MARIEM SOUISSI
PhD

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LANGUAGES

Arabic
French
English
German

INFORMATICS

Word
Power point
Excel
Statistiqua
Publisher
OpenShot video editor

SKILLS

Public speaking
Team work
Emotional intelligence
Research and strategy

INTERESTS

Entrepreneurship
Sport
Reading
travelling

CAREER SUMMARY

Applied microbiology research for 9 years of research, focusing on microbial ecology, antibiotic resistance, biofilm formation, bacterial adhesion on prosthetic devices' materials and antibacterial strategies with publications in international scientific journals. Open to international scientific collaborations and eminent scientific projects on anti-biofilm strategies.

EDUCATION

2021 **PhD degree in Biological Sciences**
Laboratory of Analysis, Treatment and Valorization of Environmental Pollutants and Products LATVPEP - LR01ES16 - Faculty of Pharmacy of Monastir, Tunisia

2011 **Master in Environmental sciences**
Environmental Biomonitoring Laboratory, Coastal Ecology and Ecotoxicology Unit LBE - LR01ES14 - Faculty of Sciences of Bizerte, Tunisia

2008 **Master's degree in Life and Earth Sciences**
Faculty of Sciences of Bizerte, Tunisia

PUBLICATIONS

1. **Souissi M.**, Ben Lagha A., Chaieb K., Grenier D. **2021**. Effect of a Berry Polyphenolic Fraction on Biofilm Formation, Adherence Properties and Gene Expression of *Streptococcus mutans* and Its Biocompatibility with Oral Epithelial Cells. *Antibiotics*, *10*(1), 46. DOI : 10.3390/antibiotics10010046
2. **Souissi M,** Jabrane Azelmat, Kamel Chaieb, Daniel Grenier. **2020**. Antibacterial and anti-inflammatory activities of cardamom (*Elettaria cardamomum*) extracts: Potential therapeutic benefits for periodontal infections. *Anaerobe*. 61 : 102089. DOI: 10.1016/j.anaerobe.2019.102089
3. **Souissi M.,** Laabidi R., Aissa P., Pringault O., Ben Said O. **2018**. Influence of Bizerte city wastewater treatment plant (WWTP) on abundance and antibioresistance of culturable heterotrophic and fecal indicator bacteria of Bizerte Lagoon (Tunisia). *Ecotoxicol. Environ. Saf*. 148: 201-210. DOI: 10.1016/j.ecoenv.2017.10.002
4. Ben Said O, **Souissi M,** Ben Khelil M, Aissa P and Beyrem H. **2016**. Antibiotic Pollution Pressure on Bizerte Lagoon Isolated Bacteria. *Austin. Environ. Toxicol*. 2(1): 1009

RESEARCH INTERESTS

Infectious diseases, microbial biofilm formation, microbial adhesion on medical devices, effect of natural extracts on infectious diseases, anti-inflammatory activity and biocompatibility of antibacterial molecules.

FUNDINGS

1. National Research Internship Grant 2017-2018
2. National Research Internship Grant 2018-2019

ADMINISTRATIVE EXPERIENCE

Member of organization committee:

The XI International QPE-TVR Congress 2017 (Mahdia, Tunisia): "*Quality of Products and the Environment, Treatment and Valorisation of the Releases and Effects on Human Health*".

RESEARCH PROJECTS

1. Microorganism adhesion to prosthetic dental materials and optimization of disposal process — 2015-2021

Techniques:

Antibacterial activity using serial microdilution
Biofilm assay using Cristal violet staining
Membrane permeability using Sytox Green dye test
Adhesion tests using Fluroescence (FITC dye)
Cell viability using spectrophotometry (MTT test)
Cytokines secretion using Luminescence (ELISA assay)
Genes' expression by qRT-PCR

Findings :

- Cardamom essential oils (CEO) have an antibacterial and antibiofilm activity against cariogenic and anaerobic bacteria by destructing the cell membrane.
- CEO have an anti-inflammatory activity.
- Mixture of berries' polyphenols (Orophenol®) has an antibiofilm and anti-adhesion activities to saliva-coated hydroxyapatite (sHA) and saliva-coated nickel-chrome (sNi-Cr).
- Orophenol® does not affect the cell membrane integrity of *Streptococcus mutans* nor the viability of oral epithelial cells.
- Orophenol® reduces the adhesion of *S. mutans* to sHA after 45 minutes and to sNi-Cr after 40 minutes, by modulating the expression of *luxS* gene which regulates quorum sensing in *S. mutans*.
- Combined, Orophenol® and CEO have antibacterial properties of CEO, antibiofilm and anti-adhesion potentials of Orophenol®.

