



Dr. Taoufiq Benali

Assistant Professor

Environment and Health Team in Polydisciplinary Faculty of Safi, Cadi Ayyad University, Marrakech, Morocco.

Specialty: Biotechnology.

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Professional Experiences

Since 2020 : Assistant Professor, Polydisciplinary Faculty of Safi Cadi Ayyad University, Marrakech, Morocco.

Educational Experiences and Specialty

Since 2020: Course of Undergraduate Students: **Biophysic**, Department of Biology, Polydisciplinary Faculty of Safi Cadi Ayyad University, Marrakech, Morocco.

Since 2020: Course of Undergraduate Students: **Introduction to the Environment and Legislation**, Department of Biology, Polydisciplinary Faculty of Safi Cadi Ayyad University, Marrakech, Morocco.

Since 2023: Course of Undergraduate Students: **General Microbiology**, Department of Biology Polydisciplinary Faculty of Safi Cadi Ayyad University, Marrakech, Morocco.

Participation in Research Projects

Project

Title : Valorization of olive stone by-product as a green source of new value-added products in the context of the circular bioeconomy and sustainability.
PI: Prof. Abdelhakim Bouyahya
Organisation : Mohammed Université in Rabat,
Funding Organization: PRIMA
Funding : 1 000 000 DH
Period : 2023-2026

Project

Title : Moroccan medicinal and aromatic plants: anticancer and antibacterial activities, and Compounds derived from eugenol: targeted hemisynthesis via the Structure-Activity relationship and investigation of anti-SARS-CoV-2 activity, **Active Member**.
PI : Prof. Mohamed BAKHOUCHE
Organisation: Faculty of Sciences, Chouaib Doukkali El Jadida University,
Funding Organization: Agence universitaire de la Francophonie (AUF),
Funding: 300000 MAD
Period: 2022

Expertise & Editorial Activities

Editor & Guest Editor

- Review Editor in Translational Pharmacology (Frontiers in Pharmacology Journal)
- Guest Associate Editor in Pharmacology of Infectious Diseases (Frontiers in Pharmacology Journal).
- Reviewer Board Member of Molecules Journal MDPI.
- Reviewer of several journals in Elsevier, MDPI, Frontiers, Springer Nature, and Taylor & Francis editorials.

Research Interests and Publications

Research Interests

- ✓ Ethnopharmacological prospecting of medicinal and aromatic plants.
- ✓ Phytochemistry of Medicinal Plants.
- ✓ Biological and pharmacological properties of natural products from aromatic and medicinal plants.
- ✓ Production of natural plant-based biopreservatives.
- ✓ Natural antimicrobial drugs and their mechanisms.
- ✓ Bioremediation of Textile Effluents by Textile Dye Reducing Bacteria.

Selected Papers Published in 2021/2023

- **Benali, T.**, Lemhadri, A., Harboul, K., Chtibi, H., Khabbach, A., Jadouali, S. M., ... & Akhazzane, M. (2023). Chemical Profiling and Biological Properties of Essential Oils of *Lavandula stoechas* L. Collected from Three Moroccan Sites: In Vitro and In Silico Investigations. *Plants*, 12(6), 1413.
- Chtibi, H., Harboul, K., **Benali, T.**, Bouyahya, A., Abdelamjid, K., Louahlia, S., ... & Hammani, K. (2023). Comparative Study of Antibacterial Activity of *Cistus ladanifer* L. Leaves Extracted by Ultrasound-Assisted Extraction and Maceration. *Progress In Microbes & Molecular Biology*, 6(1).
- Lemhadri, A., Achtak, H., Lamraouhi, A., Loidani, N., **Benali, T.**, Dahbi, A., ... & Lyoussi, B. (2023). Diversity of Medicinal Plants Used by the Local Communities of the Coastal Plateau of Safi Province (Morocco). *Frontiers in Bioscience-Scholar*, 15(1), 1.
- Touhtouh, J., Laghmari, M., **Benali, T.**, Aanniz, T., Lemhadri, A., Akhazzane, M., ... & Hammani, K. (2023). Determination of the antioxidant and enzyme-inhibiting activities and evaluation of selected terpenes' ADMET properties: *in vitro* and *in silico* approaches. *Biochemical Systematics and Ecology*, 111, 104733.
- Balahbib, A., El Omari, N., Bakrim, S., **Benali, T.**, Ullah, R., Alotaibi, A., ... & Bouyahya, A. Evaluation of Antioxidant, Antidiabetic, and Dermatoprotective Properties of *Lavandula Stoechas* Essential Oils and Their Main Chemotypes. Antidiabetic, and Dermatoprotective Properties of *Lavandula Stoechas* Essential Oils and Their Main Chemotypes.

