

## **Jamilah Borjac-Natour**

Date of Birth : August 7, 1964  
Place of Birth : Beirut, Lebanon  
Marital Status : Married  
Present Address : Khalil Sarkis Street, Eter Bldg, 6<sup>th</sup> floor, Beirut, Lebanon  
Telephone : (03) 246256  
E-mail : [j.borjac@bau.edu.lb](mailto:j.borjac@bau.edu.lb) , [jamilahborjac@yahoo.com](mailto:jamilahborjac@yahoo.com)

### **EDUCATION AND PROFESSIONAL SPECIALIZATION**

- 1/93 - 10/97** : Tulane University, Department of Biochemistry, SL43, 1430 Tulane Avenue, New Orleans, Louisiana 70112. U.S.A.  
Degree awarded: **Ph.D. in Biochemistry**.  
Dissertation entitled: **RNA Determinants of Specificity of Two Phylogenetically Related Single-Stranded DNA Binding Proteins**.
- 9/90 - 12/92** : University of Maryland at Baltimore County, Baltimore, Maryland, U.S.A. (started Ph.D. program then transferred to Tulane University).
- 9/85 - 9/87** : American University of Beirut, Beirut, Lebanon. Degree awarded: **M.Sc. in Biochemistry**. Thesis entitled: **The Binding of Sperm Whale Myoglobin to Human Haptoglobin**.
- 9/82 - 9/85** : American University of Beirut, Beirut, Lebanon. Degree awarded: **B. Sc. in Chemistry**.

### **ACADEMIC APPOINTMENTS**

- 9/2013- till now** : **Beirut Arab University (BAU, Debbieh)**  
Associate professor. Department of Biological Sciences.

#### **Courses Taught:**

##### **Undergraduate Courses:**

Structural Biochemistry (BCHM331)  
Metabolic Biochemistry (BCHM336)  
Molecular Biology of Cancer (BCHM448)  
Biochemical Basis of Nutrition (BCHM445)

##### **Graduate Courses:**

Protein Structure and Function (BCHM611)  
Advanced Biochemistry (BCHM613)  
Research Techniques (BCHM612)  
Technical Writing and Research Skills (GNSC621)  
Advanced Physical Biochemistry (BCHM620)

**2012- 2013** : **American University of Beirut** (AUB, Beirut).  
Performing research at AUB in the laboratory of Dr. J. Usta.  
Research aims at determining the cytotoxic effect of different  
chemicals on HaCat cell.

**2011-6/2014** : **Lebanese American University** (LAU, Beirut)  
**Courses Taught:**  
Introduction to Biochemistry (BCH301)  
Introduction to Biology (BIOL200)  
Basic Organic Chemistry (CHM310)

**2007- 3/2014** : AUB, Beirut

**Course Taught:**  
Introduction to Biochemistry (NFSC261)

**2003- 9/2012** : **Lebanese International University**  
(LIU, Beirut). Full-time faculty member.  
(Faculty member ranking was not available)

**2009-2011** : Coordinator of the Biochemistry major. One of my main  
responsibilities is the arrangement of the biochemistry courses syllabi and labs in terms of  
content and updating them.

**2009-2012** : Committee Member of “new faculty” interviewing panel.

**Courses Taught:**  
Biochemistry I (BIOC300)  
Medical Biochemistry (BIOC310)  
Biochemistry II (BIOC350)  
Biotechnology (BIOC445)  
Advanced Techniques in Biochemistry (BIOC450)  
Enzymology (BIOC375)  
Modern Topics in biochemistry (BIOC490)  
Clinical Chemistry and Lab (BMED450 and 450L)  
Cell and Molecular biology (BIOL275)  
Human Molecular Genetics (BIOC480)

**1998-2004** : LAU, Beirut Assistant professor

**Courses Taught:**  
**Graduate courses:**  
Advanced Molecular Biology (BIO 822)  
Research Methods I (BIO805)  
Research Methods II (BIO806)  
Special Topics in Biology (BIO881)  
**Undergraduate courses:**  
Introduction to Biochemistry (BCH301-4 credits).  
Biology Senior Study (BIO 499-3 credits)

Human Nutrition and Metabolism (NUT201-3 credits).  
Introduction to Biology (BIO101- 4 credits)  
Introduction to Chemistry and its lab (CHEM101-4 credits)  
Introduction to Physical Science and its lab (PHY101-4 credits).  
Laboratory part for the Zoology course (lab for Bio201).  
Laboratory part for Plant physiology course (lab for Bio 341).

### **2003-2004: BAU, Beirut**

#### **Courses Taught:**

##### **Graduate courses:**

Molecular Genetics  
Advanced Molecular Biology

**2/2000 - 6/2000** : Performing research at AUB in the laboratory of Dr. R. Slim.  
Research aimed at the identification of a gene involved in  
hydatidiform molar pregnancies.

**2/1998-6/2000** : **Makassed National School of Nursing, Beirut**

#### **Courses taught:**

General Chemistry  
Biochemistry

**9/1987-8/1990** : **BAU, Beirut**

Instructor/Teaching assistant in organic and analytical chemistry  
Department of Pharmacy.

