

**RAMZI SHAWAHNA****Email:** [ramzi.shawahna@najah.edu](mailto:ramzi.shawahna@najah.edu)**Date of Birth:** July 7, 1981**Address:** Selat el Harthiya, Jenin**EDUCATION AND DEGREES**

- **Doctor of Philosophy (PhD) in Pharmacology**

University Paris Descartes, Paris, France

The PhD program consists of attending modules, conducting research, publication of at least 2 articles in peer reviewed journals (1 published and 1 submitted/accepted for publication), writing and publicly defending the PhD dissertation.

**Defense:** The dissertation was publicly defended in Nov 2011.

**Dissertation:** “Quantitative genomic and proteomic expression of transporters and metabolizing enzymes at the human blood—brain barrier”.

**Advisor:** Prof. Dr. Jean-Michel Scherrmann, Vice Dean Faculty of Pharmacy, Head of INSERM U705, CNRS UMR 8206.

**Access:** The dissertation can be accessed on: <http://www.theses.fr/158089014#!> under the French title: Expression génomique et protéomique quantitative des transporteurs et des enzymes du métabolisme au niveau de la barrière hémato-encéphalique humaine.

- **Doctor of Philosophy (PhD) in Pharmaceutics**

IUB (Pakistan) and in collaboration with University of Helsinki (Finland)

The PhD program consists of a subject graduate record examination (GRE), course work of 20 credit hours, research work leading to the publication of at least 1 article in peer reviewed journal, writing and publicly defending the PhD dissertation. The dissertation has to be evaluated by at least two experts from technologically/academically advanced countries in addition to external examiners.

In 2008, I obtained a CIMO fellowship and left to the University of Helsinki, Finland to conduct a part of my PhD research. Under the co-supervision of Prof. Dr. Marjo Yliperttula and Prof. Dr. Nisar-ur-Rahman, I completed a multi-faceted project with special emphasis on Biopharmaceutics and Pharmacokinetics.

**Defense:** The dissertation was publicly defended in Dec 2011

**Dissertation:** “Investigation and Revision of Current BCS Based Biowaiver Criteria: in silico in vivo correlation (SIVC)”.

**Advisors:** Prof. Dr. Nisar-ur-Rahman, Chairman Department of Pharmacy, IUB and Prof. Dr. Marjo Yliperttula, Head of Division of Biopharmaceutics and Pharmacokinetics, University of Helsinki, Finland

**Access:** The dissertation can be accessed on: <http://eprints.hec.gov.pk/7780/> or <http://pr.hec.gov.pk/Thesis/1266S.pdf>

- **Master (MPhil) in Pharmaceutics, 2007**  
The Islamia University of Bahawalpur (Pakistan)  
**Thesis:** "Role of pharmacist in minimizing prescribing errors in public hospitals"  
**Advisor:** Prof. Dr. Nisar-ur-Rahman, Chairman Department of Pharmacy
- **Executive Master of Business Administration (MBA) in Marketing, 2005**  
Preston University
- **Bachelor of Pharmacy (BSc Pharm), 2004**  
Bahauddin Zakariya University, Pakistan
- **Bachelor of Arts (BA) and Master of Arts (MA)**  
External candidate  
University of the Punjab

## PROFESSIONAL EXPERIENCE

- **Emory University, Atlanta, GA, USA**  
Research Scientist and Postdoctoral Fellow in Neuro-immunology  
September 2012- August 31, 2013

I was responsible for different clinical and preclinical projects in neuro-immunology which include developing a treatment for HIV Encephalitis and Multiple Sclerosis. I screened, consented and recruited patients, obtained human samples, handled and used animal models and cell culture. I sectioned and stained brain tissues, investigated cellular signaling, cytokines, Monocytes, B & T cells (Bregs & Tregs), I used FACS and molecular pharmacology tools like qRT-PCR, PCR, enzymatic method, gene and protein expression, ELISA, peptide drug development, imaging ...etc

