Solution Structure of Equine Alpha-Defensin 1 (DEFA1)

- **Cloned and expressed NOD2 CARD2 in E. coli, CHO and HEK cells**
- **Purified and characterized NOD2 CARD2 Domain using chromatography methods**
- **Solved solution structure of Equine Alpha-Defensin by using NMR**
- **Generation of anti-NOD2 monoclonal antibodies**
- **Generation of anti-ADAM17 monoclonal antibodies**

**January 2004-July 2004:**

**Research assistance:** University of Kiel (Biochemistry Department mentor Prof. Saftig), Kiel/Germany

- **Characterized L1 protein using standard molecular biological methods (SDS-PAGE, WB, ELISA, FACS, cells adhesion assay, siRNA, IP, Co.IP)**

**February 2003-January 2004:**

**Diploma student:** University of Kiel (Biochemistry Department mentor Prof. Saftig), Kiel/Germany

### **Diploma thesis:**

Characterization of Two Members of TM9S-Family (TM9SF3 &TM9SF4)

- **Cloned and expressed TM9SF3 &TM9SF4 in CHO and COS cells**
- **Cloned of tagged TM9SF3 &TM9SF4**
- **Immunostaining and Co-localization experiments**

**October 1998- February 2003: University of Kiel**

**Biochemistry Student:**

**Major:** Biochemistry and Molecular Biology

**Minor:** Cell Biology, Organic Chemistry, Immunology

**December 1996-June 1998**

Study of German language

## **October 1991-June 1995**

Study of Applied biology at Jordan University of Science and Technology with a specialization in Genetics and Molecular Biology (Bachelor):

## **MOLECULAR BIOLOGICAL TECHNIQUES EXPERIENCES:**

- **Performing cell-based assays**
- **Cell culture techniques (including primary and tumor cell lines)**
- **Cytotoxicity assay**
- **Flow cytometry**
- **Direct/indirect/competitive and sandwich ELISA**
- **Different cloning methods**
- **Design of primer and siRNA**
- **Purification of plasmids DNA**
- ***in vitro* mutagenesis**
- **Northern blot**
- **Fusion PCR**
- **cDNA modification with different tags**
- **DNA and protein sequence analysis software**
  - **Vector NTI, BioEdid, Chroma, Blast, Clustal omega**
- **Experience and knowledge of GLP/GMP regulations**
- **Generation of monoclonal antibodies by Hybridoma Technology**
- **Protein/antibody engineering**
- **Protein expression in different hosts (prokaryote and eukaryote)**
- **Protein purification (RP-HPLC, Gel filtration, ion-exchange chromatography, ÄKTA-purifier)**
- **SDS-PAGE, Western blot, IP, 2D-gel electrophoresis, DSL**
- **Purification of monoclonal antibody (Protein A/G)**
- **FISH**

## **LANGUAGES:**

**Arabic:** Native speaker

**German:** Excellent

**English:** Excellent

## Grants:

- 1) PhD grant for PhD students
- 2) Developing rapid test for TB diagnosis
- 3) Determination of the antihyperglycemic effect of *Achillea Santolina*
- 4) Determination of Antiglycation, Antioxidant and Anticoagulation of some Herbal Plants

## PUBLICATIONS:

- 1) **Mohammad Rasool Shomali**, Yousef Abu Samra, Achillea Santolina, Aged and Fresh Plant: A Comparison Study of Biological Activities (the manuscript in preparation).
- 2) Yousef Abu Samra, **Mohammad Rasool Shomali**, The antioxidant, total phenolic compound and total flavonoid content in ethanol and acetone extracts from *Achillea santolina*: a comparison between a fresh and aged sample (the manuscript is submitted).
- 3) **Mohammad Rasool Shomali**, Fadwa Haliqah, Bayan Al Jabr, Antiglycation, Antioxidant and Anticoagulation Activity of Some Herbal Plants (the manuscript in preparation).
- 4) Fadwa Alhaliqa; **Mohammad Rasool Shomali**; Mehdi Ben Khelil; Tamam El-Elimat, Abdelwaheb Ben Othmen, Ethical issues in Mental Health Research: What IRB committee in Arabic region have to consider? Ethics and medicine an international journal of bioethics, 2022, submitted
- 5) Yusuf Abu Samra, Mohammad Rasool Shomali, Qutaiba Ibrahim Agda, Roua Al Thahair, Fadwa Alhaliqa. The traditional use of Achillea santolina L. as an aid and remedy to lower blood sugar: An observational study, submitted Journal of Herbal Medizin.
- 6) Michalek M, Jung S, **Mohammad Shomali**, Cauchard S, Sönnichsen FD, Grötzinger J. Solution structure and functional studies of the highly potent equine antimicrobial peptide DEFA1. Biochem Biophys Res Commun. 2015 Apr 17;459(4):668-72. doi: 10.1016/j.bbrc.2015.02.168. Epub 2015 Mar 11.
- 7) Ahmad Trad, Michel Riese, **Mohammad Shomali**, Nina Hedemana, Joachim Grötzinger Inken Lorenzen "The disintegrin domain of ADAM17 antagonises fibroblast-carcinoma cell interactions" Int J Oncol. 2013 May;42(5):1793-800. doi: 10.3892/ijo.2013.1864.

- 8) Ahmad Trad, Hinrich P Hansen, **Mohammad Shomali**, Matthias Peipp, Katja Klausz, Nina Hedemann, Kosuke Yamamoto, Christine Desel, Inken Lorenzen, Hilmar Lemke, Stefan Rose-John, Joachim Grötzinger “ADAM17-overexpressing breast cancer cells selectively targeted by antibody-toxin conjugates” *Cancer Immunol Immunother.* 2013 Mar;62(3):411-21. doi: 10.1007/s00262-012-1346.
  
- 9) Ahmad Trad, Nina Heddemen, Verena Pawlak, **Mohammad Shomali**, Joachim Grötzinger, Inken Lorenzen “ Development of sandwich ELISA for detection and quantification of human and murine a disintegrin and metalloproteinase17” *J Immunol Methods.* 2011 Aug 31;371(1-2):91-6. doi: 10.1016/j.jim.2011.06.015.
  
- 10) Lothar Marischen, Daniela Wesch, Hans-Heinrich Oberg, Philip Rosenstiel, Ahmad Trad, **Mohammad Shomali**, Joachim Grötzinger, Ottmar Janssen, Vladimir Tchikov, Stefan Schütze, Dieter Kabelitz “Functional expression of NOD2 in human peripheral blood Gamma/Delta T-cells” *Scand J Immunol.* 2011 Aug;74(2):126-34. doi: 10.1111/j.1365-3083.2011.02560.

Amman 30.09.2022

**Mohammad Rasool Shomali, Ph.D.**