**1/88 - 8/90** : Medical Representative, L'Union Pharmaceutique d'Orient.  
Beirut, Lebanon.

### **Synergistic Activities:**

Member of the following committees at BAU:

1. Research committee
2. Library committee
3. Laboratory committee
4. Faculty council
5. IRB
6. Member at LAAS ( Lebanese association for advancement of Science)
7. Advisor of undergraduate and graduate biochemistry students.

## **HONORS AND AWARDS**

RNA Determinants of Specificity of Two Single-Stranded DNA Binding  
Proteins. Presented at the Oncology Research Update; Oct 5, 1997. New Orleans,  
Louisiana; U.S.A. (**Poster won First Award**)

## **INVITED SPEAKER OR PARTICIPANT**

1. Oral presentation entitled: ***Moringa Oleifera* Leaf Extracts Induce Apoptosis in Human Lung Adenocarcinoma Cell Line A549**. First International symposium on Moringa: A Decade of Advances in Research and Development. 15-18 November **2015**.
2. Poster Presentation entitled: Cytotoxic Effect of Triclosan on Primary Keratinocytes at the 7<sup>th</sup> Annual research Day April 6<sup>th</sup>, **2013**. AUB, Beirut, Lebanon.
3. Presentation on **The Ribonucleic Acid Specificity of Two Single-Stranded DNA Binding proteins** presented at the Proceedings of the international Conference on Research Trends in Science and Technology **2000**, LAU, Beirut, Lebanon.
4. **The Single-Stranded DNA Binding Protein of Phage RB69**. Presented at the International Meeting of T4 Phage; August 8-12, **1996**. Olympia, Washington, U.S.A.

## **INVITED SEMINAR SPEAKER**

1. Presentation on **The Ribonucleic Acid Specificity of Two Single-Stranded DNA Binding proteins** presented at LAU, Beirut for Biology students.

## **GRADUATE STUDENTS SUPERVISED/SUPERVISING**

### **Ph.D students who defended their thesis:**

1. Ms. Rana Bitar: Thesis entitled: **Anti-Inflammatory Properties of *Annona muricata* Leaves Extracts in Rodents** (May 2019)
2. Miss Hajar Karali: Thesis entitled: **Biochemical Effects of *Ocimum basilicum* on Acute Kidney Injury** (Feb 2020)
3. Mr. Mohamad Halawi: thesis entitled: **Evaluating the Quality of Consumable Water in Lebanon and Correlating it to Oral Candidiasis in Mice Model**
4. Miss Paula Romanos: Thesis entitled: **Discrimination Between Lebanese Identical Twins Using Epigenetics**
5. Miss Alaa Matar: Thesis entitled: **Biochemical Studies on Multiple Sclerosis in Bekaa Region- Lebanon**
6. Miss Farah Rida. Thesis entitled: **Biochemical effects of *Moringa Oleifera* leaves extract on cancer cell lines.**

7. Ms. Marwa al Hassan: Thesis entitled: **The Mechanism of Action of Sorafenib on Colon Cancer**
8. Ms. Mirna Bou Hamdan: Thesis entitled: **Effect of Combined T Lymphocyte Therapy and Chemotherapy on Colon Cancer in Mice**
9. Ms. Safa Nassar: Thesis entitled: **Effect of Veterinary Antibiotics Released in Lebanese Agricultural Land on ICARDA most significant Crops**
10. Miss Mariam Shaheen: Thesis entitled: **Neuroprotective Effects of Aqueous Saffron Extract in a Weight drop TBI Model via SIRT1-dependent regulation on NLRP3 inflammasome**
11. Miss Marwah Salem: Thesis entitled: **Neuroprotective Role of Crocin in a Repetitive Mild Traumatic Brain Injury Mouse Model**

#### **Ph.D students in progress:**

Ms. Rola Haris: thesis entitled: **Effect of *Malva parviflora*, *Origanum majorana*, and *Urtica dioica* extracts on Periodontitis patients: A clinical and in vitro microbiological study**

Ms. Hiba Faour: thesis entitled: **The Effect of *Nigella sativa* and *Salvia officinalis* Plant Extracts on Polycystic Ovary Syndrome Induced in Mice**

Ms. Samah Hachem: Thesis entitled: **Effect of *Gundelia tournefortii* Extract on Polycystic Ovary Syndrome-Induced Implications in Mice**

Ms. Hoda Dakdouk: Thesis entitled: **The Effects of *Moringa oleifera*, *Mucuna pruriens* and *Pistacia atlantica* Extracts on Parkinson's Disease Model in Mice**

Ms. Iman Housseini: Thesis entitled: **The Effects of *Moringa oleifera*, *Mucuna pruriens* and *Pistacia atlantica* Extracts on Acute kidney Injury in a Parkinson Disease Model**

Miss Israa Assaf: Thesis entitled: **In Silico, in Vitro and in Vivo Effects of Selected Lebanese Herbs against Hospital Acquired Carbapenem-Resistant *Acinetobacter baumannii***

