

MOHAMMED BENHOULA

📍 Batna, Algeria

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French, English, Arabic

Areas of expertise

- Solid experience in Microbiology
- Team spirit
- Excellent level of French and Arabic, written and spoken
- Very good level of English, written and spoken
- Computer skills: MS Office Suite, zoom, Design Expert



PROFESSIONAL EXPERIENCE

Researcher at centre de recherche en technologie agroalimentaire – November 2024- present

PhD in microbiology - September 2018-February 2024

Applied Microbiology Laboratory, University of Bejaia

- Isolate potential lipase-producing bacteria
- Monitor growth and production
- Screening strains for lipase production
- Optimize lipase production through experimental design
- Molecular identification of lipolytic bacteria

Higher education - 2022-2023

Department of Food Science, University of Bejaia

- Responsible for practical work on module: microbiological analysis of milk, microbiological analysis and control techniques, enzymology and microbial biochemistry.
- *Head of the biochemical analysis techniques workshop.*
- Co-supervision of master's students since 2019
- Participation in the organisation of workshops and conferences

Departement of Microbiology

End-of-cycle internship- February 2018- May 2018

Applied Microbiology Laboratory, University of Bejaia

- Isolate potential keratinase-producing bacteria from telluric samples.
- Monitor growth and production
- Sort strains according to production of the desired enzyme (keratinases)
- Optimize enzyme production through experimental design

Medical analysis - intern 2014

Microbiological Analysis Laboratory, Batna University Hospital, Algeria

- Analysis of biological samples taken from patients (blood, urine...)
- Data management

Medical analysis - trainee 2015

Batna Sanatorium

- Research into the presence of agents causing tuberculosis by bacterial culture.

Food analysis - trainee 2014

AURES Dairy, Batna, Algeria

- Use appropriate laboratory equipment for various analyses
- Analyze raw materials for a branded product
- Monitor product manufacturing
- Study the semi-finished and finished product (up to 15 days after CSD)

ACADEMIC BACKGROUND

PhD in Microbial Biotechnology 2018-2024

University of Bejaia, Algeria

Master's degree in Microbial Biotechnology 2016-2018

University of Bejaia, Algeria

Bachelor's degree in Applied Microbiology 2012-2015

El Hadj Lakhdar University, Batna, Algeria

Baccalauréat en Sciences Expérimentales 2009-2012

Lycée Talkhampt, Batna, Algeria

SCIENTIFIC PUBLICATIONS AND COMMUNICATIONS

1. Olive mill wastewater biodegradation for bacterial lipase production using a response surface methodology. DOI<https://doi.org/10.1007/s13399-023-04051-w>

Mohammed Benhoula¹ - Zahra Azzouz¹ - Azzeddine Bettache¹ - Marilize Le Roes-Hill² - Warda Djoudi¹ - Rima Maibeche¹ - Samir Hamma¹ - Mohamed Sabri Bensaad³ - Zahir Amghar¹ - Aya Boudjelal³ - Said Benallaoua¹ - Nawel Boucherba¹

Received: 20 November 2022 / Revised: 6 March 2023 / Accepted: 7 March 2023

2. Peroxidase-producing actinobacteria from Algerian environments and insights from the genome sequence of peroxidase-producing *Streptomyces* sp. S19

Rima Maibèche- Nawel Boucherba - Kamel Bendjeddou - Alaric Prins - Cilia Bouiche - Samir Hamma - **Mohammed Benhoula** - Zahra Azzouz – Azzeddine Bettache - Said Benallaoua - Marilize Le Roes- Hill. International Microbiology <https://doi.org/10.1007/s10123-022-00236-x>.

3. Evidence of anti-inflammatory and anti-ulcer properties of aerial parts of *Centaurea tougourensis* Boiss. and Reut. DOI:10.4314/tjpr.v20i8.14

Mohamed Sabri Bensaad, Saliha Dassamiour, Leila Hambaba, Mohamed Amine Kahoul, **Mohammed Benhoula**. Tropical Journal of Pharmaceutical Research.

4. An Insight-Based Computational Approaches to Estimate Molecular Weight Distribution, Allergenicity and Immunological Aspects, Toxicity Profile, Possible Biodegradation, Persistence and Bioaccumulation Factor of Four Phyto-Compounds. doi:10.1166/jbmb.2023.2291.