- **Abbott Laboratories, Daix, France**  
Drug Metabolism and Pharmacokinetics (DMPK) Lab Head and Senior Scientist  
April 2012- September 2012

I was responsible for planning, designing and executing GLP and non-GLP Pharmacokinetics and metabolism studies for different NCEs in the preclinical and different developmental phases. I oversaw the PK lab and monitored, coordinated and collected data, interpreted data and extracted protocols and SOPs, finalized reports and presented outcomes. I performed compartmental and non-compartmental PK analysis in animals, oral screening, iv infusion, perfusion, concentrations in plasma and brain, urinary-feces excretion balance, ocular drug concentrations, toxicokinetics, determined bioavailability, bioequivalence, advanced PK and PK/PD analyses, early and advanced ADME studies, lead optimization and profiling support, drug-drug interaction, in vitro permeability, stability, inhibition and induction of enzymes and transporters, intrinsic clearance on hepatocytes and vesicles, enzymology (Km et Vmax, IC50, Ki of inhibitors), used WinNonLin, Phoenix, built adoptable models using Microsoft EXCEL, built models on simulation software like STELLA, notions in NONMEM and MATLAB. Represented DMPKT in peer meetings, sponsored and outsourced studies

- **INSERM U705, CNRS UMR 8206, Paris, France**

Research Scientist

November 2008- December 2011

I was responsible for different projects with the aim of investigating drug transporters and metabolizing enzymes at the human blood brain barrier as determinants of cerebral pharmacokinetics and pharmacodynamics. I used mechanical methods to isolate cerebral microvessels from human and rodent brain samples, qualitative and semi-quantitative genomics and proteomics techniques, qRT-PCR, gel, cytometry, Western blot, LC-MS/MS, cell culture and optimized in vitro model for the blood brain barrier

- **Drug Research and Technology, Helsinki, Finland and IUB, Pakistan**

Research Scientist

March 2007- October 2008

I was responsible for planning, designing and executing Pharmacokinetics and metabolism studies, modeling drug absorption in the human intestine, biopharmaceutical classification system (BCS), in silico in vivo correlation, compartmental absorption and transit (CAT) model. I used bioanalytical techniques like Perkin Elmer HPLC with conductimeter, Agilent 1200 HPLC, Agilent LCMS 1100, HPTLC line, LCMS/HPTLC, prepared different pharmaceutical and cosmetic formulations (solution, suspension, tablets, capsules ...etc) and quality control testing: Cutometer MPA 580, Rheometer/Viscometer, Mexameter, TEWA Meter, Humidity meter, Quality control of different liquid, solid and semi-solid preparations, Digital Dissolution Apparatus & Auto sampler, Lyophilizer, Polarimeter, Digital Moisture analyzer, Digital hardness tester, Kenwood Planetary Mixer, Spectrophotometry, clinical trials, Bioequivalence studies, Pharmacokinetics, Toxicokinetics, Drug Delivery Systems, Drug development, Peptide and protein drugs, Cosmetics, Cosmeceuticals, Nutraceuticals, solid, semi-solid and liquid formulations, Quality Control, Quality Assurance, Pharmacoeconomics

- **Nishtar, Services, PIC Hospitals and IUB**

Hospital Pharmacist

September 2004- February 2007

I was responsible for overseeing rational drug prescription, transcription and dispensing for inpatients and outpatients in major hospitals, assessed the medication process and intake, screened for medication errors and implemented measures to reduce medication errors in two major teaching hospitals (a 1196-bed general practice teaching hospital) and (a 292-bed tertiary care hospital).