Miss Mona Tfaily: thesis entitled: **Antibacterial Effect of *Actinobacteria* Species Isolated from the Rhizosphere of *Origanum majorana***

Miss Zahra Farroukh: thesis entitled: **Isolation and Characterization of Locally Protease Producing Bacteria from South Lebanon.**

Ms. Maryam Kobeissy: Thesis entitled: **Study of Two Oxide Derivatives on Metabolic Functions and Effect of *Matricaria chamomilla* Extract in Exposed Mice**

Ms. Maya Dalleh: Thesis entitled: **Certified potato seeds production in Lebanon using tissue culture techniques**

Miss Carine Mounzer: Thesis entitled: **Environmental Risk Assessment of Antibiotics and Antibiotic Resistant Bacteria in Litani River, Lebanon**

Ms. Samaher Ghaith: Thesis entitled: **Biological control in organic agriculture**

Mr. Mohamad Saleh: Thesis entitled: **Impact of Afforestation on Carbon Sequestration and Soil Properties under Eastern Mediterranean Semi-Arid Conditions**

Ms. Abeer Jawad: Thesis entitled: **Impact of Soil Amendment on Afforestation Success, Survival, Growth and Bacterial Community under Mediterranean Semi-arid Climatic Conditions**

**Master students** who defended their thesis: Since 2014-on

1. Miss Rim Dannaoui. Thesis entitled: **Effect of Carboplatin on Phosphatidylcholine and Phosphatidylinositol Levels in the Plasma Membrane of Cancer Cells and Its Association with Invasiveness.**
2. Miss Hiba Saab. Thesis entitled: **Effect of Methotrexate on Phosphatidylserine and Phosphatidylethanolamine Levels in the Plasma Membrane of Cancer Cells and Its Association with Invasiveness.**
3. Miss Esraa Mousa. Thesis entitled: **Association between Mutations in Beta Globin Gene and Sickle Cell Disease Complications in Palestinians Refugees in Lebanon.**
4. Miss Amani Audi. Thesis entitled: **Effect of Acid Sphingomyelinase on Propagation of Influenza Virus.**
5. Miss Yasmine Khafajah. Thesis entitled: **Effect of Nanoparticles on Neurotransmitter Levels in Rodent Models with Parkinson Disease.**
6. Miss Mariam Shahine. Thesis entitled: **Examining the Effect of Thiamine Dilaurylsulfate (TDS) and Malic Acid on Bacterial Growth in Lebanese Hummus Paste.**
7. Miss Sara Abou Khalil: thesis entitled: **Chemical and Microbiological Analysis of Deir Knoun Ras El Ain Dump Effluents and Their Effect On Liver And Kidney Functions in Rodents.**
8. Miss Nour Bast: Thesis entitled: **Biochemical Effect of *Urtica dioica* Leaves Extract on Acute Myeloid Leukemia Cells.**
9. Miss Manal Joumaa: Thesis entitled: **The Effect of *Matricaria chamomilla* Extract on 1, 2-Dimethylhydrazine Induced Colon Cancer. in Rodents**
10. Miss Safa Aridi: Thesis entitled: **The Effect of *Teucrium polium* against Induced Colitis in Rodents.**
11. Miss Sirine Zaatari. Thesis Entitled: **Association of LRP5 Polymorphism and the Risk of Osteoporosis in Lebanese Menopausal Women.**

