





Curriculum Vitæ Pr. Bnouham Mohamed Research Professor

Professional adress

University Mohamed Ist

Faculty of Sciences, Department of Biology,

Laboratory of Bioresources, Biotechnology, Ethnopharmacology and Health (honorific member)

BP: 717, 60000, Oujda, Morocco

Home adress

45, rue Errazi, Lot Al irfane; Oujda 60 040; Morocco

Personal phone: GSM: 21267 627496

Email: mbnouham@yahoo.fr

Birth: 02 – 03 – 1959 in Casablanca; Morocco

Professor of Biology in Faculty of Sciences, University Mohamed first, Oujda (since: Nov.

1986) PES, grade D

Education

| December 1995 | Faculty of Sciences, University Mohamed first, Oujda, Morocco |
|----------------|---|
| | Doctorat d'état |
| September 1986 | Faculty of Sciences, University Mohamed V, Rabat, Morocco |

Diplôme d'étude supérieur (DES)

June 1982 Faculty of Sciences, University Mohamed V, Rabat Morocco

DEA (physiologie rénale)

June 1981 Faculty of Sciences, University Mohamed V, Rabat, Morocco

Maîtrise de Biologie

June 1977 High school Hassan II, Safi, Morocco

Baccalauréat sciences expérimentales

Languages

ArabicOral: Native speakerWrite: NativeFrenchOral: good levelWrite: good levelEnglishOral: School levelWrite: Good level

RECENT RESEARCH GRANTS

- **Projet PPR2**, , 2016-2019, 67 000 \$; Reponsable M. Bnouham.
- **Projet URAC-40**, 2011-2013, 36 000 \$; Reponsable H. Mekhfi.
- ♣ *Projet CUD-Santé (Maroco-belge)* « Epidémiologie des de l'hypertension arterielle et du diabète au Maroc oriental. » Responsable: Pr. A. Ziyyat (juin 2008-2012).
- ♣ <u>Projet CUD-Santé (Maroco-belge)</u> « Ethnopharmacologie de quelques plantes médicinales du Maroc oriental ». Responsable: Pr. H. Mekhfi (juin 2008-2012).
- Projet CUD-Santé (Maroco-belge) « Valorisation et qualité des produits alimentaires ».
 Pr. E. Essaalaoui (juin 2008-2012).
- ♣ <u>Projet PARS</u>: Cardio-vascular and renal effects of *Arbutus unedo* and *Urtica dioica*: Research of antihypertensive natural products. Réf: médecine 80, Responsable: A. Legssyer.
- ♣ <u>Projet CNCPRST-INSERM 2000</u>: Research of new antihypertensive natural products.
 Réf: N/L 37/00 du 19/01/00, Responsable: A. Legssyer.
- Projet PROTARS III: Research of new antidiabetic natural products. Réf: D14/10, 22 000
 \$; Responsable: M. Bnouham.
- **Projet OMS ID RPC.02/80**: Isolation of new antihypertensive substances from plants used in the phytotherapy of hypertension in Eastern Morocco. 10 000 \$ Responsable: A. Legssyer.
- **4 Projet PGR**: Projet global de recherche de l'université. Responsable: F. Atmani

ORGANISATION OF SCIENTIFIC MANIFESTATIONS

- Premier congrès National d'Endocrinologie Comparée; Fès: septembre 1986.
- ♣ Cinquième congrès National d'Endocrinologie comparée, et de la IV école internationale de Physiologie; Oujda 20-22 décembre 1997.
- Premier congrès national des herboristes Marocains; Oujda mai 2002.
- ♣ Congrès International Sur les Plantes Médicinales, Errachidia, 16-19 Mars, 2005.
- Congrès SIPAM 3, Oujda, mai 2008.
- ♣ UMP Oujda: Le premier Workshop sur l'entreprenariat dans le domaine de l'industrie des olives de table. 5-6 Octobre 2009. Faculté des sciences, Oujda.
- → Journées d'informations et de formations sur le thème : Pour un usage intelligent et électique des ressources documentaires électroniques, 26, 27 et 28 Avril 2012, EST, Oujda, Université Mohamed Premier.
- ♣ Conférence : Recherche bibliographiques, bases de données de Elsevier, Etats des lieux à la faculté des Sciences d'Oujda.
- Journées sur l'éthique des sciences, 11 Avril, 2013. FSO, Oujda, Université Mohamed Premier.

Conférence : Ethique dans les publications scientifiques

PARTICIPATION IN THE PH.D. EXAMINING BOARDS

- ♣ Slisli youssef, « Etude des effets de la calcitonine, du corticotropin releasing factor et de la neurotensine sur le sommeil chez le rat ». Thèse de Troisième cycle soutenue le 15/06/1996.
- Rapporteur de thèse de Slisli Youssef, « Etude des effets de l'injection intracérébrale de l'interleukine-1ß sur le sommeil chez le rat ». Thèse d'état soutenue le 23/10/1999.
- ♣ Gseyra Nadia, « Etude Phytochimique d'Artemisia herba alba Asso. et Peganum harmala L. et l'évolution de la toxicité de Peganum harmala pendant son cycle phénologique en relation avec le comportement nutritionnel des ovins et des bovins dans le périmètre pastoral de Tafrata (Maroc oriental) » Doctorat d'état, soutenue le 9 /11/2006.
- ♣ Rapporteur de thèse de Rachid Jbilou, « Recherche de plantes bioinsecticides: effets sur un insecte ravageur des denrées alimentaires *Tribolium castaneum* (Coléoptères) ». Doctorat national soutenu le 25/11/2006.
- Rapporteur de thèse Ahmed Lemhadri, « Evaluation pharmacologique de l'activité anti-hyperglycémiante et étude experimentale de l'effet sur la résistance à l'insuline

