

**Fanar Hamad Alshammari Ph.D.**

Assistant professor.

Northern Border University - Department of Biological

Arar, Saudi Arabia

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**CAREER OBJECTIVE & SUMMARY**

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Possessing a high level of motivation, being diligent, imaginative, and having a true enthusiasm for research and development and innovations, as well as growing knowledge in technology and research, A strong academic record combined with research and industrial quality experience. possess a genuine interest in industrial levels. Employees counseling and supervision, and research in the areas of food science biotechnology, nutrition science, microbiology, pharmaceutical chemistry (identification of natural bioactive compounds to support drug discovery and development), natural product chemistry, and phytomedicine.

**ACADEMIC TRACK RECORDS**

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**2019-2023 Doctor of Philosophy (Ph.D.)**

Kyungpook National University, Daegu, South Korea.

**Major:** Food Science Biotechnology

**Thesis:** Extraction Optimization of Ajwa Dates (*Phoenix dactylifera* L.) Seed Extract Using RSM and ANN Models, Profiling of Secondary Metabolites Using High-Resolution Mass Spectroscopy, and their Pharmaceutical Significance.

**2015-2017 MS in Microbiology and Biotechnology**

Yeungnam University, South Korea.

**Major:** Microbiology and Biotechnology (Natural Product)

**Thesis:** Isolation, Identification, and Characterization of Thermotolerant Lactic Acid Bacteria Isolated from Saudi Fermented Foods and their Pharmaceutical Significance

**2008-2012 BSc in Biology**

Al Jouf University, Saudi Arabia

**Project:** Antioxidant activities of Saudi Dates fruit *in-vitro*.

**JOB EXPERIENCE (Starting from the most recent position)**

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**Period: Current from Aug 2024**

**Designation:** Assistant professor.

**Institution:** Northern Border University - Department of Biological

**Period: Mar 2024 – Aug 2024**

**Designation:** Technical Manager of Quality Laboratories.

**Institution:** Aquat Food Industries Co- Department of Quality Control.

**Period: June 2023 – Feb 2024**

**Designation:** Postdoctoral

**Institution:** Kyungpook National University- Department of Agriculture and Life Science.

**Period: September 2017 – July 2018**

**Designation:** Senior Specialist

**Institution:** General Riyadh Municipality Central Area Labs for EH, (Microbiology and Molecular Laboratory)

**Period: August 2012 – May, 2013**

**Designation:** Teacher

**Institution:** Aljouf private school. Saudi Arabia- Skaka city.

**Description of Responsibilities:** Delivering class on Biology and Student Counseling.

### **ACADEMIC AWARDS AND HONOR**

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1. 2023, **Attendance**, The First Generics Scientific Evaluation Workshop: Current Challenges for Generic Products, Riyadh Saudi Arabia
2. 2023, **Best oral presenter**, 3<sup>rd</sup> World Conference on Byproducts of Palms Towards a Sustainable Bioeconomy, Riyadh, Saudi Arabia.
3. 2023, **Attendance and workshop participance**, Saudi Youth for Sustainability, KAUST.
4. 2023, **Attendance**, KAUST-SFDA Joint International Conference Trends in Microbiome and Digital One Health.
5. 2023, **Attendance**, KAUST Work Shops for Saudi Food Futures.
6. 2023, **Attendance**, Saudi Agriculture, Agriculture Technologies, Food Security and Sustainability.
7. 2022, **Best oral presenter**, from Korean Society of Food preservation annual meeting and international symposium, Korea.
8. 2022, **Best Poster Award** from Korean Society of Biotech&Bioengin annual meeting and international symposium, Korea
9. 2021, **Poster Award** from Korean Society of Biotech&Bioengin annual meeting and international symposium, Korea.
10. 2019, **The Custodian of the Two Holy Mosques Scholarship Program**
11. 2017 **MSc in Microbiology & Biotechnology**
12. 2017, **Poster Award** from IUMS2017 Singapore International Union of Microbiology Societies, Singapore.
13. 2016, **Poster Award** from Korean Society of Biotech&Bioengin annual meeting and international symposium, Korea.
14. 2016, **Poster Award** from Korean Society of Biotech&Bioengin annual meeting and international symposium, Korea
15. 2013, **The Custodian of the Two Holy Mosques Scholarship Program**
16. 2012, **BSc in Biological Science.**