- El Omari, N., Mrabti, H. N., **Benali, T.**, Ullah, R., Alotaibi, A., Abdullah, A. D. I., ... & Bouyahya, A. (2023). Expediting Multiple Biological Properties of Limonene and α -Pinene: Main Bioactive Compounds of *Pistacia lentiscus* L., Essential Oils. *Frontiers in Bioscience-Landmark*, 28(9), 229.
- El Omari, N., Balahbib, A., Bakrim, S., **Benali, T.**, Ullah, R., Alotaibi, A., ... & Bouyahya, A. (2023). Fenchone and camphor: Main natural compounds from *Lavandula stoechas* L., expediting multiple *in vitro* biological activities. *Heliyon*.
- Bakrim, S., Aboulaghras, S., Aanniz, T., **Benali, T.**, El Omari, N., El-Shazly, M., ... & Bouyahya, A. (2023). Effects of Mediterranean diets and nutrigenomics on cardiovascular health. *Critical reviews in food science and nutrition*, 1-20.
- Belmehdi, O., Sahib, N., **Benali, T.**, Fernández-Galleguillos, C., Lee, L. H., Benkhaira, N., ... & Bouyahya, A. (2023). Natural Sources, Bioactivities, and Health Benefits of Cianidanol: First Update. *Food Reviews International*, 1-13.
- Bouyahya, A., Taha, D., **Benali, T.**, Zengin, G., El Omari, N., El Hachlafi, N., ... & Sahib, N. (2023). Natural sources, biological effects, and pharmacological properties of cynaroside. *Biomedicine & Pharmacotherapy*, 161, 114337.
- Kanzouai, Y., Chalkha, M., Hadni, H., Laghmari, M., Rachid Bouzammit, R., Nakkabi, A., **Benali, T.**, Tüzün, B., Akhazzane, M., El Yazidi, M., Al Houari, G. (2023). Design, synthesis, *in-vitro* and *in-silico* studies of chromone-isoxazoline conjugates as anti-bacterial agents. *Journal of Molecular Structure*, 1293, 136205.
- Kanzouai, Y., Chalkha, M., Hadni, H., Laghmari, M., Rachid Bouzammit, R., Nakkabi, A., **Benali, T.**, Tüzün, B., Akhazzane, M., El Yazidi, M., Al Houari, G. (2023). Design, synthesis, *in-vitro* and *in-silico* studies of chromone-isoxazoline conjugates as anti-bacterial agents. *Journal of Molecular Structure*, 1293, 136205.
- Sabri, M., Habbadi, K., Achbani, E. H., Benkirane, R., El Handi, K., Ou-Zine, M., **Benali, T.**, Elbeaino, T. (2023). Antagonistic effect of *Leuconostoc mesenteroides* on grapevine crown gall and fire blight. *Journal of Crop Improvement*, 37(4), 431-446.
- Sennaj, R., Lemriss, S., Souiri, A., Kabbaj, S. E., Chafik, A., Essamadi, A. K., **Benali, T.**,... & Aassila, H. Eco-friendly degradation of reactive red 195, reactive blue 214, and reactive yellow 145 by *Klebsiella pneumoniae* MW815592 isolated from textile waste. *Journal of Microbiological Methods*, 2023, 204, 106659.
- Sennaj, R., Dari, K., Timinouni, M., **Benali, T.**, Fassouane, A., Harboul, K., & Aassila, H. (2023). Evaluation of Bioremediation Potentiality of *Bacillus mojavenensis* Isolated from Wastewater for the Elimination of Reactive Yellow 145 and Methyl Orange. *Current Microbiology*, 80(10), 326.
- **Benali, T.**, Jaouadi, I., Ghchime, R., El Omari, N., Harboul, K., Hammani, K., ... & Bouyahya, A. The Current State of Knowledge in Biological Properties of Cirsimaritin. *Antioxidants*, 2022, 11(9), 1842.
- **Benali, T.**, Bakrim, S., Ghchime, R., Benkhaira, N., El Omari, N., Balahbib, A., ... & Bouyahya, A. Pharmacological insights into the multifaceted biological properties of quinic acid. *Biotechnology and Genetic Engineering Reviews*, 2022, 1-30.