- de quelques plantes médicinales utilisées dans le traitement du diabète dans la région de Tafilalet. » Doctorat national soutenu le 13/01/2007.
- Rapporteur de la thèse de Kacem Rharrabe : Effets et perception gustative des phytoecdystéroïdes chez un insecte ravageur *Plodia interpunctella* (Lépidoptères, Pyralidés). Doctorat national soutenu le 18/12/2007.
- ♣ Encadrant de la thèse de M^{elle} Merhfour Fatima Zahra (Thèse Nationale: 2002-2006): Etude de l'effet antihyperglycemiant chez le rat de quatre plantes médicinales réputées antibiabètiques au Maroc oriental (*Arbutus unedo, Ptychotis verticillata, Thymelaea hirsuta et Urtica dioïca*). Soutenue le 26/01/2008.
- Examinateur de la thèse de Haouari Mohamed : Etude des effets de deux plantes médicinales : Arbutus unedo et Urtica dioica sur la fonction plaquettaire chez le rat et chez l'homme : Recherche de l'effet antiagrégant et exploration du mécanisme d'action. Doctorat national Soutenu le 23/02/2008.
- Examinateur de la thèse de Skiker Mounia
- ♣ Encadrant de la thèse de Bellahcen Said (Thèse Nationale: 2006-2012): **Etude de l'effet** antidiabétique d'*Argania spinosa* chez le rat. Soutenue le 26/01/2012.
- ♣ Encadrant de la thèse de ABID Sanae (Thèse Nationale: 2010-2014): **Etude de l'effet** antidiabétique de *Thymelaea hirsuta* via l'inhibation de l'alpha-glucosidase. Soutenue le 1/12/2014.
- ♣ Encadrant de la thèse de Berraouan Ali (Thèse Nationale: 2011-2015): Contribution à l'étude de l'effet antidiabétique de l'huile des graines du figuier de Barbarie (Opuntia ficus-indica L. MILL.). Soutenue le 14/03/2015.
- ♣ Encadrant de la thèse de Hayat Ouassou. (Thèse Nationale: 2015-2019): Effet de l'effet antidiabétique de *Caralluma europaea*. Soutenue le 23 /11 /2019.
- ♣ Encadrant de la thèse de Bouhrim Mohamed (Thèse Nationale: 2018-2021): Etude de l'effet antihyperglycémiant et antidiabétique de l'huile des graines d'*Opuntia dillenii*. Soutenue le 10/04/2021.
- ♣ Encadrant de la thèse Daoudi Nour Elhouda (Thèse Nationale: 2018-2022): Etude de l'effet antidiabétique des graines d'Argania spinosa L. Skeels torréfiées et non torréfiées. Soutenue le 14/09/2022.
- ♣ Encadrant de la thèse de Saliha Bouknana (Thèse Nationale: 2016-2022): Etude de l'effet antihyperglycémiant et antidiabétique de l'extrait aqueux des fruits d'Ammodaucus leucotrichus Coss. & Dur.. Soutenue le 24/09/2022.
- ♣ Encadrant de la thèse de Amal el rherabi (Thèse Nationale: 2019-2023): **Etude de l'effet** antihyperglycémiant et antidiabétique de l'extrait aqueux de *Lavandula stoechas*. Soutenue le 14/01/2024.

♣ Encadrant de la thèse de Rhizlan Abdnim (Thèse Nationale: 2019-2023): Valorisation de l'huile des graines d'Opuntia ficus-indica : effets antidiabétiques et antiglycation . Soutenue le 10/02/2024.

MEMBERSHIP IN SOCIETIES, COMMITTES AND REFEREE ACTIVITIES

- **♣** Expert member of CNRST (committee 2) 2011.
- **Expertise** of 30 scientific research projects (CNRST and University Mohammed VI Polytechnique, Bengurir)
- ♣ Head of Laboratory of Physiology and Ethnopharmacology (2006-2010)
- Member of Committee of Laboratory of Physiology and Ethnopharmacology (2006-2010).
- ♣ Coordinator of doctoral "Life Sciences and Environment" (2008-2012).
- ♣ Member UFR Doctorat Physiology and Pharmacology (2004-2008).
- ♣ Member UFR-DESA Applied Biochemistry (2002-2004).
- Member UFR-DESA Aromatic and Medicinal Plants (2003-2007).
- ♣ Member Master Aromatic and Medicinal Plants (2009-2011).
- ♣ Member adviser of the office of the Moroccan association of the compared endocrinology and medicinal plants.
- ♣ Expert member (list of the experts of the ministry for the higher education, scientific research and management training).
- ♣ Expert member (list of the experts of University Mohammed VI Polytechnique Bengurir, Morocco).
- ♣ Elected member of the university council (Mohamed Ist) 1997-1999.
- Advisory board member of *Scientific Journal International* (SJI).
- ♣ Advisory board member of *Tang* (journal).
- Littorial member in International Journal of Pharmacy and Pharmaceutical Sciences.

Referee member in scientific journals:

- **↓** Journal of Medicinal Food (J Med Food).
- **♣** Phytotherapy Research
- **↓** Journal of Ethnopharmacology
- **Human and Experimental Toxicology** (Hum Exp Tox).

- **↓** International journal of Pharmacology.
- **♣** Brazilian Journal of Pharmacology
- **↓** Indian Journal of Pharmacology (IJP).
- **♣** Pharmacognosy magazine.
- **↓** Iranian Journal of Pharmacology and Therapeutics (IJPT).
- **♣** African Journal of Traditional Complementary and Alternative Medicines (Af. J Tr. CAM).
- **↓** Journal of Applied Biomedicine. (J Appl Biomed).
- **↓** International journal of green pharmacy
- **♣** Recent Patents on Endocrine, Metabolic & Immune Drug Discovery
- **↓** Journal of Diabetes
- Pharmaceutical Biology

TEACHING ACTIVITIES

- Cellular biology, Nutrition, Endocrinology, Thermoregulation, Renal physiology, Pharmacology, Toxicology (in french).
- Creation and responsibility of animal breeding, department of Biology, Faculty of Sciences, Oujda.

