

**Dr. Imad I. Hamdan**

**Full professor, since January 2010**

**د. عماد ابراهيم محمد حمدان**



#### Personal information

Date of birth : 29/6/1968  
Nationality : Jordanian  
Marital status : Married with three kids

#### Academic and Educational Career

**Faculty of Pharmacy- University of Jordan  
Amman-Jordan  
6<sup>th</sup> Dec. 1998- 4<sup>th</sup> Sept. 2004**

**Assistant professor** at the department of pharmaceutical Sciences; University of Jordan, teaching the following courses:

- Analysis and identification of drugs , an MSc course .
- Pharmaceutical applications of metal chelation, BSc course.
- Medicinal chemistry (practical) , BSc course .
- Organic chemistry (practical), BSc course.
- Analytical chemistry (theoretical and practical ) , BSc course.
- Instrumental analysis and quality control (theoretical and practical ) , BSc course.
- Applications of chromatography, BSc course.
- Selected topics in pharmaceutical chemistry (analysis and regulatory issues)
- Advanced Chromatography for Ph.D students

**Faculty of Pharmacy- University of Jordan  
Amman-Jordan  
5<sup>th</sup> Sept.2004- 17<sup>th</sup>Sept. 2005**

**Associate Professor** at the department of pharmaceutical Sciences; University of Jordan, teaching the following courses:

- Analysis and identification of drugs , an MSc course .
- Analytical chemistry (theoretical and practical), BSc course.

#### Contact Details:

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**Department of Pharmaceutical  
Sciences  
School of Pharmacy  
University of Jordan  
Amman-Jordan**

- Applications of chromatography, BSc course.

**Faculty of Pharmacy- University of Al Zaytoonah  
Amman-Jordan**

**20th Sept.2005- 17<sup>th</sup> Sept 2006**

**Associate Professor** at the department of pharmaceutical Sciences; University of Al Zaytoonah (in a sabbatical leave), teaching the following courses:

- Analytical chemistry (theoretical and practical ), BSc course.
- Instrumental analysis and quality control (theoretical and practical ), BSc

**Faculty of Pharmacy- University of Jordan  
Amman-Jordan**

**18<sup>th</sup> Sept.2006-Feb. 2010**

**Associate Professor** at the department of pharmaceutical Sciences; University of Jordan, teaching the following courses:

- Analysis and identification of drugs , an MSc course.
- Spectral Analysis, a PhD course.
- Analytical chemistry (theoretical and practical), BSc course.
- Applications of chromatography, BSc course.

**Faculty of Pharmacy- University of Jordan  
Amman-Jordan**

**Feb. 2010 – present**

**Full Professor** at the department of pharmaceutical Sciences; University of Jordan.

**Administrative posts:**

- 1- Assistant dean for the faculty of Pharmacy, University of Jordan (2000-2001)
- 2- Assistant dean for the deanship of scientific research, University of Jordan, Sept 2004- Sept. 2005.
- 3- Head of Department of Pharmaceutical Chemistry, University of Jordan, Sept 2006- Sept. 2007.
- 4- **Vice Dean for the School of Pharmacy** University of Jordan 2019-2020 / chairman of postgraduate studies in Pharmacy

## Committees:

- 1- Head of the committee of scientific research, 2015/2016
- 2- Head of the library committee 2016/2017
- 3- Head of the committee for investigating students misconduct 2016/2017
- 4- Head for the human resources committee 2017/2018.
- 5- Head of the postgraduate research committee 2019/2020.
- 6- General committee (University level) of safe disposal of chemicals.
- 7- Many committees outside the university; mainly in Jordan Food and Drug administration(JFDA) with the purpose of reviewing pharmaceutical products files to ensure their good quality before registration.

## Education

### **Department of Pharmaceutical Sciences- University of Strathclyde. Glasgow- UK.**

Ph.D. in biopharmaceutical analysis (**1995-1998**)

Title of PhD. Theses : Free solution capillary electrophoresis in the study of drug-DNA interactions.

