



د. عماد ابراهيم محمد حمدان

## C.V.

**Dr. Imad I. Hamdan**

**Professor in pharmaceutical analysis**

Department of Pharmaceutical Sciences

*Faculty of Pharmacy*

University of Jordan

Amman-Jordan

### **Personal information**

Date of birth : 29/6/1968

Nationality : Jordanian

Marital status : Married with two sons and one daughter

### **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)

#### **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.
- Applications of chromatography, BSc course.

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

Associate Professor at the department of pharmaceutical Sciences; University of 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

### **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.

### **Feb. 2010 – Sept 2013**

- Professor at the department of pharmaceutical Sciences; University of Jordan.

### **Oct. 2013 – Sept 2014**

- Professor at the department of pharmaceutical Chemistry; University of applied sciences (sabbatical leave).

### **Oct . 2014 – present**

- 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.**

## **Education**

**Department of Pharmaceutical Sciences- university of Strathclyde.  
Glasgow- UK.**

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

Title of PhD. Thesis : 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 thesis : 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-aminosalysilic acid in tablet preparations.  
Motasem Abu Al Ruz, 2005.
- 10- Development of a capillary electrophoresis method for the determination of orphinadrin hydrochloride in tablets.  
Dana N. Haj Ali.
- 11.. Pharmaceutical evaluation of cefuroxime axetil preparations available in the Jordanain Market.  
Amani Brakat Abu Irmallah.
- 12- Preparation ond characterization of hispiridin metal complexes.  
Safa Al Sharif.

### **Publications**

- 1- Spectroscopic and HPLC methods for the determination of alendronate in tablets and urine.  
Sami K Al Deeb, Imad I. Hamdan, Samer Al Najjar,  
**Talanta**, 64: 695-702 (2004).
- 2- Studies on the in vitro and in vivo hypoglycemic activities of some medicinal plants used in treatment of diabetes in Jordanian traditional medicine.  
Imad I. Hamdan, Fatma U. Affi

- Ethnopharmacology** , 93: 117-121 (2004).
- 3- Determination of chloroxylenol and 2,4-dichloro-3,5-xyleneol in bulk and in antiseptic solution using difference spectroscopy  
Imad I. Hamdan  
**Dirasat** , 31: 1-8 (2004).
  - 4- Alpha amylase inhibitory activity of some plant extracts with hypoglycemic activity  
Rawand S. Abu Soud, Imad I. Hamdan, Fatma U. Afifi,  
**Scientia Pharmaceutica**, 72: 25-33 (2003).
  - 5- In vitro alpha amylase inhibitory effect of some of the clinically used drugs.  
Imad I. Hamdan, Fatma U. Afifi, M. O. Taha,  
**Die Pharmazie**, 59: 799-801 (2004).
  - 6- In vitro study of the interaction between omeprazole and the metal ions Zn (II), Cu (II), and Co (II).  
I. I. Hamdan,  
**Die Pharmazie**, 56 (2001) 877-881.
  - 7- Spectrophotometric and conductometric study of the complexation of ranitidine to 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 implications.  
Imad I. Hamdan, Motasem Taha,  
**Scientia Pharmaceutica**, 68 (2000) 357-368.
  - 8- A Spectroscopic method for the quantitative determination of clarithromycin and roxithromycin.  
Imad I. Hamdan, Adel M. M ishal,  
**Saudi Pharmaceutical Journal**, 8 (2000) 191-197.
  - 9- Ligand binding to oligonucleotides  
Imad I. Hamdan, Graham G. Skellern, Roger D. Waigh,  
A chapter in **Methods in Molecular Biology**, Edited by K.R. Mitchelson and J. Cheng. Humana Press Inc. Totowa, NJ. Vol. 163: 379- 391.
  - 10- Use of capillary electrophoresis in the study of ligand –DNA interactions.  
Imad I. Hamdan, Graham G. Skellern, Roger D. Waigh,  
**Nucleic Acids Research**, 26 (1998) 3053-3058.
  - 11- Separation of pd(GC)<sub>12</sub> from pd(AT)<sub>12</sub> by free solution capillary electrophoresis.  
Imad I. Hamdan, Graham G. Skellern, Roger D. Waigh,  
**Journal of Chromatography A.**, 806 (1998) 165- 168.
  - 12- Comparative in vitro investigations of the interaction between some macrolides and Cu (II), Zn(II) and Fe(II).  
Imad I. Hamdan,  
**Die Pharmazie** , 58 (2003) 223-224.

13- Physicochemical studies on ciclopirox olamine complexes with divalent metal ions.  
Ruba T. Taeawnwh, Imad I. Hamdan\*, Ahmed Bani Jaber, Rula Darwish.  
**International Journal of Pharmaceutics**, 289 (2004) 179-187.

14- A new HPLC approach for the determination of hydrophilic and hydrophobic components: The case of pseudoephedrine sulfate and loratadine in Tablets, 31 (2005) 577-588.

Ali Abu-Lathou, Imad I. Hamdan, Ahmad Thraoui.

### **Drug Development and Industrial Pharmacy**

15- Effects of dietary broccoli on human in vivo caffeine metabolism: a pilot study on a group of Jordanian volunteers.  
Hakooz N, Hamdan I.

**Curr Drug Metab. 2007 8 :9-15.**

16- Sodium mefenamate as a solution for the formulation and dissolution problems of mefenamic acid.  
Bani-Jaber A, Hamdan I., Al-Khalidi B.