| Nature de | Cycle | Année | Institution |
|-------------------------------------|---|------------------------|---------------------|
| l'enseignement | | universitaire | |
| Endocrinologie, thermorégulation | 2éme année, 2 ^{ème} cycle | 2000-2005 | Fac sciences, Oujda |
| Nutrition et dépense énergétique | DESA, Biochimie appliquée aux sciences agroalimentaires | 2000-2001 | Fac sciences, Oujda |
| Pharmacologie endocrinienne | DESA, Biochimie appliquée aux sciences agroalimentaires | 2000-2001 | Fac sciences, Oujda |
| Pharmacologie endocrinienne | DESA, Plantes médicinales et aromatiques | 2003-2004 2005-2006 | Fac sciences, Oujda |
| Généralités en Toxicologie | DESA, Plantes médicinales et aromatiques | 2005-2006 | Fac sciences, Oujda |
| Plantes Toxiques | DESA, Plantes médicinales et aromatiques | 2006-2007 | Fac sciences, Oujda |

| Endocrinologie | S6, filière SVI | 2005-2011 | Fac sciences, Oujda |
|------------------------|-----------------------|-----------|---------------------|
| Rédaction de Projet de | S6, filière SVI | 2005-2011 | Fac sciences, Oujda |
| fin d'études | | | |
| Toxicologie | Master | 2007-2023 | Fac sciences, Oujda |
| | Agroalimaentaire | | |
| Toxicologie | Master Physiologie et | 2018-2023 | Fac sciences, Oujda |
| | ethnopharmacologie | | |

LIST OF PUBLICATIONS

2024

Bouakline H, Bouknana S, Merzouki M, Ziani I, Challioui A, **Bnouham M**, Tahani A, El Bachiri A. The Phenolic Content of *Pistacia lentiscus* Leaf Extract and Its Antioxidant and Antidiabetic Properties. Scientific World Journal. 2024 Feb 7;2024.

Ouassou H, Elhouda Daoudi N, Bouknana S, Abdenim R, **Bnouham M**. A :2 Review of Antidiabetic Medicinal Plants as a Novel Source of hosphodiesterase Inhibitors Future Perspective of New Challenges against Diabetes Mellitus. Med Chem. 2024 Jan 23.

Kadi M, Berraouaan A, Driouech M, Ziyyat A, Mekhfi H, Bnouham M, Legssyer A. Computational Evaluation of Bioactive Compounds from *Dysphania ambrosioides* Leaves. Chem Biodivers. 2024 Jan 22:

2023

Haddou S, Elrherabi A, Loukili EH, Abdnim R, Hbika A, Bouhrim M, Al Kamaly O Saleh A, Shahat AA, **Bnouham M**, Hammouti B, Chahine A. Chemical Analysis of the Antihyperglycemic, and Pancreatic α-Amylase, Lipase, and Intestinal α-Glucosidase Inhibitory Activities of *Cannabis sativa* L. Seed Extracts Molecules. 2023 Dec 22;29(1):93.

Zahrae Radi F, Bencheikh N, Anarghou H, Bouhrim M, Alqahtani AS, Hawwal MF Noman OM, **Bnouham M**, Zair T. Quality control, phytochemical profile, and biological activities of *Crataegus monogyna* Jacq. and *Crataegus laciniata Ucria* fruits aqueous extracts. Saudi Pharm J. 2023 Oct;31(10).

.

Elrherabi A, Bouhrim M, Abdnim R, Berraaouan A, Ziyyat A, Mekhfi H, Legssyer A, **Bnouham M**. Antihyperglycemic potential of the *Lavandula stoechas* aqueous extract via inhibition of digestive enzymes and reduction of intestinal glucose absorption. J Ayurveda Integr Med. 2023 Sep-Oct;14(5).

Ouahabi S, Loukili EH, Daoudi NE, Chebaibi M, Ramdani M, Rahhou I, **Bnouham M** Fauconnier ML, Hammouti B, Rhazi L, Ayerdi Gotor A, Dépeint F, Ramdani M. Study of the Phytochemical Composition, Antioxidant Properties, and *In Vitro* Anti Diabetic Efficacy of *Gracilaria bursa-pastoris* Extracts. Mar Drugs. 2023 Jun 24;21(7):372.

El Hachlafi N, Benkhaira N, Al-Mijalli SH, Mrabti HN, Abdnim R, Abdallah EM Jeddi M, **Bnouham M**, Lee LH, Ardianto C, Ming LC, Bouyahya A, Fikri-Benbrahim K Phytochemical analysis and evaluation of antimicrobial, antioxidant, and antidiabetic activities of essential oils from Moroccan medicinal plants: *Mentha suaveolens*, *Lavandula stoechas*, and *Ammi visnaga*. Biomed Pharmacother. 2023 Aug;164.

Marghich M, Amrani O, Karim A, Harit T, Beyi L, Mekhfi H, **Bnouham M**, Aziz M Myorelaxant and antispasmodic effects of the essential oil of *Artemisia campestris* L., and the molecular docking of its major constituents with the muscarinic receptor and the L-type voltage-gated Ca2+ channel. J Ethnopharmacol. 2023 Jul 15;311.

Amirou A, Razzok EM, Legssyer A, Ziyyat A, Aziz M, **Bnouham M**, Zaid Y Berrabah M, Mekhfi H. Effects of Walnut Bark Extract on the Human Platelet Aggregation, Adhesion, and Plasmatic Coagulation In Vitro. Adv Pharmacol Pharm Sci. 2023 Jan 3;2023.

2022

Marghich M, Daoudi NE, Amrani O, Addi M, Hano C, Chen JT, Mekhfi H, Ziyyat A, **Bnouham M**, Aziz M. Antioxidant Activity and Inhibition of Carbohydrate Digestive Enzymes Activities of *Artemisia campestris* L. Front Biosci (Schol Ed). 2022 Sep 21;14(4):25.

Dalli M, Daoudi NE, Abrigach F, Azizi SE, **Bnouham M**, Kim B, Gseyra N. In vitro α -amylase and hemoglobin glycation inhibitory potential of *Nigella sativa* essential oil, and molecular docking studies of its principal components. Front Pharmacol. 2022 Oct 20;13.

Benrahou K, Naceiri Mrabti H, Bouyahya A, Daoudi NE, **Bnouham M**, Mezzour H, Mahmud S, Alshahrani MM, Obaidullah AJ, Cherrah Y, Faouzi MEA. Inhibition of α-Amylase, α-Glucosidase, and Lipase, Intestinal Glucose Absorption, and Antidiabetic Properties by Extracts of *Erodium guttatum*. Evid Based Complement Alternat Med. 2022 Aug 17;2022.

Abid S, Maciuk A, Fishmeister R, Leblais V, Legssyer A, Mekhfi H, Ziyyat A, Aziz M, Lekchiri A, **Bnouham M**. Development of a Thin-Layer Chromatography-Enzymatic Test Combination Method for the Isolation of α -Glucosidase Inhibitors From *Thymelaea hirsuta*. J Chromatogr Sci. 2022 Jun 10.