Supervisor: Prof. Roger D. Waigh and Graham G. Skellern

### **Department of Pharmaceutical Sciences- University of Strathclyde. Glasgow- UK.**

MSc in biopharmaceutical analysis (**1994-1995**)

Title of MSc. theses : Impurity profile of pholcodeine.

Supervisor: Graham G. Skellern.

### **Faculty of Pharmacy- University of Jordan Amman- Jordan**

BSc in pharmaceutical sciences (**1986-1991**)

## Research Interests:

Development and validation of analytical methods for the analysis of drugs in different media.

Employment of suitable analytical methods to study the interaction phenomena of drugs with metal (chelation) or with biological molecules like DNA and enzymes. These interactions are usually correlated with interesting pharmacological activities. Interaction of different of drugs with the enzyme alpha amylase is particular importance in my research as it sheds light on potential anti-diabetic compounds. This has been employed in screening plant extracts of Jordan for alpha amylase inhibitory activity (antidiabetic activity).

### Supervised MSc theses and/ or projects:

- 1- Development and evaluation of analytical methods for detection and rapid screening for alpha amylase inhibitors in natural products: Applications to commonly used plants.  
Rawand S. Abu Soud, May 2002
- 2- Investigation of diclofenac metal complexes as candidates for drug delivery  
Fawzi W. Al Hindi, May 2002.
- 3- Development and validation of a spectroscopic and a high performance liquid chromatographic methods for determination of alendronate sodium after derivatization with o- phthalaldehyde.  
Sami K. Al Deeb, March 2003.
- 4- Development and validation of HPLC method for the determination of pseudoephedrine sulfate and loratadine in pharmaceutical dosage forms.  
Ali O. Abu Lathou, Dec. 2003.
- 5- Preparation and pharmaceutical characterization of ciclopirox olamine complexes with metal ions.  
Ruba T. Tarawneh, Dec. 2003.
- 6- Searching for alpha amylase inhibitory activity in the plants of Jordan.  
Tarik Mayaah, July 2005.
- 7- Preparation and characterization of diclofenac bismuth complexes.  
Mohamed Abu Znaid, August 2005.
- 8- Evaluation of Amoxicillin in commercial pediatric suspensions containing amoxicillin and clavulanic acid available in Jordanian market.  
Manal Soup, August 2005.
- 9- Development of flow injection analytical method for the determination 5- aminosalicylic acid in tablet preparations.  
Motasem Abu Al Ruz, 2005.
- 10- Evaluation of cefuroxime axetil preparations available in the Jordanian market-Amani Abu Irmalah

- 11- Studies of hesperidine metal complexes and their effects on biological activity –Safaa Dawoud
- 12- Development of CE method for quality control of orphenadrine and paracetamol in tablets. – Dana Najeh Haj Ali
- 13- Potential interaction between loratadine and meloxicam with cyclodextrin based preparations of gliclazide-Samar Diab.
- 14- Pharmacopeal evaluation of lansoprazole preparations available in Jordanian market- Alaa Abu hammad.
- 15- Effect of selected anions on the absorption of metformin through caco 2 cell model. Doaa Farah
- 16- Evaluation of the effect of selected anions on absorption of lansoprazole. Nagham Suliman Aldmour.
- 17- Evaluation of buccal film for delivery of insulin. – Maram Diab.

#### Ph.D. thesis

- 1- Effect of emu oil on transdermal absorption of model drugs, studied by FTIR  
Randa Mansour
- 2- Insulin detemir ; potential interaction with albumin and efforts to prolong activity. Doua Farah.