12. Miss Rawan Kawash: thesis entitled: **Effect of *Matricaria chamomilla* on a Tumor Suppressor Gene and Hepatic Inflammation in Mice with Colon Cancer.**
13. Mr. Alaa Al Moubarak: thesis entitled: **The Effect of *Eriobotrya japonica* leaves extract on the fertility of the male mice.**
14. Ms. Salima Shebbo: thesis entitled. **The Effect of *Matricaria chamomilla* on DMH-induced Hepatic Oxidative Stress in Colon Carcinogenesis in Rodents.**
15. Miss Nour Akhdar: thesis entitled: **The Effect of Pumpkin Seeds Extract on Spermatogenesis in Male Mice.**
16. Miss Roweida Bawab: thesis entitled: **The Effect of *Ceratonia siliqua* Seeds Extract on the Fertility of Male Mice.**
17. Miss Shada Jennani: thesis entitled: **Association of Specific Single Nucleotide Polymorphism and the Risk of Multiple Sclerosis Development in Lebanese Population.**
18. Miss Sumaya Al Breidy: Thesis entitled: **Association of CYP27B1 Polymorphism and Vitamin D levels with Multiple sclerosis Development in Lebanese Population.**
19. Miss Naela Assaf: thesis entitled: **The Effect of *Annona muricata* Extract on EGFR Signaling Pathway in DMH-Induced Colon Carcinogenesis in Mice**
20. Miss Yasmine Itani: thesis entitled: **Effect of *Annona muricata* Leaves' Aqueous Extract on the JAK/STAT3 Signaling Pathway in DMH-induced Colon Carcinogenesis in Mice.**
21. Miss Sara Shmais: thesis entitled: **Effect of *Annona muricata* Extract on PI3k/Akt signaling pathway in DMH-induced Colon Carcinogenesis in Mice.**
22. Miss Layane ElMasri: thesis entitled: **The Effect of *Annona muricata* Leaves Extract on Colorectal Cancer induced by 1, 2- Dimethylhydrazine in Mice.**
23. Miss Wafaa El Zeino: Thesis entitled: **Prevalence of Antibiotic Resistant Bacteria in domestic Water Storage Tanks in Saida.**
24. Ms. Widad Dia: Thesis entitled: **Effect of *Annona muricata* Leaves' Extract on GLP-1 Signaling Pathway in Pancreatic Cells.**
25. Miss Nour Mahmoud: thesis entitled: **The Effect of Chenopodium quinoa Extract on 1,2-Dimethylhydrazine Induced Colon Cancer in Rodents**
26. Miss Rim Mrad: Thesis entitled: **Effect of *Salvia fruticosa* on WNT Signaling Pathway in Acetic Acid Induced Colitis in Mice.**
27. Miss Noura Bzeih: thesis entitled: **Enhancing Astaxanthin Production by *Haematococcus pluvialis***
28. Miss Suzana Salhab: Thesis entitled: **Effect of *Salvia fruticosa* on Acetic Acid Induced Colitis in Mice.**
29. Miss Abir Komeiha: Thesis entitled: **The Effect of Quinoa Extract on DMH-induced Hepatic Oxidative Stress and PI3K/ AKT/ mTor Pathway in Colon Carcinogenesis.**
30. Miss Leila Farhat: Thesis entitled: **Effect of Graviola Leaves' Extract on cAMP Signaling Pathway in Murine Pancreas.**
31. Miss Rafal Hassan: Thesis entitled: **Evaluating the Effect of Hypothyroidism on Hypertensive and Vitamin D Deficient Iraqi Patients**
32. Miss Sara Seamr: thesis entitled: **Evaluation of the Effect of Vitamin D Deficiency on Liver and Kidney Functions of Iraqi Type II Diabetic Patients**
33. Miss Reem Kassem: Thesis entitled: **The Effect of *Salvia fruticosa* Extract on Biofilm Formation and Oxidative Stress Genes Expression in Bacteria**

34. Miss Walaa Kosseibani: Thesis entitled: **The Effect of *Satureja thymbra* Extract on Biofilm Formation and Oxidative Stress Genes Expression in *Staphylococcus aureus* and *Pseudomonas aeruginosa*.**

**Master Graduate Students in Progress:**

Miss Zeina Darwiche: Thesis entitled: **Effect of *Myrtus communis* Aqueous Extract on Acne-forming Bacteria.**

Miss Dina Shouman: Thesis entitled: **Anti-Acne Effect of *Lavendula angustifolia* Aqueous Extract.**

Miss Aya Mawed: Thesis entitled: **Antibacterial Effect of *Rosmarinus Officinalis* Extract**

Miss Dareen Khalil: Thesis entitled: **The Effect of *Inula viscosa* Aqueous Extract on Oxidative Stress on Selected Gram-Positive and Gram-Negative Bacteria**

Ms. Mariam Mazboudi: Thesis entitled: **Comparison Between the Effect of the Aqueous Extracts of *Satureja thymbra* and *Cupressus sempervirens* on the Antimicrobial Activity of Selected Bacteria from Isolated Iraqi Patients.**

Miss Nour Deeb: Thesis entitled: **Physico-Chemical and Microbial Evaluation of the Ground Water in Ein El Hilweh Palestinian Camp**

**Defense Committee Member:**

Miss Mirna Swayden: Thesis entitled: **Effect of Recombinant Human Arginase I [HuArgI(Co)-PEG5000]-Induced Arginine depletion on Colon Cancer Cell Lines.**

Miss Youmna Orfali: Thesis entitled: **Effect of Silibinin against Methotrexate-Induced Hepatotoxicity in Arthritis Rat Model.**

Miss Katia Sayyed: Dissertation entitled: **Interactions de la fumee de cigarette et ses composes avec les transporteurs membranaires dans des modeles hepatiques et non-hepatiques.**

Miss Sally Badawi: Dissertation entitled: **Characterization of dynamic molecular networks in control ischemic-reperfused mouse heart.**

Mr. Khaled Naja: Dissertation entitled: **Analysis of CYP2C9 and OCT1 polymorphisms in Lebanese patients with type 2 diabetes mellitus: Influence on metformin/ glibenclamide therapy.**

Miss Ola Ghaziri: Thesis entitled: **Potential Therapeutic Effect of Lebanese Carob (*Ceratonia siliqua*) in Arthritis Rat Model.**

Miss Narmin Zmorrod: Dissertation entitled: **Bioremediation and Biotechnological Applications of Alkaliphilic Bacterial Isolates.**

Miss Mirna Hajj: Dissertation entitled: **Phylogenomics & Molecular studies of Lhr-type SF2 helicases in Archaea and Bacteria.**



Miss Rana Lebdy: Dissertation entitle: Carcterisation Dún Nouveau Role de GLN3 dans la Maintenance de la Stability de Genome.