Oulous A, Daoudi NE, Harit T, Cherfi M, **Bnouham M**, Malek F. New pyrazole-tetrazole hybrid compounds as potent α-amylase and non-enzymatic glycation inhibitors. Bioorg Med Chem Lett. 2022 Aug 1.

.

Laaraj N, Bouhrim M, Kharchoufa L, Tiji S, Bendaha H, Addi M, Drouet S, Hano C, Lorenzo JM, **Bnouham M**, Mimouni M. Phytochemical Analysis, α-Glucosidase and α-Amylase Inhibitory Activities and Acute Toxicity Studies of Extracts from Pomegranate (*Punica granatum*) Bark, a Valuable Agro-Industrial By-Product. Foods. 2022 May 6;11(9).

Abid S, **Bnouham M**. A Review on Experimental Models to Test Medicinal Plants on Postprandial Blood Glucose in Diabetes. Curr Diabetes Rev. 2022 Apr 8.

Hbika A, Daoudi NE, Bouyanzer A, Bouhrim M, Mohti H, Loukili EH, Mechchate H, Al-Salahi R, Nasr FA, **Bnouham M**, Zaid A. *Artemisia absinthium* L. Aqueous and Ethyl Acetate Extracts: Antioxidant Effect and Potential Activity *In Vitro* and *In Vivo* against Pancreatic α-Amylase and Intestinal α-Glucosidase. Pharmaceutics. 2022 Feb 22;14(3):481.

Asmae AMIROU, Abdelkhaleq LEGSSYER, Abderrahim ZIYYAT, Mohammed AZIZ, **Mohamed BNOUHAM**, Mohammed BERRABAH, Mostafa MARKAOUI, Mohammed BENSAID, Younes ZAID, Hassane MEKHFI Antithrombotic activity of flavonoid fractions of Juglans regia root bark through inhibiting platelet aggregation and plasmatic coagulation

Samira MAMRI, NourElhouda DAOUDI, Mohamed MARGHICH, Sabir OUAHHOUD, Amine KHOULATI, Mohammed CHOUKRI, Abdeslam ASEHRAOU, **Mohamed BNOUHAM**, Ennouamane SAALAOUI. Antioxidant properties and hepatoprotective effect of Croccus sativus stamens against carbon tetrachloride-induced liver injury in rats

2021

Hbika A, Daoudi NE, Bouyanzer A, Bouhrim M, Mohti H, Loukili EH, Mechchate H, Al-Salahi R, Nasr FA, **Bnouham M**, Zaid A. Artemisia absinthium L. Aqueous and Ethyl Acetate Extracts: Antioxidant Effect and Potential Activity In Vitro and In Vivo against Pancreatic α-Amylase and Intestinal α-Glucosidase. Pharmaceutics. 2022 Feb 22;14(3):481.

Boutahiri S, Bouhrim M, Abidi C, Mechchate H, Alqahtani AS, Noman OM, Elombo FK, Gressier B, Sahpaz S, **Bnouham M**, Desjeux JF, Zair T, Eto B. Antihyperglycemic Effect of Lavandula pedunculata: *In Vivo*, *In Vitro* and *Ex Vivo* Approaches. Pharmaceutics. 2021 Nov 26;13(12):2019.

Ouassou H, Bouhrim M, Bencheikh N, Addi M, Hano C, Mekhfi H, Ziyyat A, Legssyer A, Aziz M, **Bnouham M**. *In Vitro* Antioxidant Properties, Glucose-Diffusion Effects, α-Amylase Inhibitory Activity, and Antidiabetogenic Effects of *C. Europaea* Extracts in Experimental Animals. Antioxidants (Basel). 2021 Oct 31;10(11):1747.

Benayad O, Bouhrim M, Tiji S, Kharchoufa L, Addi M, Drouet S, Hano C, Lorenzo JM, Bendaha H, **Bnouham M**, Mimouni M. Phytochemical Profile, α-Glucosidase, and α-Amylase Inhibition Potential and Toxicity Evaluation of Extracts from *Citrus aurantium* (L) Peel, a Valuable By-Product from Northeastern Morocco. Biomolecules. 2021 Oct 20;11(11):1555.

Marghich M, Amrani O, Mekhfi H, Ziyyat A, **Bnouham M**, Aziz M. Myorelaxant and antispasmodic effect of an aqueous extract of *Artemisia campestris* L. via calcium channel blocking and anticholinergic pathways. J Smooth Muscle Res. 2021;57(0):35-48.

Bouhrim M, Bencheikh N, Imtara H, Daoudi NE, Mechchate H, Ouassou H, Kharchoufa L, Elachouri M, Mekhfi H, Ziyyat A, Legssyer A, Aziz M, **Bnouham M**. Protective Effect of *Opuntia dillenii* (Ker Gawl.) Haw. Seed Oil on Gentamicin-Induced Nephrotoxicity: A Biochemical and Histological Analysis. ScientificWorld Journal. 2021 Aug 31;2021:2173012.

Bencheikh N, Bouhrim M, Kharchoufa L, Al Kamaly OM, Mechchate H, Es-Safi I, Dahmani A, Ouahhoud S, El Assri S, Eto B, **Bnouham M**, Choukri M, Elachouri M. The Nephroprotective Effect of *Zizyphus lotus* L. (Desf.) Fruits in a Gentamicin-Induced Acute Kidney Injury Model in Rats: A Biochemical and Histopathological Investigation. Molecules. 2021 Aug 8;26(16): 4806.

Tiji S, Bouhrim M, Addi M, Drouet S, Lorenzo JM, Hano C, **Bnouham M**, Mimouni M. Linking the Phytochemicals and the α -Glucosidase and α -Amylase Enzyme Inhibitory Effects of *Nigella sativa* Seed Extracts. Foods. 2021 Aug 6;10(8):1818.

Dalli M, Daoudi NE, Azizi SE, Benouda H, **Bnouham M**, Gseyra N. Chemical Composition Analysis Using HPLC-UV/GC-MS and Inhibitory Activity of Different *Nigella sativa* Fractions on Pancreatic α -Amylase and Intestinal Glucose Absorption. Biomed Res Int. 2021 Jun 26;

Bouhrim M, Boutahiri S, Kharchoufa L, Mechchate H, Mohamed Al Kamaly O, Berraaouan A, Eto B, Ziyyat A, Mekhfi H, Legssyer A, Aziz M, **Bnouham M**. Acute and Subacute Toxicity and Cytotoxicity of *Opuntia Dillenii* (Ker-Gawl) Haw. Seed Oil and Its Impact on the Isolated Rat Diaphragm Glucose Absorption. Molecules. 2021 Apr 9;26(8):2172.