### PEER REVIEWED PUBLICATIONS

- **Shawahna R**, and Nisar Ur Rahman. Transcription errors in Pakistan public hospitals: impact of writing style and long duty hours. *J Clin Nurs*. 2013 Feb;22(3-4):550-8. doi: 10.1111/j.1365-2702.2012.04076.x. Epub 2012 Dec 10.
- **Shawahna R**, Uchida Y, Declèves X, Ohtsuki S, Yousif S, Dauchy S, Jacob A, Chassoux F, Daumas C, Couraud PO, Terasaki T, Scherrmann JM. Transcriptomic and Quantitative Proteomic Analysis of Transporters and Drug Metabolizing Enzymes in Freshly Isolated Human Brain Microvessels. *Mol Pharm*. 2011 Aug 1;8(4):1332-41. doi: 10.1021/mp200129p. Epub 2011 Jul 8.
- **Shawahna R**, Rahman NU. Evaluation of the use of partition coefficients and molecular surface properties as predictors of drug absorption: a provisional biopharmaceutical classification of the list of national essential medicines of Pakistan. *DARU Journal of Pharmaceutical Sciences* 2011;19(2): 83-

99.

- Catarina Chaves, **Ramzi Shawahna**, Aude Jacob, Jean-Michel Scherrmann, Xavier Declèves. Human ABC Transporters at blood-brain interfaces as Determinants of CNS Drug Penetration. *Curr Pharm Des.* 2013 Jun 19. [Epub ahead of print]
- Declèves X, Jacob A, Yousif S, **Shawahna R**, Potin S, Scherrmann JM. Interplay of Drug Metabolizing CYP450 Enzymes and ABC Transporters in the Blood-Brain Barrier. *Curr Drug Metab.* 2011 Oct;12(8):732-41.
- Kortejärvi H, **Shawahna R**, Koski A, Malkki J, Ojala K, Yliperttula M. Very rapid dissolution is not needed to guarantee bioequivalence for biopharmaceutics classification system (BCS) I drugs. *J Pharm Sci.* 2010 Feb;99(2):621-5.
- Lloret-Linares, C., N. Veyrie, J. L. Bouillot, **R. Shawahna**, K. Peoch, C. Poitou, S. Mouly, J. F. Bergmann and X. Declèves (2012). "Are there factors modifying the expression of enzymes of drug metabolism in obese subjects?" *Fundamental & Clinical Pharmacology* 26: 85-85.
- **Shawahna R**, Declèves X, Scherrmann JM. Hurdles in predicting human blood-brain barrier drug permeability using animal and in vitro models: a special focus on transporters and metabolizing enzymes. *Curr Drug Metab.* 2013 Jan;14(1):120-36.
- **Shawahna R**, Rahman NU, Ahmad M, Debray M, Yliperttula M, Declèves X. Electronic prescribing reduces prescribing error in public hospitals. *J Clin Nurs.* 2011 Nov;20(21-22):3233-45.
- **Ramzi Shawahna**, Nisar-ur-Rahman, Mahmood Ahmad, Marcel Debray, Xavier Declèves, Marjo Yliperttula and Marja Blom. Prescribers' perspectives of the socioeconomic status and important indicators affecting prescribing behavior in a developing country. *Cent. Eur. J. Med.* 2012 7(1): 129-136.
- **Shawahna R**, and Nisar Ur Rahman. Defining Prescribing Errors in General Practice for the Hospitals in Pakistan. *PAFMJ* Jan - Mar 2009;59(1):20-7.
- **Shawahna R**, and Nisar Ur Rahman. Prescribing Errors in Psychiatry Department: An Audit from a Hospital in Lahore. *J Pak Psych Society* 2008; 5(1): 31-33.
- **Shawahna R**, and Nisar Ur Rahman. Prescribing Errors involved Splitting of Tablets: A Two-Hospital Case Analysis. *Pak J Med Health Sci* Jun 2008;2(2):54-58.