- Bouyahya, A., El Allam, A., Aboulaghras, S., Bakrim, S., El Menyiy, N., Alshahrani, M. M., Al Awadh, A.A., **Benali, T.**, & Mubarak, M. S. (2022). Targeting mTOR as a cancer therapy: recent advances in natural bioactive compounds and immunotherapy. *Cancers*, 14(22), 5520.
- El Ouadi, Y., Bendaif, H., Assaggaf, H., Abdallah, E. M., Mekkaoui, M., Mrabti, H. N., Mansouri, M., **Benali, T.**, Bouyahya, A., & Bouyanzer, A. (2022). Efficacy of *Pelargonium graveolens* essential oils against some postharvest fungal diseases of apple. *Advancements in Life Sciences*, 9(2), 195-201.
- Bakrim, S., Benkhaira, N., Bourais, I., Benali, T., Lee, L. H., El Omari, N.,... **Benali, T.**, ... & Bouyahya, A. Health Benefits and Pharmacological Properties of Stigmasterol. *Antioxidants*, **2022**, 11(10), 1912.
- Taha, D., El Hajjaji, S., Mourabit, Y., Bouyahya, A., Lee, L. H., El Menyiy, N., ... & Bourais, I. (2022). Traditional Knowledge, Phytochemistry, and Biological Properties of *Vachellia tortilis*. *Plants*, 11(23), 3348.
- Bouyahya, A., El Omari, N., Bakha, M., Aanniz, T., El Menyiy, N., El Hachlafi, N., ... **Benali, T** & Mubarak, M. S. Pharmacological properties of Trichostatin A, focusing on the anticancer potential: A comprehensive review. *Pharmaceuticals*, **2022**, 15(10), 1235.
- El Omari, N., Jaouadi, I., Lahyaoui, M., **Benali, T.**, Taha, D., Bakrim, S., ... & Bouyahya, A. Natural Sources, Pharmacological Properties, and Health Benefits of Daucosterol: Versatility of Actions. *Applied Sciences*, **2022**, 12(12), 5779.
- Aboulaghras, S., Sahib, N., Bakrim, S., **Benali, T.**, Charfi, S., Guaouguaou, F. E., ... & Bouyahya, A. Health benefits and pharmacological aspects of chrysoeriol. *Pharmaceuticals*, **2022**, 15(8), 973.
- Bakrim, S., Machate, H., **Benali, T.**, Sahib, N., Jaouadi, I., Omari, N. E., ... & Bouyahya, A. Natural Sources and Pharmacological Properties of Pinosylvin. *Plants*, **2022**, 11(12), 1541.
- Herrera-Calderon, O., Saleh, A. M., Yepes-Perez, A. F., Aljarba, N. H., Alkahtani, S., Batiha, G. E. S., ... & **Benali, T.** Computational Study of the Phytochemical Constituents from *Uncaria tomentosa* Stem Bark against SARS-CoV-2 Omicron Spike Protein. *Journal of Chemistry*, **2022**, 2022.
- Bouyahya, A., El Hachlafi, N., Aanniz, T., Bourais, I., Mechchate, H., **Benali, T.**, ... & El Omari, N. (2022). Natural Bioactive Compounds Targeting Histone Deacetylases in Human Cancers: Recent Updates. *Molecules*, **2022**, 27(8), 2568.
- Bouyahya, A., Chamkhi, I., Balahbib, A., Rebezov, M., Shariati, M. A., Wilairatana, P., S. Mubarak, M., **Benali, T.**, El Omari, N. Mechanisms, anti-quorum-sensing actions, and clinical trials of medicinal plant bioactive compounds against bacteria: a comprehensive review. *Molecules*, **2022**, 27(5), 1484.
- Bouyahya, A., El Omari, N., Hakkour, M., El Menyiy, N., **Benali, T.**, Kulikov, D., ... & Chamkhi, I. A review on transcriptomic and metabolomic responses of plants to nanopollution. *Environmental Science and Pollution Research*, **2022**, 1-17.
- El Menyiy, N., El Omari, N., Balahbib, A., Benali, T., Guaouguaou, F. E., Charfi, S., & Bouyahya, A. Herbal terpenoids in healthcare. In *Herbal Biomolecules in Healthcare Applications* (pp. 313-361). Academic Press, **2022**.