Ms. Nadine Zmorrod: Dissertation entitled: **Characterization and Bioremediation Potential of Halophilic Bacteria Isolated from Lebanese Habitats.**

Master: 2001 : Advised the thesis research of Miss Mayada Hamed, the first student who graduated from the Master Program of Molecular Biology at LAU. Thesis entitled: **Cloning and Identification Of a Novel Sugar Kinase From Escherichia Coli K12.**

## **PUBLICATIONS**

Assaf, I., Al Hakawati, N., **Borjac J.** In-Silico Study of Lebanese Herbal Compounds against Carbapenem-Resistant *Acinetobacter baumannii* Proteins. Submitted to **Journal of Molecular Modeling March 2023.**

Shmeis, S., Assaf, N., **Borjac, J.** Potential Role of *Annona muricata* Aqueous Extract on PI3k/Akt and RAS/ERK Signaling Pathway in Colorectal Cancer. **Submitted to PLOS One March 2023.**

Mounzer, C, **Borjac, J.**, Amer, R., Damaj, R., Baydoun, S. Assessment of Water Quality Using Principal Component Analysis and A Water Quality Index: A Case Study of Litani River, Lebanon. International Journal of Science, Mathematics and Technology Learning. **Accepted for publication in 2023**, Volume 31, Issue 1. ISSN No. 2327-915X.

**Borjac, J.**, Matar, A., Merheb, M., Vazhappilly, C.J., Matar, R. Non-HLA Genes and Multiple Sclerosis. **Accepted for publications in** The Open Biotechnology Journal. 2023, Volume 17, e187407072303030. **DOI.....**

**Borjac, J.**, Zeino, W., Matar, A., Khawaja, S., Merheb, M., Matar, R. Prevalence of Antibiotic Resistant Bacteria in Domestic Water Storage Tanks in Saida. *Water*. 15, 335 2023. <https://doi.org/10.3390/w15020335>.

**Borjac, J.** 2022. Antiproliferative Effects of some Medicinal Plants on Colorectal Cancer: A Mini Review. *BAU Journal Health and Wellbeing*. Volume 5, Issue 1. ISSN: 2617-1635. Article 5. <https://digitalcommons.bau.edu.lb/hwbjournal/vol5/iss1/5>

Salem, M., Shaheen, M., **Borjac, J.** Crocin Suppresses Inflammation-Induced Apoptosis in rmTBI Mouse Model Via Modulation of Nrf2 Transcriptional Activity. *PharmaNutrition* (21) 2022, 100308

Nassar, S., **Borjac, J.** Effect of a Commonly Used Veterinary Antibiotic on Oxidative Stress and Root Transporters of Edible Legumes and Leafy Crops. *BAU Journal Science and Technology*. June 2022.

ElJoumaa, M., **Borjac, J.** *Matricaria chamomilla*: A Valuable Insight into Recent Advances in Medicinal Uses and Pharmacological Activities. **Phytochemistry Reviews** 2022. <https://doi.org/10.1007/s11101-022-09817-0>

Nassar, S., **Borjac, J.** Effect of a veterinary antibiotic on the growth of regularly consumed Lebanese plants *Spanish Journal of Agricultural Research*. 2022 Volume 20, Issue 2, e0303. <https://doi.org/10.5424/sjar/2022202-18132>

Salem, M., Shaheen, M., Tabbara, A., **Borjac, J.** Saffron Extract and Crocin Exert Anti-inflammatory and Anti-Oxidative Effects in a repetitive Mild Traumatic Brain Injury Mouse Model. **Scientific Reports**. 2022. 12:5004. <https://doi.org/10.1038/s41598-022-09109-9>

Matar, A., El-Hachem N, Marchand, V, **Borjac, J.** Exosomal miRNA Profiling in Lebanese Multiple Sclerosis Patients. **International Medical Journal**. 2022. Vol. 29, No. 1, pp. 10 – 15.

Shaheen, M., Bekdash, A., Itani, H. **Borjac, J.** Saffron extract attenuates neuroinflammation in rmTBI mouse model by suppressing NLRP3 inflammasome activation via SIRT1. **Plos One**. 2021. <https://doi.org/10.1371/journal.pone.0257211>.

BouHamdan, M., Massaad, M., Usta, J., **Borjac, J.** Effect of Adoptive T cell Therapy on Colon Cancer Growth and Angiogenesis: an in vitro and in vivo study. *Teikyo Medical Journal*. 2021-Volume 44 issue 5.

Mounzer, C., Baydoun, S., Amer, R., **Borjac, J.** Knowledge, Attitudes, and Practices Regarding the use of Antibiotics: A Cross-Sectional Study from a Rural Area of Lebanon. *BAU Journal-Health and Wellbeing*. 2021 Volume 4 issue 1 ISSN: 2617-1635.

Al Hassan, M., Al Battal, M., Usta, J., **Borjac, J.** Protective Effect of Sorafenib against 1,2-Dimethylhydrazine-Induced Colorectal Cancer in Balb/c Mice. Accepted for publication in *Onkologia I Radiotherapia*. 2021 Vol.15 Iss.8:18-24.