**Chem Pharm Bull (Tokyo). 2007 55:1136-40.**

17- Diclofenac-bismuth complex: synthesis, physicochemical, and biological evaluation.  
Abuznaid M, Sallam AS, Hamdan I, Al-Hussaini M, Bani-Jaber A

**Drug Dev Ind Pharm. 2008 Apr;34(4):434-44.**

18- Screening of Jordanian flora for alpha amylase inhibitory activity  
Imad I. Hamdan, Fatma U. Affi

**Pharmaceutical Biology**, 2008, 46:746-750.

19- 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. Bani-Jaber , K. Aideh, Hamdan I., R. Maraqah

**Journal of drug development science and technology** (2009) 19: 125-131.

20- Development and validation of a HPLC method for determination of potential residual cortisone compounds in timolol maleate eye drops.

Imad I. Hamdan, Huda Qrani

**Journal of liquid chromatography and related technologies**

(2009) 32: 449-467.

21- Acarbose binding to human serum albumin studied by affinity capillary electrophoresis

Imad I. Hamdan,

**Jordan Journal of Pharmaceutical Sciences** (accepted, in press)

22- Investigation of drug polymer interaction: Evaluation and characterization of diclofenac-chitosan –coprecipitate

Ahmad Bani Jaber, Deema Anani, Imad I. Hamdan, Bashar a. Alkhalidi.

**Jordan Journal of Pharmaceutical Sciences** , 2 (2009) 140-148.

23- Pharmaceutical Evaluation of metformin HCl products available in the Jordanian market.

Imad I. Hamdan, Ahmad K. Bani Jaber.

**Jordan Journal of Pharmaceutical Sciences**, 3 (2010) 1-7.

24- Development and validation of a stability indicating capillary Electrophoresis method for the determination of metformin hydrochloride in tablets.

I.I. Hamdan,\*, A.K. Bani Jaber, A.M. Abushoffa

**Journal of Pharmaceutical and Biomedical Analysis** 53 (2010) 1254–1257.

25- Capillary electrophoresis as a screening tool for alpha amylase inhibitors in plant extracts

**Saudi Pharmaceutical Journal**, 18, (2010) 91-95.

Imad I. **Hamdan**, Fatima U. Afifi

26- Development of a capillary electrophoresis method for the determination of orphenadrine citrate in tablets in the presence of paracetamol

Dana N. Haj-Ali, Imad I. **Hamdan**

**Saudi Pharmaceutical Journal**, 18, (2010) 233-237

- 27- In vitro and in vivo acute antihyperglycemic effects of five selected Indigenous plants from Jordan used in traditional medicine  
Violet Kasabria, Fatma U. Afifib,\*, Imad Hamdan.  
**Journal of Ethnopharmacology** 133 888–896. (2011)
- 28- Capillary electrophoresis with electrokinetic injection simplifies the dissolution testing of amoxicillin capsules  
El-Sabawi Dina; Hamdan Imad I.; Haj-Ali Dana  
**JOURNAL OF LIQUID CHROMATOGRAPHY & RELATED TECHNOLOGIES**, 35, 573-589. (2012)
- 29- Evaluation of the acute antihyperglycemic effects of four selected indigenous plants from Jordan used in traditional medicine  
Kasabri Violet; Afifi Fatma U.; Hamdan Imad  
**PHARMACEUTICAL BIOLOGY** Volume: 49 Issue: 7  
Pages: 687-695, Published: JUL 2011
- 30- The Synthesis and Characterization of Fatty Acid Salt Chitosan as Novel Matrices for prolonged intragastric Drug Delivery.  
Ahmad Bni-Jaber, Imad Hamdan, Mahmoud Alkawareek  
**Archives of Pharmaceutical Research**, Vol., 35, 1159-1168. (2012)
- 31- Preparation, Physicochemical characterization and biological evaluation of some hesperidin metal complexes  
S Daoud, FU Afifi, AG Al-Bakri, V Kasabri, II Hamdan  
**Iranian journal of pharmaceutical research: IJPR** 13 (3), 909 (2014)
- 32- In vitro evaluation of potential complexation between bovine insulin and bovine serum albumin  
H Al- Domi, M Alzweiri, I Hamdan, Z Jaradat  
**Biomedical Chromatography** 28 (3), 428-432. (2014)
- 33- Antiproliferative Activity of Selected Non-Steroidal Anti-Inflammatory Agents: Role of Iron Complexes  
R Abu-Dahab, E Khalil, A Khdair, D El-Sabawi, I Hamdan  
**Jordan Journal of Pharmaceutical Sciences** 7 (1) (2014)



34- Investigation of Drug Polymer Interaction: Evaluation and Characterization of Diclofenac-Chitosan Co-Precipitate

BA Alkhalidi, A Bani-Jaber, D Anani, **Il Hamdan**

**Jordan Journal of Pharmaceutical Sciences (2014)**

35- Pharmaceutical evaluation of glibenclamide products available in the Jordanian market

D El-Sabawi, S Abbasi, S Alja'fari, Il Hamdan

**African Journal of Pharmacy and Pharmacology 7 (22), 1464-1470. (2014).**

36- Improvement of Dissolution Rate of Gliclazide Through Sodium Salt Formation

Dina El-Sabawi and Imad I. Hamdan

**Dissolution Technologies, November , 49-55, (2014)**

**\*\*\*\*- 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).

**Additional Activities:**

A member of different committees of the Jordan Food and Drug Administration including:

- 1- Drug registration committee
- 2- Assessment of bioequivalence studies committee
- 3- Quality control laboratories committee.
- 4- Committee for clinical studies

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