#### PRESENTATIONS AND POSTERS IN INTERNATIONAL CONFERENCES

- **R. Shawahna**, N-U-. Rahman, M. Ahmad, M. Debray, X. Declèves. Impact of writing style and long duty hours on the incidence of medication transcription errors in public hospitals: perspectives from Pakistan. **Poster**. AAPS Annual Meeting and Exposition, October 23-27, 2011, Walter E. Washington Convention Center, Washington DC. USA
- **R. Shawahna**, N-U-. Rahman, M. Ahmad, M. Debray, M. Yliperttula, M. Blom, X. Declèves. Impact of socioeconomic status on physician's prescribing behavior and patient's health behavior: perspectives from a developing country. **Poster**. AAPS Annual Meeting and Exposition, October 23-27, 2011, Walter E. Washington Convention Center, Washington DC. USA
- **Shawahna R**, Scherrmann JM, Declèves X. Expression of ABC transporters and CYP enzymes in an in vitro human BBB model: approximation possibilities? **Oral presentation**. 9th Annual French-Belgian ABC Meeting. October 20, 2011, Paris, France
- **Ramzi Shawahna**, Xavier Declèves, Jean-Michel Scherrmann. Transcriptomic and Quantitative Proteomic Analysis of Transporters and Drug Metabolizing Enzymes in Freshly Isolated Human Brain Microvessels. **Poster**. 2 ème Journée scientifique de l'Institut Médicament Toxicologie Chimie Environnement, Université Paris Descartes et Paris Diderot, May 27, 2011, Paris, France
- **R. Shawahna**, S. Yousif, A. Jacob, J-M. Scherrmann, X. Declèves. Gene expression of SLC transporters and phase II metabolizing enzymes in human isolated brain microvessels. **Poster**. FIP Sciences World

Congress (PSWC) and AAPS Annual Meeting and Exposition, November 14-18, 2010, Morial Convention Center, New Orleans, Louisiana, USA

- **Ramzi Shawahna.** Expression pattern of solute carriers and phase II metabolizing enzymes at the human blood brain barrier and human cerebral microvascular endothelial (hCMEC/D3) cell line. Poster. Société d'Etude des Interfaces Sang-Cerveau (ex-Club de la BHE) Annual Meeting, May 31, 2010, Paris, France
- **Ramzi Shawahna.** Prescribing errors in public hospitals. **Oral presentation.** 1st National Pharmacy Conference, Mars 2-4, 2007, Bahawalpur, Pakistan

## SKILLS AND COMPETENCIES

- **Pharmacokinetics, toxicokinetics and simulations:** Compartmental and non-compartmental PK analysis in humans and animals, PK/PD, WinNonLin, Phoenix, building adoptable models using Microsoft EXCEL, building models on simulation software like STELLA, notions in NONMEM and MATLAB, advanced PK and PK/PD analyses, DMPKT representation, sponsoring and outsourcing studies, oral screening, iv infusion, perfusion, concentrations in plasma and brain, urinary-feces excretion balance, toxicokinetics
- **Metabolism and ADME:** Metabolism, early and advanced ADME studies, lead optimization and profiling support, managing DMPKT studies, in vitro permeability, stability, inhibition and induction of enzymes and transporters, intrinsic clearance on hepatocytes and vesicles, enzymology (Km et Vmax, IC50, Ki of inhibitors)
- **Reporting and regulatory:** Experimental design of GLP and non-GLP studies, compliance with ICH GCP, FDA, EMA, cGMP and regulatory standards, monitoring, coordination and data collection, result interpretation and guidance, protocol extraction, SOPs, documentation and report writing according to standard procedures
- **Analysis techniques:** Bioanalytical techniques, Perkin Elmer HPLC with conductimeter, Agilent 1200 HPLC, Agilent LCMS 1100, HPTLC line, LCMS/ HPTLC
- **Pharmaceutical and cosmetic formulations:** Preparation of different pharmaceutical and cosmetic formulations (solution, suspension, tablets, capsules ...etc) and quality control testing, Cutometer MPA 580, Rheometer/Viscometer, Mexameter, TEWA Meter, Humidity meter
- **Quality control:** Quality control of different liquid, solid and semi-solid preparations, Digital Dissolution Apparatus & Auto sampler, Lyophilizer, Polarimeter, Digital Moisture analyzer, Digital hardness tester, Kenwood Planetary Mixer, Spectrophotometry
- **Pharmacology and molecular biology:** Qualitative and semi-quantitative genomics and proteomics techniques, qRT-PCR, gel, cytometry, Western blot, LC-MS/MS, cell culture
- **Languages:** Multilingual (English/French/Arabic/Urdu/Hindi)

