

## SALMA ELMALLAH

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### SUMMARY OF QUALIFICATIONS

- Excellent knowledge in molecular science, chemistry, with emphasis on organic and medicinal chemistry and drug design
- Outstanding lab and research skills
- Excellent interpersonal and communication skills with strong attention to details
- Analytical thinking, problem solving and multi-tasking skills
- Quick learner, responsible, motivated and friendly with the ability to work with people of diverse backgrounds
- Proficiency in MS Office (ICDL Holder)
- Ability to work both independently and in a team
- Passed GRE (Graduate Record Examination) test
- Member of *American Chemical Society (ACS)* which is the world's largest scientific society and the premier home of chemistry professionals.

### EDUCATION AND COURSES

- **Ryerson University, Toronto, Canada (Co-supervision)**      **Jul 2017 – Nov 2019**
- **Alexandria University, Alexandria, Egypt**  
PhD degree, Pharmaceutical Chemistry
  - Thesis project: Development of Derivatives of Cystic Fibrosis Drug, Kalydeco, With Improved Physical Properties and Biological Activity
- **Arab Academy for Science and Technology**      **Feb 2018**
  - Attended an educational preparation course at AASTMT to strengthen my teaching pedagogies and techniques, and learn about the credit hour system
- **Ryerson University, Toronto, Canada**      **Sep 2010 - Sep 2012**  
Master of Science, Molecular Science
  - Thesis project: Progress Toward The Synthesis of Labeled Derivatives of the Cystic Fibrosis Drug, Ivacaftor (biological assays were done in collaboration with Sick Kids hospital)
  - ✓ **Thesis nominated for the Governor General's Gold Medal Award 2012, Canada**
  - ✓ **Ryerson Graduate Award, 2010/2011 and 2011/2012**

- **Arab Academy for Science & Technology** **Feb 2010**  
Principles of marketing course with a grade of 99%
- **Alexandria University, Alexandria, Egypt** **Feb 2008**  
Clinical practice for pharmacist course
- **Alexandria University, Alexandria, Egypt** **Sep 2004 - Jun 2009**  
Bachelor of Science, Faculty of Pharmacy
  - Overall Grade: very good with Degree of Honour (84.4%)
- **Collège Saint Joseph, Alexandria, Egypt** **Sep 1991 – Jun 2004**  
Primary, Preparatory and Secondary Education
  - Diplôme d'Etudes en Langue Française (DELF), 2003
  - Egyptian Bacallaureate with an overall grade of 98%

## RESEARCH EXPERIENCE AND PRESENTATIONS

### **Ryerson University, Toronto, Canada**

- **Progress Toward The Synthesis of Labeled Derivatives of the Cystic Fibrosis Drug, Ivacaftor** **2012**  
Description of cystic fibrosis disease, development of an improved method for the total synthesis of Ivacaftor and synthesis of labeled derivatives for the identification of the mode of action of the drug
- **Natural Product Synthesis** **2010**  
A proposed total synthesis of citrusoside B, one of the recently isolated compounds from Citrus hystrix fruit peel
- **Peloruside A: a novel antitumor agent** **2010**  
Isolation and characterization of a natural antitumor agent (Peloruside A), describing the total synthesis of the drug, mode of action, *in vivo* and *in vitro* studies and advantages of combinative therapy with other antitumor agents

### **Alexandria University, Alexandria, Egypt**

- **Contraception** **2009**  
Different types of contraceptives that can be used by males and females, their safety, mode of action, side effects and selection of the most suitable contraception technique
- **Weight control** **2009**
  - Hormones controlling the human's desire of eating
  - Different techniques to control weight:

- Drugs used to reduce fat absorption and increase their excretion
- Different types of diet and calorie-counting methods
- Surgical intervention such as lap band and gastric bypass operations
  
- **Industrial mixing** **2009**
  - Different types of mixers for liquids and dry powders
  - Conditions of good mixing in industry
  - Mixing process optimization
  
- **Smoking** **2009**
  - Effect of smoking on human's health
  - Use of filters to reduce the effects of cigarettes
  - Different approaches to quit smoking such as laser, sedative drugs and Nicotine patches
  
- **Cosmetics** **2008**
  - FDA authority over cosmetic preparations
  - Cosmetics and personal care products for hair, skin and teeth
  - Folkloric cosmetic products
  - Cosmetics-related health hazards
  - Counterfeiting of cosmetic products
  
- **Radiopharmaceuticals** **2008**
  - Types of radiation
  - Modes of decay
  - Therapeutic and diagnostic uses of radiopharmaceuticals
  - Radiation protection
  