2. Impacts of the use of antibiotics released into the Bizerte lagoon (Tunisia) on antibiotic resistance of contamination bioindicator bacteria — 2008-2011

Techniques:

Bacteria enumeration by membrane filtration
MPN and UFC methods
Molecular identification using API tests
Antibiogram by diffusion disks
Antibiotic consumption survey

Findings:

- A biological pollution in Bizerte lagoon was detected nearby the outfall of WWTP.
- Heterotrophic and fecal indicator bacteria were severely antibiotic resistant mainly to ß-lactams.
- New antibiotic resistances to ß-lactams and aminoglycosides were acquired.

RESEARCH INTERNSHIPS

Oral Ecology Research Group GREB - faculty of dentistry, University of Laval, Québec, Canada.

1. Winter session (3 months) **2017-2018**
2. Fall session (3 months) **2018-2019**

REFERENCES

1. Pr Daniel Grenier

Oral Ecology Research Group GREB - faculty of dentistry, University of Laval, Québec, Canada. Pavillon de médecine dentaire, local 1752 418 656-2131, poste 407341.

Email : daniel.grenier@greb.ulaval.ca

2. Dr Olfa Ben Said

Environmental Biomonotoring Laboratory LBE, Faculty of Sciences of Bizerte, Tunisia; MELODY Group, University of Pau and Pays de l'Adour, E2S-UPPA, IPREM UMR CNRS 5254, BP 1155, Pau Cedex, 64013, France; MIRA Research Federation, University of Pau and Pays de l'Adour, E2S-UPPA, France.

Email : nourelimen@yahoo.fr

3. Dr Kamel Chaieb

Higher Institute of Biotechnology of Beja, Tunisia; Faculty of Sciences, King Abdulaziz University Jeddah, Saudi Arabia.

Email: chaieb_mo@yahoo.fr

4. Pr Mahmoudi Ezzeddine

Faculty of sciences Bizerte, Tunisia; Environmental Biomonitoring Laboratory LBE, Coastal Ecology and Ecotoxicology Unit LBE - LR01ES14 - Faculty of Sciences of Bizerte, Tunisia.

Email: ezzeddine.mahmoudi@gmail.com

OTHER SKILLS AND QUALIFICATIONS

• Certificated courses

Online course: Bacteria and Chronic infections, *Coursera.org - University of Copenhagen, Danemark*	2021
On line course: Data and Health Indicators in Public Health Practice, *Coursera.org - Johns Hopkins University, USA*	2020
Online course : Essential Epidemiologic Tools for Public Health Practice, *Coursera.org - Johns Hopkins University, USA*	2020
Cours en ligne : Outbreaks and Epidemics, *Coursera.org - Johns Hopkins Universit,y, USA*	2020
MOOC : Implementation Research : infectious diseases of poverty *World Health Organization (WHO) / Institut Pasteur of Tunis*	2020

• Certifications

ISO 9001:2015 - Quality management systems	2020
ISO 45001 :2018 - Occupational health and safety management systems	2020
WILEY Author Workshop (CNUDST webinar)	2020
ELSEVIER training « Science Direct, Scopus and Mendeley »	2016
A1 level in German from "Goethe Institut"	2009

• Scientific workshops

Workshop : SPSS Software Applied to Biology and Medicine	2016
Workshop: Bioinformatics « Protein modeling »	2016
Workshop : Water and Food Quality Control	2016

CONFERENCES AND SEMINARS PRESENTATIONS

- Souissi M. et al., **2016**. "Antibioresistance of fecal pollution indicator bacteria isolated from the bizerte lagoon near the outfall of the Sidi Ahmed treatment plant". *The XI International TVR QPE Congress 2017 (Mahdia, Tunisia)*
- Souissi M. et al., **2016**. Antibiotics (ATBs) and antibiotic resistance of bacteria isolated in the lagoon of Bizerte nearby the wastewater treatment plant. *First International Symposium of Young Researchers in Biology (Monastir, Tunisia)*
- Souissi M. et al., **2016**. Caractérisation de l'antibiorésistance des bactéries indicatrices de contamination fécale dans la lagune de Bizerte à proximité de l'émissaire de la station d'épuration Sidi Ahmed. *Seventh International Scientific Days on the Valuation of Bioresources - Biolival 2016 (Sousse, Tunisia)*
- Souissi M. et al., **2010**. Contribution of antibiotic selection pressure in the acquisition of resistance in bacterial strains isolated near a sewage treatment plant. *Fifth Colloquium of Science and Environment (Bizerte, Tunisia)*
- *Souissi M. **2010**. Bizerte lagoon suffers from the pollution. The association of Rimel forest friends Seminar.*