Mohamed Sabri Bensaad, Mohamed Amine Kahoul, Mokrane Khier, Debasis Mitra, **Mohammed Benhoula**, Hamsa Jameel Banjer, Rasha A. Al-Eisa, Naseh A. Algehainy, Mahmoud Helal, Amina A. M. Al-Mushhin, Rokayya Sami.

5. Statistical Optimisation of *Streptomyces* sp. DZ 06 Keratinase Production by Submerged Fermentation of Chicken Feather Meal. <https://doi.org/10.3390/fermentation10100500>.

Samir Hamma , Nawel Boucherba, Zahra Azzouz, Marilize Le Roes-Hill, Ourdia-Nouara Kernou, Azzeddine Bettache, Rachid Ladjouzi, Rima Maibèche, **Mohammed Benhoula**, Hakim Hebal, Zahir Amghar, Narimane Allaoua, Kenza Moussi, Patricia Rijo, and Said Benallaoua.

6. Enhanced protease production by *Aspergillus candidus* strain MKA05 using response surface methodology. <https://doi.org/10.1007/s13399-024-06004-3>.

Kenza Moussi, Zahra Azzouz, **Mohammed Benhoula**, Samir Hamma, Nawel Boucherba, Said Benallaoua, Ourdia-Nouara Kernou, Azzeddine Bettache.

INTERNATIONAL AND NATIONAL COMMUNICATIONS

1. Production of keratinases by recycling waste from the poultry industry on a liquid medium based on feather meal. National Seminar on Biodiversity, Medical Biology and Environmental Ecotoxicology (SNBBMEE 2019) University of Skikda, Algeria 10/30/2019 - 10/31/2019

Benhoula Mohammed; Idir walid; Azzouz Zahra; Bensaad Mohamed Sabri; Hamma Samir; Amghar Zahir; Boucherba Nawel.

2. Valorization of poultry Feathers by production of keratinases bacterial. International Conference on Waste Treatment and Valorization (ICWTV2019) University Salah Boubnider Constantine 3, Algeria 26-27th November 2019.

Benhoula Mohammed; Idir walid; Hamma Samir; Azzouz Zahra; Amghar Zahir; Boucherba Nawel.

3. Study of the biodegradation of margins and production of bacterial lipase. 1st doctoral in natural and life sciences. Bejaia. December/2019.

Benhoula Mohammed, Boucherba Nawel; Amghar Zahir; Bensaad Mohamed Sabri; Hamma Samir; Azzouz Zahra.

4. Bacterial lipases production and olive wastewater valorization. Webinar on sustainable development goals after the COVID pandemic 19. 05/13/2020-05/14/2020.

Benhoula Mohammed; Boucherba Nawel; Amghar Zahir; Bensaad Mohamed Sabri; Hamma Samir; Azzouz Zahra.

5. Biodégradation des margines par une actinobactérie lipolytique isolée localement. 1st Webinar on Green Chemistry in Environmental Protection and Sustainable Development,

Amar Telidji-Laghout 05/13/2023.

Benhoula Mohammed, Azzouz Zahra, Hamma Samir, Rahmani Rania¹, Bensaad Mohamed Sabri, Allaoua Narimane, Amghar Zahir¹, Bettache Azzeddine, Benallaoua Said, Boucherba Nawel.

6. Olive wastewater valorization and statistical optimization of lipase production by *streptomyces* sp. Strain 22dz. International Seminar on Biodiversity, Plants, Agriculture and the Environment in Mediterranean and Arid Regions. University of Batna, Algeria 12/12/2022-14/12/2022.

Benhoula Mohammed, Azzouz Zahra, Hamma Samir, Rahmani Rania¹, Bensaad Mohamed Sabri, Allaoua Narimane, Bettache Azzeddine, Benallaoua Said, Boucherba Nawel.

7. Olive wastewater valorization by bacterial lipases production. National Hybrid Seminar "Biotechnology for Innovation" (BSI - 21) University of Bejaia, Algeria 12/08/2021 – 12/09/2021.