- **Psoriasis** **2007**
  - Diagnosis and symptoms of psoriasis
  - Drugs used to treat psoriasis and their side effects

## PUBLICATIONS

- Submitted manuscript: VX-770 modulates sensitivity of the phospho-regulated gate of CFTR. *Journal of biological chemistry*. September 1, 2018
- Published research paper: Lipophilicity of the Cystic Fibrosis drug, Ivacaftor, and its destabilizing effect on the major CF-causing mutation: F508del. S. Chin, M. Hung, A. Won, Y.S. Wu, S. Ahmadi, D. Yang, S. Elmallah, K. Toutah, C. M. Hamilton, R. N. Young, R. D. Viirre, C. M. Yip & C. E. Bear. *Molecular Pharmacology* June 14, 2018, mol.118.112177; DOI: <https://doi.org/10.1124/mol.118.112177>

**CONFERENCES**

- **20<sup>th</sup> World Congress on Medicinal Chemistry and Drug Design  
Rome, Italy 2020**  
Synthesis of new Ivacaftor derivatives with enhanced physicochemical properties for an improved cystic fibrosis combination therapy. S. Elmallah, R. Viirre. (Accepted Oral presentation) (postponed to June 2021 due to COVID-19 pandemic)
- **21<sup>st</sup> Tetrahedron Symposium  
Gothenburg, Sweden 2020**  
Synthesis of new Ivacaftor derivatives with enhanced physicochemical properties for an improved cystic fibrosis combination therapy. S. Elmallah, R. Viirre. (Accepted poster presentation) (postponed to June 2021 due to COVID-19 pandemic)
- **Dubai International Pharmaceutical & Technology Conference & Exhibition  
Webinars (DUPHAT)  
Dubai, United Arabs of Emirates 2020**  
"Webinar Session - COVID-19: Treatment and Vaccine" Dr. Al-Khars
- **Ryerson Chemistry & Biology Research Symposium (Science at the Interface)  
Toronto, Ontario, Canada 2018**  
Synthesis and Development of Derivatives of the Cystic Fibrosis Drug Ivacaftor with Improved Hydrophilicity (Poster) (**First Prize Winner**)
- **Dubai International Pharmaceutical & Technology Conference & Exhibition  
(DUPHAT)  
Dubai, United Arabs of Emirates 2017**  
Paclitaxel, A study of different combinative therapy and routes of delivery to induce synergistic effect (Supervised Student Poster)
- **23<sup>rd</sup> Quebec-Ontario Mini-Symposium on Bioorganic and Organic Chemistry  
Windsor, Ontario 2012**  
Molecular Probes Based on the Cystic Fibrosis Drug, Ivacaftor (Poster)
- **Ryerson Chemistry & Biology Research Symposium (Science at the Interface)  
Toronto, Ontario 2012**  
Progress Toward The Synthesis of Labeled Derivatives of the Cystic Fibrosis Drug, Ivacaftor (Invited Talk)
- **CSC - 95th Canadian Chemistry Conference and Exhibition  
Calgary, Alberta 2012**  
Progress Toward The Synthesis of Labeled Derivatives of the Cystic Fibrosis Drug, Ivacaftor (Poster)

- **CSC - 94th Canadian Chemistry Conference and Exhibition**  
**Montreal, Quebec 2011**  
Progress Toward The Synthesis of Labeled Derivatives of the Cystic Fibrosis Drug, VX770 (Poster)

## PROFESSIONAL EXPERIENCE

- **Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt**

Title: **Lecturer**

**Dec 2019-Present**

- Teaching different chemistry courses; organic, medicinal and analytical chemistry courses for students all over the different years of faculty of pharmacy
- Adopted and implemented newest techniques in drug design for medicinal chemistry through the purchase and set-up of the Discovery Studio program – one of the latest programs in this field and one that has been hardly espoused by other faculties of Pharmacy
- Uplifted the aforementioned drug design pioneering perspective by means of:
  - ✓ Delivering effectual training for students on how to employ the Discovery Studio program
  - ✓ Composition and compilation from the ground up of a functional guidebook that comprises progressive screenshots of the program
- Preparing practical books for the new courses
- Preparing lists of needed chemicals and equipment to pursue different experiments
- Interacting with students in different extracurricular activities

Title: **Teaching Assistant**

**Feb 2017-Nov 2019**

- Teaching organic chemistry course for first year faculty of pharmacy students (tutorials and practical)
- Preparing lists of needed chemicals and equipment to pursue different experiments
- Assisting students in preparing posters to be published in DUPHAT conference
- Interacting with students in different extracurricular activities