Bouhrim M, Ouassou H, Boutahiri S, Daoudi NE, Mechchate H, Gressier B, Eto B, Imtara H, A Alotaibi A, Al-Zharani M, Ziyyat A, Mekhfi H, Legssyer A, Aziz M, **Bnouham M**. *Opuntia dillenii* (Ker Gawl.) Haw., Seeds Oil Antidiabetic Potential Using *In Vivo*, *In Vitro*, *In Situ*, and *Ex Vivo* Approaches to Reveal Its Underlying Mechanism of Action. Molecules. 2021 Mar 17;26(6):1677.

Abid S, Mekhfi H, Ziyyat A, Legssyer A, Aziz M, **Bnouham M**. Beneficial Effect of *Thymelaea hirsuta* on Pancreatic Islet Degeneration, Renal Fibrosis, and Liver Damages as Demonstrated in Streptozotocin-Induced Diabetic Rat. Scientific World Journal. 2021 Feb 18;

Ouassou H, Bouhrim M, Daoudi NE, Mekhfi H, Ziyyat A, Legssyer A, Aziz M, **Bnouham M**. Evaluation of Hepatoprotective Activity of *Caralluma europaea* Stem Extract against CCl4-Induced Hepatic Damage in Wistar Rats. Adv Pharmacol Pharm Sci. 2021 Jan 7;2021:8883040.

Ouassou H, Bouhrim M, Kharchoufa L, Imtara H, Daoudi NE, Benoutman A, Bencheikh N, Ouahhoud S, Elbouzidi A, **Bnouham M**. *Caralluma europaea* (Guss) N.E.Br.: A review on ethnomedicinal uses, phytochemistry, pharmacological activities, and toxicology. J Ethnopharmacol. 2021 Jun 12;273:113769.

Daoudi NE, Bouhrim M, Ouassou H, **Bnouham M**. Medicinal Plants as a Drug Alternative Source for the Antigout Therapy in Morocco. Scientifica (Cairo). 2020 Nov 23.

Bouhrim M, Daoudi NE, Ouassou H, Benoutman A, Loukili EH, Ziyyat A, Mekhfi H, Legssyer A, Aziz M, **Bnouham M**. Phenolic Content and Antioxidant, Antihyperlipidemic, and Antidiabetogenic Effects of *Opuntia dillenii* Seed Oil. ScientificWorld Journal. 2020 Oct 6;

Daoudi NE, **Bnouham M**. Hepatoprotective Essential Oils: A Review. J Pharmacopuncture. 2020 Sep 30;23(3):124-141.

Nouayti H, Bouanani NH, Hammoudi J, Mekhfi H, Legssyer A, **Bnouham M**, Ziyyat A. Overweight and obesity in Eastern Morocco: Prevalence and associated risk factors among high school students. Rev Epidemiol Sante Publique. 2020 Sep;68(5):295-301.

Ouassou H, Kharchoufa L, Bouhrim M, Daoudi NE, Imtara H, Bencheikh N, ELbouzidi A, **Bnouham M**. The Pathogenesis of Coronavirus Disease 2019 (COVID-19): Evaluation and Prevention. J Immunol Res. 2020 Jul 10.

2019

Bencheikh N, Bouhrim M, Kharchoufa L, Choukri M, **Bnouham M**, Elachouri M. Protective Effect of **Zizyphus lotus** L. (Desf.) Fruit against CCl4-Induced Acute Liver Injury in Rat. Evid Based Complement Alternat Med. 2019 Dec 25;

Assaidi A, Dib I, Tits M, Angenot L, Bellahcen S, Bouanani N, Legssyer A, Aziz M, Mekhfi H, **Bnouham M**, Frederich M, Ziyyat A. *Chenopodium ambrosioides* induces an endothelium-dependent relaxation of rat isolated aorta. J Integr Med. 2019 Mar;17(2):115-124.

Makrane H, Aziz M, Berrabah M, Mekhfi H, Ziyyat A, **Bnouham M**, Legssyer A, Elombo FK, Gressier B, Eto B. Myorelaxant Activity of essential oil from *Origanum majorana* L. on rat and rabbit. J Ethnopharmacol. 2019 Jan 10;228:40-49. doi: 10.1016/j.jep.2018.08.036.

Bouhrim M, Ouassou H, Choukri M, Mekhfi H, Ziyyat A, Legssyer A, Aziz M, **Bnouham M.** Hepatoprotective effect of *Opuntia dillenii* seed oil on CCl4 induced acute liver damage in rat. Asian Pac J Trop Biomed 2018;8:254-60

Ouassou H, Zahidi T, Bouknana S, Bouhrim M, Mekhfi H, Ziyyat A, Legssyer A, Aziz M, **Bnouham M**. Inhibition of α-Glucosidase, Intestinal Glucose Absorption, and Antidiabetic Properties by *Caralluma europaea*. Evid Based Complement Alternat Med. 2018 Aug 29;2018:9589472. doi: 10.1155/2018/9589472. eCollection 2018.

Makrane H, Aziz M, Mekhfi H, Ziyyat A, Legssyer A, Melhaoui A, Berrabah M, **Bnouham M**, Alem C, Elombo FK, Gressier B, Desjeux JF, Eto B. *Origanum majorana* L extract exhibit positive cooperative effects on the main mechanisms involved in acute infectious diarrhea. J Ethnopharmacol. 2018 Sep 11. pii:S0378-8741(18)31957-3.

Amirou A, **Bnouham M**, Legssyer A, Ziyyat A, Aziz M, Berrabah M, Mekhfi H. Effects of *Juglans regia* Root Bark Extract on Platelet Aggregation, Bleeding Time, and Plasmatic Coagulation: *In Vitro* and *Ex Vivo* Experiments. Evid Based Complement Alternat Med. 2018 Aug 14; 2018.