Matar, A., **Borjac, J.** Vitamins and Minerals in Neurological Disorders. Chapter 25: Iron, zinc and multiple sclerosis patients. **Accepted for publication by Academic Press- Elsevier**, book chapter. Editors: Martin, Patel, and Preedy.

Braidy, S., Matar, A., **Borjac, J.** Association of CYP27B1 polymorphism and vitamin D with multiple sclerosis development in Lebanese population of Bekaa region: a preliminary study. **Genetics & Applications** (2021) Vol. 5.[No.1].

Al Moubaraka, A., El Joumaa, M., Slika, L., Patrab, D., **Borjac, J.** Curcumin-Polyallylhydrocarbon Nanocapsules Potently Suppress 1,2-Dimethylhydrazine-Induced Colorectal Cancer in Mice by Inhibiting Wnt/ $\beta$ -Catenin Pathway. **BioNanoSci.** (2021). <https://doi.org/10.1007/s12668-021-00842->

BouHamdan, M., Massaad, M., Usta, J., **Borjac, J.** Effect of Adoptive T cell Therapy on VEGF Signaling Pathway in DMH-Induced Colon Cancer in Balb/c Mice. **Onkologia I Radiotherapia** (Oncology and Radiotherapy). 2021 15(2), p1-8

Al Hassan, M., Reda, F., Baltagi, A., Usta, J., **Borjac, J.** Effect of Sorafenib on Human Colon Cancer Cells. **BAU Journal-Health and Wellbeing**, (2021). Volume 3 Issue 2.

Romanos, P., **Borjac, J.** Epigenetic Status of Lebanese Dizygotic Twins. **Genetics and Biodiversity Journal**. 2021. 5 (1), 1-3

Romanos, P., **Borjac, J.** Epigenetic Discrimination of Lebanese Monozygotic Twins as a Promising Forensic Approach. **Russian Journal of Genetics**, 2021, Vol. 57, No. 1, pp. 90–96.

Swayden, M., Bekdash, A., Fakhoury, I., El-Atat, O., **Borjac, J.**, El-Sibai, M., Abi-Habib. Activation of Autophagy Following [HuArgI (Co)-PEG5000]-Induced Arginine Deprivation Mediates Cell Death in Colon Cancer Cells" **Human Cell**. 2020. 34(23). DOI: 10.1007/s13577-020-00437

**Borjac J.**, El Joumaa, M., Darwiche, M., Blake, D. Hematological Parameters of Lebanese and Syrian Refugees Living in Proximity of Deir Kanoun Ras El Ain Dump in Lebanon. **BAU Journal-Health and Wellbeing**, 2020. Volume 3, Issue 1.

ElAkhdar, N., Bawab, R., **Borjac, J.** Effect of *Cerotonia siliqua* and *Cucurbita pepo* Seeds Extracts on Spermatogenesis in Male Mice. **BAU Journal-Health and Wellbeing**. 2020. Volume 3, Issue 1.

Matar, A., Jennani, S., Abdallah, H., Mohsen, N., **Borjac, J.** Serum Iron and Zinc Levels in Lebanese Multiple Sclerosis Patients. **Acta Neurol Taiwan** 2020: 29:5-11.

Reda, F., **Borjac, J.**, Usta, J. *Moringa oleifera* Leaves Aqueous Extract Induce Apoptosis in HT29 Cell Line. **BAU Journal - Science and Technology**. 2020. Vol. 2, Iss. 1.

Moubarak, A., ElJoumaa M., **Borjac, J.** Male contraceptive effect of *Eriobotrya japonica* Leaves Extract. **BAU Journal Science and Technology**. 2020. Volume 1 issue 1. ISSN: 2706-784X.

**Borjac, J.**, El-Joumaa, M., Youssef, L., Kawach, R., Blake, D. Quantitative Analysis of Heavy Metals and Organic Compounds in Soil from Deir Kanoun Ras El Ain Dump, Lebanon. **The Scientific World Journal**. Volume 2020 |Article ID 8151676 | 10 pages | <https://doi.org/10.1155/2020/8151676>

Matar, A., Jennani, S., Abdallah, H., **Borjac, J.** Haplotyping Analyses among Genes Associated with Multiple Sclerosis in Lebanese Population. **Kragujevac Journal of Science** 2020(42):97-112. DOI: 10.5937/KgJSci2042097M

Shebbo, S., ElJoumaa, M., Kawach, R., **Borjac, J.** Hepatoprotective effect of *Matricaria chamomilla* aqueous extract against 1,2-Dimethylhydrazine-induced carcinogenic hepatic damage in mice. **Heliyon** 6 (2020) e04082.

Halawi, M.H., Nasser, R., Yassine, W., Yusef, H., **Borjac, J.** & Zaher Zeaiter. First Case of Identification of *Candida kefyr* and *Pichia kluyveri* in Lebanese Water. **Water, Air, & Soil Pollution**, 2020. Volume 231, Article number: 108.

Halawi, M., Yassine, W., Nasser, R., Yusef, H., **Borjac, J.**, Al Sagheer, T., Zeaiter, Z. Are two weeks of chronic unpredictable stress enough to produce oral candidiasis in murine model? **Asian Journal of Microbiology Biotechnology & Environmental Science**. Volume 22 (2) 2020: 22-32.