Benhoula Mohammed; Hamma Samir; Bensaad Mohamed Sabri; Amghar Zahir; Boudjelal Aya; Azzouz Zahra; Maibeche Rima, Bouiche Celia; Bettache Azzeddine, Benallaoua Said, Boucherba Nawel.

8. Isolation and screening of lipolytic bacterial. National Scientific Days on Enzymes for Biotechnological Applications in Algeria JSNEABA National School of Biotechnology Constantine, Algeria 21/12/2020 - 22/12/2020.

Benhoula Mohammed, HAMMA Samir, BENSAAD Mohamed Sabri, AMGHAR Zahir, BOUDJELAL Aya, AZZOUZ Zahra, MAIBECHE Rima, BOUCHE Celia, BETTACHE Azzeddine, BENALLAOUA Said, BOUCHERBA Nawel.

9. Optimisation statistique de la production de lipase par *STREPTOMYCES* SP. STRAIN 22DZ. Les 5^{èmes} journées des Sciences de la Nature et de la Vie Béjaia les 6 et 7 Décembre 2022.

BENHOULA Mohammed, AZZOUZ Zahra, AMGHAR Zahir, ALLAOUA Narimane, BETTACHE Azzeddine, BENALLAOUA Said, BOUCHERBA Nawel.

10. Production, purification et caractérisation de la lipase de *Streptomyces* sp. Strain 22dz. 21st international days of biotechnology (IDB2023).

BENHOULA Mohammed, Azzouz Zahra, Bettache Azzeddine, Marilize Le Roes-Hill, Djoudi Werda, MAIBECHE Rima, Hamma Samir, Bensaad Mohamed Sabri, Amghar Zahir, Boudjelal Aya, Benallaoua Said et Boucherba Nawel.

11. Optimization of bacterial lipase production through the application of response surface methodology and the use of olive mill wastewater. 4th Conference on the Biology of Microbial Systems. LBSM Laboratory and the Ecole Normale Supérieure Cheikh Mohamed Bachir El Ibrahim de Kouba. December 3, 2022.

BENHOULA Mohammed, Azzouz Zahra, Bettache Azzeddine, Marilize Le Roes-Hill, Djoudi Werda, MAIBECHE Rima, Hamma Samir, Bensaad Mohamed Sabri, Amghar Zahir, Boudjelal Aya, Benallaoua Said and Boucherba Nawel.

12. Bioconversion of the keratinic biomass residues and biotechnological production of actinomycetal keratinase in submerged-state fermentation. SEMINAIRE INTERNATIONAL SUR LES SCIENCES NATURELLES ET DE LA VIE, 20/02/2021, Oran, ALGERIE.

Hamma Samir, Maibeche Rima, Bouiche Celia, **Benhoula Mohammed**, Bettache Azzeddine, , Azzouz Zahra, Amghar Zahir, Nouri Hamid , Boudjelal Aya, Kecha Mouloud, Djouadi Bassem et Boucherba Nawel.

13. Qualitative and quantitative screening of fungal strains producing cellulolytic and xylanolytic enzymes, SEMINAIRE INTERNATIONAL SUR LES SCIENCES NATURELLES ET DE LA VIE, 20/02/2021, Oran, ALGERIE.

Amghar Zahir, Bettache Azzeddine, Azzouz Zahra, Hamma Samir, **Benhoula Mohammed**, Bouiche Celia, Maibeche Rima, Boucherba Nawel, Kecha Mouloud.

14. Optimisation statistique de la production de kératinases de *Bacillus atrophaeus* BN2 et caractérisation physicochimique. Conférence Nationale Virtuelle (Webinaire) les Objectifs de

Développement Durables après la Pandémie du COVID-19, Université de Boumerdes, 13-14 Mai 2020.

Boucherba Nawel, **Benhoula Mohammed**, Hamma Samir, Djoudi Werda, Bettache Azzeddine et Benallaoua Said.

15. Saccharification de coproduits agro-industriels avec des enzymes fongiques. 1er Séminaire National Hybride, Biotechnologie Et Biodiversité Microbienne (BBM, 2022), Université Abbes Laghrour Khenchela, Algérie, 26 et 27 Octobre 2022.

Azzouz Z, Bettache A, Boucherba N, Gahfif O, Amghar Z, Maibeche R, Hamma S, **Benhoula M**, Allaoua N, Moussi K, Houfani A-A, Djerroud N et Benallaoua S.