Hammoudi J, Dahmani H, Bouanani NE, Nouayti H, Mekhfi H, Legssyer, **Bnouham M,** Ziyyat A. Risk Factors and Diabetes Related Complications Frequency in the Population of the Northeastern Morocco. OJEpi; Vol.8 No.3, August 2018; PP. 164-185.

Bouknana S, Bouhrim M, Ouassou H, **Bnouham M**. Review of Medicinal Plants and their Compounds for Aldose Reductase Inhibitory. Letters in Drug Design & Discovery, Volume 15, Number 7, July 2018, pp. 796-812(17).

Lahmass I, Sabouni A, Berraouan A, Zoheir K, Belakbir S, Elyoubi M, Benabbes R, Himri I, Mokhtari S, Mekhfi H, **Bnouham M** and Saalaoui E. Diabetogenic Property of the Tartrazine Treatment With Saffron Extract of the Diabetogenic Rats Induced by the Food Colorant Tartrazine. Indian J Physiol Pharmacol 2018; 62(2).

2017

Ikram Dib , Atika Mihamou , Mohamed Berrabah , Hassane Mekhfi , Mohammed Aziz , Abdelkhaleq Legssyer , **Mohamed Bnouham** and Abderrahim Ziyyat. Identification of *Artemisia campestris* L. subsp. glutinosa (Besser) Batt. from Oriental Morocco based on its morphological traits and essential oil profile.J. Mater. Environ. Sci. 8 (1) (2017) 180-187.

Hakkou Z, Maciuk A, Leblais V, Bouanani NE, Mekhfi H, **Bnouham M**, Aziz M, Ziyyat A, Rauf A, Hadda TB, Shaheen U, Patel S, Fischmeister R, Legssyer A. Antihypertensive and

vasodilator effects of methanolic extract of *Inula viscosa*: Biological evaluation and POM analysis of cynarin, chlorogenic acid as potential hypertensive. Biomed Pharmacother. 2017 Sep;93:62-69. doi:10.1016/j.biopha.2017.06.015. Epub 2017 Jun 15. PubMed PMID: 28623784.

Dib I, Tits M, Angenot L, Wauters JN, Assaidi A, Mekhfi H, Aziz M, **Bnouham M**, Legssyer A, Frederich M, Ziyyat A. Antihypertensive and vasorelaxant effects of aqueous extract of *Artemisia campestris* L. from Eastern Morocco. J Ethnopharmacol. 2017 Jul 12;206:224-235.

Dib I, Fauconnier ML, Sindic M, Belmekki F, Assaidi A, Berrabah M, Mekhfi H, Aziz M, Legssyer A, **Bnouham M,** Ziyyat A. Chemical composition, vasorelaxant, antioxidant and antiplatelet effects of essential oil of *Artemisia campestris* L. from Oriental Morocco. BMC Complement Altern Med. 2017 Jan 31;17(1):82.

2016

Sanae Abid, Ali Berraaouan and **Mohamed Bnouham**. Natural Alpha-Glucosidase Inhibitors: Therapeutic Implication and Structure-Activity Relation Ship. *Letters in Drug Design* & Discovery. Volume 12

Tarik Bsaiti, Ali Berraaouan, **Mohamed Bnouham**. Antihyperglycemic Effect of a Herbal Mixture in Rats. International Journal of PharmTech Research CODEN (USA): 2455-9563 Vol.9, No.12, pp 406-409, 2016

2015

Afkir, M. Markaoui, M. Aziz, **M. Bnouham**, H. Mekhfi, A. Legssyer, A. Ziyyat. Effect of flavonoïds from *Abutus unedo* leaves on rat isolated thoracic aorta. Arabian Journal of Medicinal and Aromatic Plants. Vol 1, No 2 (2015)

Mohammed Aziz, Kamal Oubenchiker, Ahmed Karim, Hassane Mekhfi, **Mohamed Bnouham**. Evaluation of the antidiarrheal activity of the aqueous extract of *Cistus salviifolius* 1. aerial parts Mintage Journal of Pharmaceutical and Medical Sciences Vol 4 Issue 4 (Oct-Dec) 2015

Ali Berraaouan, Ziyyat Abderrahim, Mekhfi Hassane, Legssyer Abdelkhaleq, Aziz Mohammed, **Bnouham Mohamed**. Evaluation of protective effect of cactus pear seed oil (*Opuntia ficus-indica* L. MILL.) against alloxan-induced diabetes in mice. Asian Pacific Journal of Tropical Medicine. Volume 8, Issue 7, July 2015, Pages 532–537.

K. Ahmed, H. Zrouri, S. Amrani, **M. Bnouham**, A. Ziyyat, S. Amrani and M. Aziz "Antimotolity Effect of Organic Extracts of *Anthemis Mauritiana* Maire & Sennen Flowers on the Rodent Isolated Jejunum". Asian Journal of Pharmaceutical and Clinical Research (Vol 8, Issue 2, 2015).

L. Beyi, M. Aziz, H. Makrane, A. Karim, **M. Bnouham**, A. Ziyyat "Antidiarrheal Activity Of *Thymus Algeriensis* Boiss And Reut Aqueous Extract On Rats And Mice". International Journal of Pharmacy and Pharmaceutical Sciences (Vol 7, Issue 3, 2015).

2014

Ziyyat A, Ramdani N, Bouanani Nel H, Vanderpas J, Hassani B, Boutayeb A, Aziz M, Mekhfi H, **Bnouham** M, Legssyer A. Epidemiology of arterial hypertension in the eastern Morocco and how it relates to type II diabetes and obesity. Springerplus. Oct 30;3:644, **2014**. SCOPUS

A. Zidane, Monique Tits, L. Angenot, J. N. Wauters, M. Frederich, I. Dib, H. Mekhfi, M. Aziz, M. Bnouham, A. Legssyer and A. Ziyyat. Phytochemical analysis of *Tetraclinis articula* in relation to its vasorelaxant property. Accepté par Journal of Material and Environmental Science, 2014. ISSN: 2028-2508 Issue 4 or 5,.

Assaidi, A., Legssyer, A., Berrichi, A., Aziz, M., Mekhfi, H., **Bnouham, M.**, Ziyyat, A. Hypotensive property of *Chenopodium Ambrosioides* in Anesthetized Normotensive Rats" Journal of Complementary and Integrative Medicine. (2014).11 (1) PP. 1 - 7

Berraaouan A., Ziyyat A., Mekhfi H., Legssyer A., Sindic M., Aziz M., **Bnouham M.** Evaluation of antidiabetic properties of cactus pear seed oil in rats. Pharmaceutical Biology. 2014. Oct;52(10):1286-90.