Patra, D., Slika, L., Moubarak A., **Borjac, J.**, Baydoun E. Preparation of Curcumin-Poly (allyl amine) Hydrochloride Based Nanocapsules: Piperine in Nanocapsules Accelerates Encapsulation and Release of Curcumin and Effectiveness against Colon Cancer Cells. **Mater Sci & Eng C. Mater Biol App** 2020 Apr;109:110550. doi: 10.1016/j.msec.2019.110550. Epub 2019.

KaraAli, H., **Borjac, J.** Association between Kidney Injury Molecule-1 Gene Polymorphism and Acute Kidney Injury among the Lebanese Patients. **Genetics and Application**. 2019, Vol.3, No.3. DOI: 10.31383/ga.vol3iss3pp9-16.

ElJoumaa, M., Taleb, R., Rizk, S., **Borjac, J.** Protective Effect of *Matricaria chamomilla* Extract against 1,2-Dimethylhydrazine-Induced Colorectal Cancer in Mice. **Journal of Complementary and Integrative Medicine**, 20190143, eISSN 1553-3840, DOI: <https://doi.org/10.1515/jcim-2019-0143>

Shaheen M., Nsaif, M., **Borjac J.** Effect of TDS on Bacterial Growth in Lebanese Hummus Dip. **BAU Journal, Health and Wellbeing**. 2019. Volume 1 issue 2. ISSN 2617-1635. Article 5.

**Borjac J.** Gene Polymorphism and Acute Kidney Injury in the Lebanese Population. **BAU Journal, Health and Wellbeing**. 2019. Volume 1 issue 2. ISSN 2617-1635.

**Borjac, J.**, ElJoumaa, M., Kawaach, R., Youssef, L., Blake, DA. Heavy Metals and Organic Compounds Contamination in Leachates Collected from Deir Kanoun Ras El Ain Dump and its Adjacent Canal in South Lebanon. **Heliyon** . 2019. 5 e02212.

**Borjac, J.**, Badr, S., ELJoumaa, M., Daas, I., Kobeissi, R. Oral and Dental Status of Lebanese and Syrian Refugees Living in Proximity to Deir Kanoun Ras El Ain Dump in Lebanon. **J Int Soc Prevent Communit Dent** 2019; 9:409-16

Bitar, R., Fahmi, R., **Borjac, J.** *Annona muricata* extract reduces inflammation via inactivation of NALP3 inflammasome. **Journal of Natural Remedies**, 2019. Volume 19 issue 1.

Halawi, M., Yusef, H., **Borjac J.**, Zeaiter, Z. Prevalence of *Candida* Species in Lebanese Water. **Asian Journal of Microbiology Biotechnology & Environmental Science**. 2019. Issue 2.

**Borjac, J.**, Shaheen, M., Nsaif, M., AbouKhalil, S., Blake, DA. Bacterial Analysis of Dump Leachates and Irrigation Water from a Canal in Deir Kanoun Ras El Ain in Lebanon. **Pollution Research**. 2018, Vol 37, issue 4, pp 886-893.

Romanos, P., **Borjac, J.** Could Rapidly Mutating Y-STRs be a Potential Forensic Tool in Discriminating Lebanese Monozygotic Twins? **Genetics and Applications** 2018. 35-42. DOI: 10.31383/ga.vol2iss2pp35-42.

KaraAli, H., Fahmi, R., **Borjac, J.** Effect of *Ocimum basilicum* leaves extract on acetaminophen-induced nephrotoxicity in BALB/c mice. **Journal of Complementary and Integrative Medicine**. 2018; Oct 12. 20180111

Moussa, E., Yassein, N., **Borjac, J.** New Variants in Beta Globin Gene among the Palestinian Refugees with Sickle Cell Disease in Lebanon. **Saudi Medical Journal**. 2018; Vol 39(12).

Rizk, S., Al Bast, N., Hodroj, M., **Borjac, J.** Aqueous Urtica Dioica Leaves Extract Inhibits Proliferation of Acute Myeloid Leukemia Cells in Vitro. *Clinical Lymphoma Myeloma and Leukemia. Volume 17 supplement 2 pp. S279-280.* Part of special issue of the Proceedings of Society of Hematologic Oncology 2017.

F. Reda., **J. Borjac**;, R. Fakhouri., J. Usta. Cytotoxic Effect of *Moringa oleifera* on Colon Cancer cell lines. **Acta Horti**. 2017. No. 1158, pp 269-278 ISHS 2017. DOI. 10.17660/Actahortic. 2017.1158.30

Rana Bitar, Rajaa Fakhoury, Ragaee Fahmi, **Jamilah Borjac**. Histopathological Effects of the *Annona muricata* Aqueous Leaves Extract on the Liver and Kidneys of Albino Mice. 2017. Transl Med (Sunnyvale). 2017, 7:2. DOI: 10.4172/2161-1025.1000194

Sarah Fawwaz, Hanaa Fakhoury Hajeer, Mahmoud Balbaa, **Jamila Borjac**, Rajaa Fakhoury. Association between ACE I/D Gene Polymorphism and Lebanese End Stage Renal Disease Patients with Diabetic Nephropathy. *Saudi journal of kidney diseases and transplantation*. 2017. 28(2):325-329. doi: 10.4103/1319-2442.202789.