#### Publications

1	<a href="#">Sequence based separation of oligonucleotides in free solution capillary electrophoresis</a> II Hamdan, GG Skellern, RD Waigh JOURNAL OF PHARMACY AND PHARMACOLOGY 49, 162-162	1997
2	<a href="#">Use of capillary electrophoresis in the study of ligand-DNA interactions</a> II Hamdan, GG Skellern, RD Waigh Nucleic acids research 26 (12), 3053-3058	1998
3	<a href="#">Separation of pd (GC) 12 from pd (AT) 12 by free solution capillary electrophoresis</a> II Hamdan, GG Skellern, RD Waigh Journal of Chromatography A 806 (1), 165-168	1998
4	<a href="#">Determination of sequence binding preference of ligands with DNA using free solution capillary electrophoresis</a> I McGroarty, II Hamdan, GG Skellern, RD Waigh Journal of Pharmacy and Pharmacology 52 (9; SUPP/1), 144-144	2000
5	<a href="#">A spectroscopic method for quantitative determination of clarithromycin and</a> II Hamdan, AM Mishal Saudi Pharmaceutical Journal 8 (4), 191-197	2000
6	<a href="#">Spectrophotometric and Conductometric Study of the Complexation of Ranitidine Fe<sup>2+</sup>, Fe<sup>3+</sup>, Al<sup>3+</sup>, Mg<sup>2+</sup>, Cu<sup>2+</sup>, Ni<sup>2+</sup> and Pb<sup>2+</sup> Metal Ions: Pharmaceutical ...</a> II Hamdan, M Taha	2000

	SCIENTIA PHARMACEUTICA 68 (4), 357-368	
7	<a href="#">Determination of Chloroxylonol and 2, 4-dichloro-3, 5-xylonol in Bulk and in Antiseptic Solution Using Difference UV-Spectroscopy</a> II Hamdan	2001
8	<a href="#">Investigation of Drug Polymer Interaction: Evaluation and Characterization of Diclofenac-Chitosan Co-Precipitate</a> BA Alkhalidi, A Bani-Jaber, D Anani, II Hamdan	2001
9	<a href="#">Ligand binding to oligonucleotides</a> II Hamdan, GG Skellern, RD Waigh Capillary Electrophoresis of Nucleic Acids, 379-391	2001
10	<a href="#">Comparative in vitro investigations of the interaction between some macrolides and Cu (II), Zn (II) and Fe (II)</a> II Hamdan Die Pharmazie-An International Journal of Pharmaceutical Sciences 58 (3 ...	2003
11	<a href="#">In vitro alpha amylase inhibitory effect of some clinically-used drugs</a> II Hamdan, F Afifi, MO Taha Die Pharmazie-An International Journal of Pharmaceutical Sciences 59 (10 ...	2004
12	<a href="#">Studies on the in vitro and in vivo hypoglycemic activities of some medicinal plants used in treatment of diabetes in Jordanian traditional medicine</a> II Hamdan, FU Afifi Journal of ethnopharmacology 93 (1), 117-121	2004
13	<a href="#">Spectroscopic and HPLC methods for the determination of alendronate in tablets and urine</a> SK Al Deeb, II Hamdan, SM Al Najjar Talanta 64 (3), 695-702	2004
14	<a href="#">Physicochemical studies on Ciclopirox olamine complexes with divalent metal ions</a> RT Tarawneh, II Hamdan, A Bani-Jaber, RM Darwish International journal of pharmaceutics 289 (1-2), 179-187	2005
15	<a href="#">A new HPLC approach for the determination of hydrophilic and hydrophobic components: the case of pseudoephedrine sulfate and loratadine in tablets</a> A Abu-Lathou, II Hamdan, A Tahraoui Drug development and industrial pharmacy 31 (6), 577-588	2005
16	<a href="#">Effects of broccoli on CYP1A2 and CYP2A6 activities using caffeine metabolism in a group of Jordanian volunteers</a> N Hakooz, II Hamdan DRUG METABOLISM REVIEWS 38, 99-99	2006
17	<a href="#">Sodium Mefenamate as a Solution for the Formulation and Dissolution Problems of Mefenamic Acid</a> A Bani-Jaber, I Hamdan, B Al-Khalidi Chemical & pharmaceutical bulletin 55 (8), 1136-1140	2007