- Bouyahya, A., Mechchate, H., **Benali, T.**, Ghchime, R., Charfi, S., Balahbib, A., ... & Omari, N. E. Health benefits and pharmacological properties of carvone. *Biomolecules*, **2021**, 11(12), 1803.
- Chamkhi, I., El Omari, N., Balahbib, A., El Menyiy, N., Benali, T., & Ghoulam, C. (2021). Is the rhizosphere a source of applicable multi-beneficial microorganisms for plant enhancement?. *Saudi Journal of Biological Sciences*.
- Abdelaali, B., El Menyiy, N., El Omari, N., **Benali, T.**, Guaouguaou, F. E., Salhi, N., ... & Bouyahya, A. Phytochemistry, Toxicology, and Pharmacological Properties of *Origanum elongatum*. *Evidence-Based Complementary and Alternative Medicine*, **2021**, 2021.
- Chamkhi, I., **Benali, T.**, Aanniz, T., El Menyiy, N., Guaouguaou, F. E., El Omari, N., ... & Bouyahya, A. Plant-microbial interaction: The mechanism and the application of microbial elicitor induced secondary metabolites biosynthesis in medicinal plants. *Plant Physiology and Biochemistry*, **2021**, 167, 269-295.
- El Menyiy, N., Guaouguaou, F. E., El Baaboua, A., El Omari, N., Taha, D., Salhi, N., Mohammad Ali Shariati, M.A., Aanniz, T., **Benali, T.**, & Bouyahya, A. Phytochemical properties, biological activities and medicinal use of *Centaurium erythraea* Rafn. *Journal of Ethnopharmacology*, **2021**, 114171.
- **Benali, T.**, Habbadi, K., Bouyahya, A., Khabbach, A., Marmouzi, I., Aanniz, T., ... & Hammani, K. Phytochemical Analysis and Study of Antioxidant, Anticandidal, and Antibacterial Activities of *Teucrium polium* subsp. *polium* and *Micromeria graeca* (Lamiaceae) Essential Oils from Northern Morocco. *Evidence-Based Complementary and Alternative Medicine*, **2021**, 2021
- Mrabti, H. N., Bouyahya, A., Ed-Dra, A., Kachmar, M. R., Mrabti, N. N., **Benali, T.**, ... & Faouzi, M. E. A. Polyphenolic profile and biological properties of *Arbutus unedo* root extracts. *European Journal of Integrative Medicine*, **2021**, 101266.
- El Omari, N., Guaouguaou, F. E., El Menyiy, N., **Benali, T.**, Aanniz, T., Chamkhi, I., ... & Bouyahya, A. Phytochemical and biological activities of *Pinus halepensis* Mill., and their ethnomedicinal use. *Journal of Ethnopharmacology*, **2021**, 268, 113661
- Bouyahya, A., El Omari, N., Elmenyiy, N., Guaouguaou, F-Z., Hakkour, M., Balahbib, A., **Benali, T.**, El Baaboua, A., Belmehdi, O. Therapeutic strategies of COVID-19: from natural compounds to vaccine trials. *Biointerface Research in Applied chemistry*. **2021**, 11, 8318 – 8373.
- Bouyahya, A., Chamkhi, I., **Benali, T.**, Guaouguaou, F-E., Balahbib, A., El Omari, N., Taha, D., Belmehdi, O., Ghokhan, Z., El Menyiy, N. Traditional use, Phytochemistry, Toxicology, and Pharmacology of *Origanum majorana* L. *Journal of Ethnopharmacology*. *Journal of Ethnopharmacology*. **2021**, 265, 113318
- Belmehdi, O., Hakkour, M., El Omari, N., Balahbib, A., Guaouguaou, F. E., **Benali, T.**, ... & Bouyahya, A. Molecular structure, pathophysiology, and diagnosis of COVID-19. *Biointerface Research in Applied Chemistry*, **2021**, 11(3), pp. 10215–10237.
- Bouyahya, A., El Omari, N., Elmenyiy, N., Guaouguaou, F-Z., Hakkour, M., Balahbib, A., **Benali, T.**, El Baaboua, A., Belmehdi, O. Therapeutic strategies of COVID-19: from natural compounds to vaccine trials. *Biointerface Research in Applied chemistry*. **2021**, 11, 8318 – 8373.