16. Saccharification de biomasse lignocellulosique avec des enzymes fongiques produites en fermentation mixte. Les 5èmes journées des sciences de la nature et de la vie Université de Bejaia, Algérie, 6 et 7 Décembre 2022.

Azzouz Z, Bettache A, Boucherba N, Djoudi F, Gahfif O, Amghar Z, Maibeche R, Hamma S, **Benhoula M**, Allaoua N, Moussi K, Houfani A-A, Djerroud N, Djaoud K Et Benallaoua S.

17. Production, purification et caractérisation d'endoglucanase d'*Aspergillus niger* produite par fermentation solide de son de blé. Journées Nationales en : Biotechnologies et Bioinformatique (JNBTT). Université des Frères Mentouri-Constantine, Algérie, 10 et 11 Octobre 2022.

Azzouz Z, Bettache A, Boucherba N, Gahfif O, Bouiche C, Amghar Z, Maibeche R, Hamma S, Benhoula M, Allaoua N, Moussi K, Prieto A, de Eugenio L-I, Martinez M-J et Benallaoua S.

18. SÉLECTION DES LACTOBACILLES A CARACTÈRE PROBIOTIQUE ISOLES A PARTIR DES SELLES DE NOURISSEMENTS, 6èmes journées des sciences de la nature et de la vie, Université de Bejaia, 28, 29 et 30 novembre 2023.

Rania RAHMANI, Amel AIT MEDDOUR, Samia FARADJI-HAMMA, **Mohammed BENHOULA**.

19. Peroxidase Producing Actinobacteria from Algerian Environments and Insights from the Genome Sequence of Peroxidase Producing *Streptomyces* sp. S19. The 10th international conference on chemical and biological sciences, Japan, June 8-11, 2023.

Rima Maibeche, Marilize LE ROES-HILL, Mohammed BENHOULA, Samir HAMMA, Said BENALLAOUA, Nawel BOUCHERBA.

20. Activité antioxydante de glucuronoxylanes (UXOS) et arabinoxylanes (AXOS) produits d'hydrolyse d'endoxylanes de *Bacillus safensis* CBLMA18, Journées Scientifiques Nationales sur les Enzymes à Applications Biotechnologiques en Algérie, Ecole Nationale Supérieure de Biotechnologie -Taoufik KHAZNADAR – Constantine, 21 et 22 décembre 2020.

BOUCHE Celia, SUSANA V. Valenzuela, JAVIER PASTOR F.I, BETTACHE Azzeddine, MAIBECHÉ Rima, AZZOUZ Zahra, HAMMA Samir, **BENHOULA Mohammed**, BENALLAOUA Said, BOUCHERBA Nawel.

21. Optimisation de la production de peroxydase des souches d'actinomycètes isolées au niveau de la wilaya de Béjaia, Ecole Nationale Supérieure de Biotechnologie -Taoufik KHAZNADAR – Constantine, 21 et 22 décembre 2020.

MAIBECHÉ Rima, LE ROES-HILL Marilize, BENDJEDDOU Kamel, PRINS Alaric, BOUCHE Celia, AZZOUZ Zahra, HAMMA Samir, **BEN HOULA Mohammed**, AMGHAR Zahir, BETTACHE Azzeddine, BENALLAOUA Said, BOUCHERBA Nawel.

22. Caractérisation des potentialités kératinolytiques d'une souche actinomycète isolée dans la région de Bejaïa, Ecole Nationale Supérieure de Biotechnologie -Taoufik KHAZNADAR – Constantine, 21 et 22 décembre 2020.

HAMMA Samir, **BENHOULA Mohammed**, BETTACHE Azzeddine, JAOUADI Bassem, BOUCHERBA

Nawel.

23. Lipase production from *Streptomyces* Sp. Strain 22 dz purification and characterization.

First International Conference in Applied Microbiology and Biotechnology (ICAMB-2024), held in Bejaia, Algeria on the 16th and 17th of Octobre 2024.

M. Ben houla, R. Rahmani, Z. Azzouz, K. Moussi, N. Benallaoua, S. Hamma, M.S. bensaad, S. Benallaoua, M. Kecha, N. Boucherba.