18	<a href="#">Screening of Jordanian flora for <math>\alpha</math>-amylase inhibitory activity</a> II Hamdan, FU Afifi Pharmaceutical biology 46 (10-11), 746-750	2008
19	<a href="#">Development and validation of a HPLC method for determination of potential residual cortisone compounds in timolol maleate eye drops</a> II Hamdan, H Qurani Journal of Liquid Chromatography & Related Technologies® 32 (3), 449-46	2008
20	<a href="#">Drug-loaded casein beads: influence of different metal-types as cross-linkers and oleic acid as a plasticizer on some properties of the beads</a> A Bani-Jaber, K Aideh, I Hamdan, R Maraga Journal of Drug Delivery Science and Technology 19 (2), 125-131	2009
21	<a href="#">Acarbose Binding to Human Serum Albumin Studied by Affinity Capillary Electrophoresis</a> II Hamdan Jordan Journal of Pharmaceutical Sciences 2 (2)	2009
22	<a href="#">Pharmaceutical Evaluation of Metformin HCl Products Available in the Jordanian Market</a> AK Bani Jaber, II Hamdan Jordan Journal of Pharmaceutical Sciences 108 (392), 1-14	2010
23	<a href="#">Evaluation of the acute antihyperglycemic effects of four selected indigenous plants from Jordan used in traditional medicine</a> V Kasabri, FU Afifi, I Hamdan Pharmaceutical biology 49 (7), 687-695	2011
24	<a href="#">Capillary Electrophoresis With Electrokinetic Injection Simplifies The Dissolution Testing Of Amoxicillin Capsules</a> D El-Sabawi, II Hamdan, D Haj-Ali Journal of Liquid Chromatography & Related Technologies 35 (4), 573-589	2012
25	<a href="#">Assessment of the pharmacopeial analytical methodologies in the dissolution test of enteric-coated lansoprazole preparations</a> AMA Hammad, II Hamdan, D El-Sabawi tablet 121286 (12), 2015	2012
26	<a href="#">Pharmaceutical evaluation of glibenclamide products available in the Jordanian market</a> D El-Sabawi, S Abbasi, S Alja'fari, II Hamdan African Journal of pharmacy and Pharmacology 7 (22), 1464-1470	2013
27	<a href="#">Antiproliferative Activity of Selected Non-Steroidal Anti-Inflammatory Agents: Role of Iron Complexes</a> R Abu-Dahab, E Khalil, A Khdair, D El-Sabawi, I Hamdan Jordan Journal of Pharmaceutical Sciences 108 (3393), 1-18	2014
28	<a href="#">Improvement of dissolution rate of gliclazide through sodium salt formation</a> D El-Sabawi, II Hamdan Dissolution Technol 21 (4), 49-55	2014
29	<a href="#">In vitro evaluation of potential complexation between bovine insulin and</a>	2014