**Borjac, J.**, Dannaoui, R., Saab, H., Dakdouki, M., El-Sibai, M., Usta, J. Effect of Methotrexate and Carboplatin on Plasma Membrane Phospholipid Content and Motility of MCF7 Cells. 8(4): 1-12, 2015, Article no.IJBcRR.20709 ISSN: 2231-086X, NLM ID: 101654445.

**Borjac-Natour, J.M.**, Petrov, V.M., and Karam, J.D., Divergence of the mRNA targets for the Ssb proteins of bacteriophages T4 and RB69. *Virology Journal* 2004, 1:4 (17 September 2004).

Van der Veyver IB., Norman B., Tran C., **Bourjac J.**, and Slim R. The human homolog (*PEG 3*) of the mouse paternally expressed gene 3 (*Peg3*) is maternally imprinted but not mutated in women with familial recurrent hydatidiform molar pregnancies. *J Soc Gynecol Invest* 8:305-313, 2001.

## **Abstracts Presented in Conferences and Proceedings**

Amani Audi, Nadia Soudani, **Jamilah Borjac**, Ghassan Dbaibo, Hassan Zaraket. Effect of Acid Sphingomyelinase on the Propagation of Influenza A Virus in Human Lung Epithelial Cells A549. 22<sup>nd</sup> International Scientific Conference of LAAS 2016.

Nour Al Bast, Mohamad H. Hodroj, Paola Ghanem, **Jamilah Borjac**, Sandra Rizk. Effect of *Urtica dioica* Leaves Extract on Acute Myeloid Leukemia Cells U937. 22<sup>nd</sup> International Scientific Conference of LAAS 2016.

Rana Bitar, **Jamilah Borjac**, Ragaee Fahmi, Rajaa Fakhoury. Histopathological Effects of the *Annona muricata* Aqueous Leaves Extract on the Liver of Albino Mice. 22<sup>nd</sup> International Scientific Conference of LAAS 2016.

Rida, F., Fakhouri, R., Usta, J. **Borjac, J.** Cytotoxic Effect of Moringa Oleifera on Colon Cancer cell lines. (Abstract presented in AVRDC - The World Vegetable Center (MORINGA SYMPOSIUM and CONGRESS) on November 15-18, 2015)

Moussa, E., Khawaja, G., **Borjac, J.** Association between Mutations in  $\beta$  Globin Gene and Sickle Cell Disease Complications in Palestinian Refugees in Lebanon. (Abstract Presented in LAAS 2015).

Swayden, M., Bekdash, A., **Borjac, J.**, Abi Habib, RJ. Effect of Recombinant Human Arginase [HuArgI(Co)-PEG5000]-Induced Arginine depletion on Colon Cancer Cells. (Abstract Presented in LAAS 2015).

Hamed M., Khachab M., Jabi S., and **Borjac J.** Cloning and identification of a novel sugar kinase in Escherichia Coli K-12. Proceedings of the international Conference on Research Trends in Science and Technology 2002.

### **Conference Organized:**

Organized a conference pertaining to PEER project that took Place at Beirut Arab University Debbieh Campus on October 24<sup>th</sup>, 2017. Conference entitled by:

**Hand in Hand towards a Better Environment.**

### **Workshop Organized:**

Co-Organized the workshop entitled “**Green Environment Pollution control**” sponsored by USAID that took place at Beirut Arab University Debbieh Campus on November 27<sup>th</sup>, 2018.

## **RESEARCH PROPOSALS:**

1. **Proposal entitled:** “Hazardous Effect of Pollutants in Deir Kanoun Dump on the Syrian Refugees and the Lebanese People”\_Grant received from the **Partnerships for Enhanced Engagement in Research (PEER) Program cycle 5.** Proposal was funded for an amount of \$159,200 over 24 months starting 2016-2018.

2. **Proposal entitled:** “ Genetic Predisposition to Endometriosis in Lebanese Female”. Grant received from **CNRS** for an amount of 26,000,000 LL over 24 months starting 2016-2018.

### **AREA of EXPERTISE:**

Molecular biology techniques such as: Cell culture, Cloning, q-PCR, PCR, DNA and RNA purification, RNA footprinting, Blotting, DNA and RNA sequencing, etc.

Protein and peptides purification using HPLC, FPLC, and the Pharmacia Smart system. Gel electrophoresis.

Eukaryotic and Prokaryotic Cell culture.

Licensed to work with radioactivity.

Mass spectroscopic techniques such as Laser Desorption and Electrospray Ionization and FAB.

Computer Programs Knowledge: Macintosh and PC programs: such as Canvas, Powerpoint, Adobe Photoshop, Gene Construction Kit, PCGENE, Microsoft office.

### **LANGUAGE PROFICIENCY**

Arabic  
English  
French

### **REFERENCES:**

Available upon request.