## CONFERENCES ATTENDED

- AAPS Annual Meeting and Exposition, October 23-27, 2011, Walter E. Washington Convention Center, Washington DC, USA
- 9th Annual French-Belgian ABC Meeting, October 20, 2011, Paris, France
- AAPS Annual Meeting and Exposition, November 14-18, 2010, Morial Convention Center, New Orleans, Louisiana, USA
- Eurocancer 2011, Palai Royal, Paris, France
- Eurocancer 2009, Palai Royal, Paris, France
- HDR 2008, 19th Helsinki Drug Research 2008, June 9-11, 2008, Helsinki, Finland
- 1st National Pharmacy Conference, Mars 2-4, 2007, Bahawalpur, Pakistan

- 2ème Journée scientifique de l'Institut Médicament Toxicologie Chimie Environnement, Université Paris Descartes et Paris Diderot, May 27, 2011, Paris, France
- Société d'Etude des Interfaces Sang-Cerveau (ex-Club de la BHE) Annual Meeting, May 31, 2010, Paris, France
- Optimization of siRNA function, in vivo delivery and therapeutic potential by chemical modifications and polymeric formulation. Prof. Jørgen Kjems, Department of Molecular Biology and iNANO, University of Århus, Denmark, May 19, 2008. Biocentre 2, Faculty of Pharmacy, University of Helsinki, Finland
- Invention and Development of the DNA Fingerprinting Method. Millennium Laureate, Sir Alec Jeffreys, Professor of Genetics University of Leicester, UK, Auditorium, University of Helsinki, Finland
- Advances in Drug Delivery and Tissue Engineering. Millennium Laureate, Prof. Robert Langer, Institute Professor, Millennium prize winner 2008, Massachusetts Institute of Technology, Cambridge, MA, USA, Auditorium, University of Helsinki, Finland
- Social Pharmacy, Pharmacoeconomics and pharmacoepidemiology. Mohammad Izham Mohamed Ibrahim, University Sains Malaysia, Gutvi Hall, IUB, Pakistan

## TEACHING EXPERIENCE

### Faculty of Pharmacy & Alternative Medicine, Pakistan

Taught and presented the following topics/subjects between 2005-2008

Novel Drug Delivery System: Liposome & Niosome as drug carriers, Advances in controlled drug delivery: Niosomes, Delivery of peptide and protein drugs, Genetic engineering and recombinant DNA technology, Gene expression, membranes and signaling, Monitoring the drug prescribing practices, Principles of Pharmaceutical marketing, Drug disposition in pregnancy, Development of recovery processes for recombinant proteins and peptides

### Preston University

Taught and presented the following topics/subjects between 2004-2005

Identifying market segments and selecting target markets, Business customs in global marketing, Emerging markets, Sales training and developments

## GRANTS AND AWARDS

- Funds from the Department of Neurology, Emory University School of Medicine, VA Merit Award and a grant from Meigen Biotechnology Corporation, Inc., USA [2012-2013]
- AAPS travelship award, University of British Columbia, [2011]
- French Government Scholarship, France [2008-2011, 3 years]
- CIMO scholarship for researchers in mobility, Finland, [2008]
- Pakistan technical assistance scholarship, [2000-2004, 4 years]

## REFERENCES

Available upon request