	<a href="#">bovine serum albumin</a> H Al-Domi, M Alzweiri, I Hamdan, Z Jaradat Biomedical Chromatography 28 (3), 428-432	
30	<a href="#">Preparation, Physicochemical characterization and biological evaluation of some hesperidin metal complexes</a> S Daoud, FU Afifi, AG Al-Bakri, V Kasabri, II Hamdan Iranian journal of pharmaceutical research: IJPR 13 (3), 909	2014
31	<a href="#">Solubility enhancement of glibenclamide in choline–tryptophan ionic liquid: Preparation, characterization and mechanism of solubilization</a> MA Alawi, II Hamdan, ALSA Sallam, NA Heshmeh Journal of Molecular Liquids 212, 629-634	2015
32	<a href="#">Effect of loratadine on the dissolution and bioavailability of gliclazide from its hydroxypropyl-<math>\beta</math>-cyclodextrin complex</a> SH Thiab, II Hamdan, D El-Sabawi, AH Al-Nadaf Journal of Inclusion Phenomena and Macrocyclic Chemistry 85 (3-4), 203-216	2016
33	<a href="#">Application of FT-IR Microspectroscopy in the Investigation of the Stratum Corneum Barrier Function</a> EA Khalil, R Mansour, ASA Sallam, I Hamdan, I Yousef Biophysical Journal 110 (3), 373a	2016
34	<a href="#">In Vitro and In Vivo Evaluation of Casein as a Drug Carrier for Enzymatically Triggered Dissolution Enhancement from Solid Dispersions</a> A Bani-Jaber, I Alshwabkeh, S Abdullah, I Hamdan, A Ardakani, ... AAPS PharmSciTech 18 (5), 1750-1759	2017
35	<a href="#">Elucidation of penetration enhancement mechanism of Emu oil using FTIR microspectroscopy at EMIRA laboratory of SESAME synchrotron</a> RSH Mansour, AA Sallam, II Hamdan, EA Khalil, I Yousef Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 185, 1-10	2017
36	<a href="#">Chromatographic characterization and method development for determination of levetiracetam in saliva: Application to correlation with plasma levels</a> II Hamdan, M Alsous, A Masric JOURNAL OF ANALYTICAL METHODS IN CHEMISTRY 2017, 1-8	2017
37	<a href="#">Capillary electrophoresis in the analysis of pharmaceuticals in environmental water: A critical review</a> II Hamdan Journal of Liquid Chromatography & Related Technologies 40 (3), 111-125	2017
38	<a href="#">The effect of ferrous ions, calcium ions and citric acid on absorption of ciprofloxacin across caco-2 cells: practical and structural approach</a> FIIH Dina El-Sabawi, Rana Abu-Dahab, Waleed A. Zalloum Drug Development and Industrial Pharmacy	2018
39	<a href="#">Predictors of nonadherence in children and adolescents with epilepsy: A multimethod assessment approach</a> M Alsous, I Hamdan, M Saleh, J McElnay, R Horne, A Masri Epilepsy & Behavior 85, 205-211	2018
40	<a href="#">Solubility of Gliclazide and ion Molecular Interactions with Aminopropanol</a>	2018



	<a href="#">in Aqueous Solutions</a> RAD Imad I. Hamdan, Dina El-Sabawi Russian Journal of Physical Chemistry A 92 (1), 84-92	
41	<a href="#">Pancreatic lipase inhibitory activity of selected pharmaceutical agents</a> HZ IMAD I. HAMDAN, VIOLET N. KASABRI, YUSUF M. AL-HIARI, DINA EL-SABAWI Acta Pharm. 69	2019
42	<a href="#">Interaction of pseudoephedrine and azithromycin with losartan: Spectroscopic, dissolution and permeation studies</a> NS Al-dmour, RMN Abu-Dahab, MP Evstigneev, VV Kostjukov, ... Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 117194	2019
43	<a href="#">Studies on the interaction between ciprofloxacin hydrochloride and diclofenac sodium</a> D El-Sabawi, R Abu-Dahab, AG Al Bakri, II Hamdan Tropical Journal of Pharmaceutical Research 18 (2), 377-384	2019
44	Chromatographic Behaviour and Analytical Method Development for Metformin HCl: Application to Permeation Studies through Caco-2 Cells • <a href="#">Imad Hamdan</a> , <a href="#">Dua'a Farah</a> , <a href="#">Rana Abu-Dahab</a> Acta poloniae pharmaceutica 77(1):11-21.	

**\*\*\*\*- A book translation :**

**Magic molecules:how drugs work.**

The book was translated to Arabic by :

[Imad I. Hamdan](#) (2004).

**Awards received**

**Zeneca Pharmaceutical** prize which was received for distinction in the MSc program at University of Strathclyde, UK (1995).