2013

A. Berraouan¹, S. Abid¹, and **M. Bnouham.** Antidiabetic oils. Current Diabetes Review

S. Abid, A. Lekchiri, H. Mekhfi, A. Ziyyat, A. Legssyer, M. aziz and **M. Bnouham.** Inhibitory effect of *Thymelaea hirsuta* fractions on alpha-glucosidase activity, *in vitro*. Journal of Diabetes **Publed**

2012

Bellahcen S, Hakkou Z, Ziyyat A, Legssyer L, Mekhfi H, Aziz M, **Bnouham M**. Antidiabetic and antihypertensive effect of Virgin Argan Oil in model of neonatal streptozotocin-induced diabetic and L-NAME hypertensive rats. Accepted in Journal complementary and integrative Medicine, June 2013.

Bnouham M. Recent advances in pharmacologic study of anticancer natural products from medicinal plants in Morocco. *Tang* 2012 / Volume 2 / Issue 3 /1-10 e22 http://www.e-

tang.org/journal.do?method=viewFullTextArchive&journalSeq=J000027&menuId=0202&introMenuId=0202

Gadi D, **Bnouham M**, Aziz M, Ziyyat A, Legssyer A, Bruel A, Berrabah M, Legrand C, oise Fauvel-Lafeve, Mekhfi H. Flavonoids Purified From Parsley Inhibit Human Blood Platelet Aggregation And Adhesion To Collagen Under Flow. accepted in *Journal of Complementary and Integrative Medicine* 2012 Aug 10;9(1).

Bnouham M, Benalla W, Bellahcen S, Hakkou Z, Ziyyat A, Mekhfi H, Aziz M, Legssyer A. Antidiabetic and antihypertensive effect of a polyphenol rich-fraction of *Thymeleae hirsuta* L. in a model of neonatal streptozotocin-induced diabetic and L-NAME hypertensive rats. J Diabetes. 2012 Apr 20. Publed

Mekhfi H, Belmekki F, Ziyyat A, Legssyer A, **Bnouham M**, Aziz M. Antithrombotic activity of argan oil: An *in vivo* experimental study. *Nutrition*. 2012 Mar 30.

Bellahcen S, Mekhfi H, Ziyyat A, Legssyer A, Hakkou A, Aziz M, **Bnouham M**. Prevention of chemically induced diabetes mellitus in experimental animals by virgin argan oil. *Phytother Res*. 2012 Feb;26(2):180-5.

Bnouham M., Benalla W, Asehraou A, Berrabah M. Antibacterial activity of essential oil from *Ptychotis verticillata*. Spatula 2012; (2)1. SCOPUS

Aziz M., Karim A., El Ouariachi EM., Bouyanzer A., Amrani S, Mekhfi H., Ziyyat A., Melhaoui A., **Bnouham M.**, Legssyer A. Relaxant Effect of Essential Oil of *Artemisia herba-alba* Asso. on Rodent Jejunum Contractions. Sci Pharm **2012**; 80: 457–467.

2011

Ramdani N, Vanderpas J, Boutayeb A, Meziane A, Hassani B, Zoheir J, Legssyer A, Aziz M, Mekhfi H, **Bnouham M**, Ziyyat A. Diabetes and obesity in the eastern Morocco. Medit J Nutr and Metabol **2011**.

Aziz M, Karim A, Tab N, Mekhfi H, **Bnouham M**, Ziyyat A, Legssyer A, Atmani F. Antidiarrhoeal activity of *Cistus ladaniferus* aqueous extract. Spatula DD. **2011**; 1(3): 175-179. doi:10.5455/spatula.20110908034958

Himri I, Bellahcen S, Souna F, Belmakki F, Aziz M, **Bnouham M**, Zoheir J, Berkia Z, Mekhfi H, Saalaoui E. A 90-day oral roxicity study of **SCOPUS** a synthetic food dye, in wistar rats. Int J Pharm Pharm **2011**; Vol 3 Suppl 3, 159-169.

2010

Bnouham M (2010) "Medicinal Plants with Potential Galactagogue Activity Used in the Moroccan Pharmacopoeia," Journal of Complementary and Integrative Medicine: 2010 Vol. 7: Iss. 1. Article 52.

Skiker M, Mekhfi H, Aziz M, Haloui B, Lahlou S, Legssyer A, **Bnouham M**, Ziyyat A. Artemisia herba-alba Asso relaxes the rat aorta through activation of NO/cGMP pathway and K(ATP) channels. J Smooth Muscle Res. **2010**;46(3):165-74.

Karim A, Mekhfi H, Ziyyat A, Legssyer A, **Bnouham M**, Amrani S, Atmani F, Melhaoui A, Aziz M. Anti-diarrhoeal activity of crude aqueous extract of *Rubia tinctorum* L. roots in rodents. J Smooth Muscle Res. **2010**;46(2):119-23.

Benalla W, Bellahcen S, **Bnouham M**. Antidiabetic medicinal plants as a source of alpha glucosidase inhibitors. Curr Diabetes Rev. **2010** Jul 1;6(4):247-54. Review.

2009

Belmokhtar M, Bouanani NE, Ziyyat A, Mekhfi H, **Bnouham M**, Aziz M, Matéo P, Fischmeister R, Legssyer A. Antihypertensive and endothelium-dependent vasodilator effects of aqueous extract of Cistus ladaniferus. Biochem Biophys Res Commun. **2009** Nov 6;389(1):145-9 Publication

Gadi D, **Bnouham M**, Aziz M, Ziyyat A, Legssyer A, Legrand C, Lafeve FF, Mekhfi H. Parsley extract inhibits in vitro and *ex vivo* platelet aggregation and prolongs bleeding time in rats. J Ethnopharmacol. **2009** Aug 17;125(1):170-4.

Kattouf J, Belmoukhtar M., Harnafi H., Mekhfi H., Ziyyat A., Aziz M, **Bnouham M**. and Legssyer A. "Antihypertensive effect of an aqueous extract of *Inula viscosa* leaves. Phytothérapie, **2009**; 7: 309-312.