- **Ryerson University, Toronto, Canada**

**Summer 2018**

Title: **Research Assistant**

- Attending extensive hands-on training and carrying out substantial lab work in Dr. Russell Viirre's Laboratory with special focus on the newest synthesis and drug design techniques, yielding to robust lab results

- **Kiroseiz Family Medical Centre, Ministry of Health, Alexandria, Egypt**

**2015-April 2017**

Title: **Pharmacist**

- Provided nurses and outpatients with vaccines and prescribed drugs
- Patient counselling
- Responsible of maintaining good storage conditions for vaccines and drugs
- Updating inventory records on a regular basis
- Keeping up-to-date with new guidelines regarding new side effects and drug-drug interactions

- **Pharco Pharmaceuticals, Alexandria, Egypt**

**2013 – 2014**

Title: **Regulatory Affairs**

- External registration of different pharmaceutical products in foreign countries
- Preparation of CTD (Common Technical Document) files that include pharmacological research and analytical procedures on the active pharmaceutical ingredient, the manufacture process and clinical trials of the finished product
- Translation of different CTD files from English to French
- Revision of brochures and pamphlets

- **Ryerson University, Toronto, Canada**

**2010 – 2012**

Title: **Research Assistant**

Fall 2012

- Synthesis of fluorescent probes and different labeled derivatives of the cystic fibrosis drug, Ivacaftor

Title: **Teaching Assistant**

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|----------------------------------|-------------|
| - General Chemistry (CHY 123)    | Fall 2012   |
| - Organic Chemistry (CHY 200)    | Winter 2012 |
| - Organic Chemistry I (CHY 142)  | Fall 2011   |
| - General Chemistry II (CHY 113) | Winter 2011 |
| - Organic Chemistry (CHY 200)    | Winter 2011 |
| - Organic Chemistry I (CHY 142)  | Fall 2010   |

- **Fouda Pharmacy, Alexandria, Egypt**

**2009 - 2010**

Title: **Pharmacist**

- Prepared drug formulations in different dosage forms
- Ensured the absence of any undesirable drug-drug interactions in prescriptions
- Provided patients with the prescribed drugs
- Patient counselling
- Patient first aid

- Diabetes and/or blood pressure assessment

- **Arafat Pharmacy, Alexandria, Egypt**

**Summer 2008**

Title: **Trainee**

- Assisted in patient counselling
- Prepared drug formulations in different dosage forms
- Provided patients with the prescribed drugs
- Carried out a research essay about the active constituents of herbal drugs and their side effects

- **Alamriya Pharmaceutical Company, Alexandria, Egypt**

**Summer 2006**

Title: **Trainee**

- Formulation of dosage forms of drugs including syrups, tablets, ampoules and vials
- Analysis and quality control of drugs, including chromatographic and spectrophotometric techniques
- Medical sales representation
- Industrial techniques of drug formulation
- Sterilization of ampoules and vials by autoclaving

## **AWARDS**

### **ACADEMIC**

- First prize winner poster, Science at the Interface Symposium 2018, Canada
- Nominated for the Governor General's Gold Medal Award 2012, Canada
- Top four graduate students, Science at the Interface Symposium 2012, Canada
- Ryerson Graduate Award, 2010/2011 and 2011/2012
- First prize in several research essays:
  - Contraception, 2009
  - Industrial mixing, 2009
  - Psoriasis, 2007
- First prize, French Inter-school Competition 2003
- Best Student Award, Collège Saint Joseph, Alexandria, Egypt, 1998 – 2000

### **EXTRACURRICULAR**

- Fourth Place, GWN Dragon Boat Regatta 2018
- Gold Medal, GWN Dragon Boat Regatta 2012, Women division
- Gold Medal, Toronto International Dragon Boat Race Festival 2012, university division
- Gold Medal, Toronto International Dragon Boat Race Festival 2012, recreational premier final division
- Rotary Youth Leadership Award (RYLA), 2007

- First prize in the Franco-Egyptian Research Contest, 1998

## LANGUAGES

Fluent in English, French and Arabic

## COMMUNITY SERVICE AND WORKSHOPS

- **Member in Alexandria Toastmasters club**
- **Rotaract Cosmopolitan**
  - Alexandria Medical Convoy, 2008
    - Providing medical, spiritual and emotional care for poor communities
  - Rotary Youth Leadership Award (RYLA), 2007
    - Ethics of positive leadership
    - Importance of communication skills in effective leadership
    - Problem solving and conflict management
    - Building self-confidence and self-esteem
    - Elements of community and global citizenship
- **Groupe des Ecoles de Langue en Faculté d'Ingénieurs (GELFI) 1998 - 2005**
  - Planned, prepared and implemented events, day trips and camps for needy, rural and mentally-retarded students
  - Provided support to orphans and seniors