2008

Bnouham M; Bellahcen S; Benalla W; Legssyer A; Ziyyat A; and Mekhfi H. Antidiabetic Activity Assessment of *Argania spinosa* Oil, Journal of Complementary and Integrative Medicine: **2008** Vol. 5: Iss. 1, Article 32.

Mekhfi, H; Gadi, D; **Bnouham, M**; Ziyyat, A; Legssyer, A; and Aziz, M. Effect of Argan Oil on Platelet Aggregation and Bleeding Time: A Beneficial Nutritional Property. Journal of Complementary and Integrative Medicine: **2008** Vol. 5: Iss. 1, Article 18.

Afkir S, Nguelefack TB, Aziz M, Zoheir J, Cuisinaud G, **Bnouham M**, Mekhfi H, Legssyer A, Lahlou S, Ziyyat A. *Arbutus unedo* prevents cardiovascular and morphological alterations in L-NAME-induced hypertensive rats Part I: Cardiovascular and renal hemodynamic effects of Arbutus unedo in L-NAME-induced hypertensive rats. J Ethnopharmacol. **2008** Mar 5;116(2):288-95.

2007

Bnouham M, Merhfour FZ, Legssyer A, Mekhfi H, Maâllem S & Ziyyat A. Antihyperglycemic activity of *Arbutus unedo*, *Ammoides pusilla* and *Thymelea hirsuta*. *Pharmazie*. 2007 Aug;62(8):630-2. **2007**.

Bnouham M, Merhfour FZ, Elachouri M, Ziyyat A, Legssyer A, Mekhfi H, Lamnaouer D. Toxic effect of some medicinal plants used in Moroccan traditional medicine. Morrocan Journal of Biology, **2007**.

Atmani F, Slimani Y, Mbarek AN, **Bnouham M**, Ramdani A. *In vitro* and *in vivo* antilithiasic effect of saponin rich fraction isolated from *Herniaria hirsuta*. J Bras Nefrol **2006**; 28(4): 199-203.

2006

Bnouham M, Ziyyat A, Mekhfi H, Tahri A, Legssyer A. Medicinal plants with potential antidiabetic activity – A review of ten years of herbal medicine research (1990-2000). Int J Diab Metabol. Vol 14,n°1, April **2006**. SCOPUS

Aziz M, Tab N, Karim A, Mekhfi H, **Bnouham M**, Ziyyat A, Melhaoui A, Legssyer A. Relaxant effect of aqueous extract of *Cistus ladaniferus* on rodent intestinal contractions. Fitoterapia. 2006 Sep;77(6):425-8. Pub Qed

Mekhfi H, EL Haouari M, **Bnouham M**, Aziz M, Ziyyat A & Legssyer A. Effects of extracts and tannins from *Arbutus unedo* leaves on rat platelet aggregation. Phytotherapy Research 20: 135-139, **2006**. Publication

El Haouari M, **Bnouham M**, Bendahou M, Aziz M, Ziyyat A, Legssyer A. Mekhfi H. Inhibition of Rat platelet Aggregation by *Urtica dioica* Leaves on rat aggregation. Phytotherapy Research 20:Apr 18, **2006**. Publication

2004

Legssyer A, Ziyyat A, Mekhfi H, **Bnouham M,** Herrenknecht C, Roumy V, Fourneau C, Laurens A, Hoerter J & Fischmeister R. Tannins and catechin gallate mediate the vasorelaxant effect of *Arbutus unedo* on the rat isolated aorta. Phytother. Res. **18**: 889-894, **2004**. **Publ**

Mekhfi H, El Haouari M, Legssyer A, Bnouham M, Aziz M, Atmani F, Remmal A & Ziyyat

A. Platelet Anti-aggregant Property of some Moroccan Medicinal Plants. J. Ethnopharmacol., 94: 317-322, **2004.**

2003

Bnouham M., FZ. Merhfour, A. Ziyyat, H. Mekhfi, M. Aziz & A. Legssyer. Antihyperglycemic activity of the aqueous extract of *Urtica dioïca*. Fitoterapia 74, 677-681, **2003.**

2002

Ziyyat A, Mekhfi H, **Bnouham M**, Tahri A, Legssyer A, Hoerter J. & Fischmeister R. *Arbutus unedo* induces endothelium-dependent relaxation of the rat isolated aorta. Phytother. Res. 16: 572-575, **2002**. **Pub**

Legssyer A, Ziyyat A, Mekhfi H, **Bnouham M**, Tahri A, Serhrouchni M, Hoerter J. & Fischmeister R. Cardiovascular effects of *Urtica dioida*. Phytother. Res. 16: 503-507, **2002**.

Bnouham M, Legssyer A, Mekhfi H & Ziyyat A. Ethnopharmacology Forum: Medicinal plants used in the treatment of diabetes in Morocco. Int. J. Diabetes & Metabolism 10: 33-50, 2002.

2000

Tahri A, Yamani S, Legssyer A, Aziz M, Mekhfi H, **Bnouham M** & Ziyyat A. Acute diuretic, natriuretic and hypotensive effects of a continuous perfusion of aqueous extract of *Urtica dioïca* in the rat. J. Ethnopharmacol. 73: 95-100, **2000.** Publication

1998

Le Maho Y, **Bnouham M**. Fuel specialist for endurance [in Principles of Animal Design: The Optimization and Symmorphosis Debate-US]-ISBN:0521583705 (Hard cover book) Weibel, Ewald F. (EDT) /Taylor, C. Richard (EDT) /Bolis, Liana (EDT) / Publisher: Cambridge Univ Pr Published. **1998.**

1996

Andriamampandry MD, **Bnouham M**, Michard D, Gutbier G, Le Maho Y & Leray C. Food deprivation modifies fatty acid partitioning and β -oxidation capacity in rat liver. J. Nutr. 126: 2020-2027, **1996.** Publication

1995

Leray, C., Grcic, T., Gutbier, G. and **Bnouham, M**. Microwave-oven extraction procedure for lipid

analysis in biological samples. Analusis, 23, 65-67.1995.

1993

Oudart H, Heitz A, **Bnouham M**, Malan A, Le Maho Y. Body protein and lipid deficit tumourbearing rats in relation to age. Br J Cancer. Nov, 68(5): 885-9. **1993.**