### **RESEARCH RELATED PROFILE**

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Google Scholar: <https://scholar.google.com/citations?hl=en&user=MtExxuWAAAAJ>

Research Gate: <https://www.researchgate.net/profile/Alshammari-Fanar-Hamad/research>

### **TECHNICAL EXPERTISE**

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| • Phytochemical and Enzyme assay   | • Bacterial cell culture & isolation  |
| • HPLC   | • Fungal cell culture & isolation   |
| • High resolution Mass Spectroscopy  | • Mice model (inflammation, Diabetes, skin aging, melanoma)                     |
| • GC-MS  | • In silico pharmacology, toxicology and pharmacodynamics properties assessment |
| • High performance Industrial fermentation system included 30L and 300L fermenter Operation, | • SPSS, Sigmaplot, Compusyn and GraphPad Prism software                         |
| • SDS-polyacrylamide gel Electrophoresis   |   |
| • Western blotting   |   |
| • Mammalian cell culture (Melan-a,   |   |

- MNT-1, C2C12, RAW264.7, HaCaT etc)
- ELISA
- Ultrasound Assisted Extraction.
- Artificial Neuronal Network Bioinformatic technique.
- Response Surface Methodology Bioinformatic technique
- Molecular docking (Autodoc Vinna, Chimera, Pymol, Discovery Studio, Gold, Glide)
- Molecular dynamic simulation: Gromacs, Yasara.
- Homology modeling (Modeller, Swiss model)
- DNA extraction, RNA extraction, PCR

## PROFESSIONAL AFFILIATIONS

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| 1. Environmental Management System Auditor.                  | <b><u>ISO 14001:2015</u></b> |
| 2. Occupational Health and Safety Management System Auditor. | <b><u>ISO 45001:2018</u></b> |
| 3. Quality Management System Auditor.                        | <b><u>ISO 9001:2015</u></b>  |
| 4. Food safety Management System Auditor.                    | <b><u>ISO 22000:2018</u></b> |

## LANGUAGES

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**Arabic** (Mother tongue), **English and Korean** (Both in very advanced levels)

## PUBLICATIONS

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**Total publication: 19 (Research paper)**

### Selective Journal Names

Food Chemistry (2), Antioxidants (2), International Journal of Molecular Sciences (1), Pakistan Journal of Pharmaceutical Sciences (1), Bangladesh Journal of Pharmacology (3), Food and Pharma International (1), Journal Food Biochemistry (1), Journal of Pharmaceuticals (1), Arabian Journal of Chemistry (3), Saudi Pharmaceutical Journal (1), Saudi Journal of Biological Science (1), Journal of Pharmaceuticals (1), bioengineering (1), **Pakistan journal of batony (1).**

1. Laila Shaukati, Tabassum Yaseen, Fayaz Asad, Sarip Ahmad, Vasila Sharipova, **Fanar Hamad Alshammari\***, and Sajid Ali\*. STRENGTHENING PISUM SATIVUM L. GROWTH THROUGH TRIPARTITESYMBIOSIS WITH RHIZOBIA AND ARBUSCULAR MYCORRHIZAL FUNGI: A SUSTAINABLE BIO-FERTILIZER APPROACH. Pak. J. Bot., LS, 2025
2. Chayut Bunternghit, Laith H. Baniata, Hayder Albayati, Mohammad H. Baniata,, Khalid Alharbi, **Fanar Hamad Alshammari\*** and Sang woo Kang\*. A Hybrid Convolutional–Transformer Approach for Accurate Electroencephalography (EEG)-Based Parkinson’s Disease Detection. bioengineering 2025,12(6), 583; <https://doi.org/10.3390/bioengineering12060583>
3. **Alshammari Fanar**, Md Badrul Alam, Song BR, Lee SH (2023). Antioxidant, Tyrosinase,  $\alpha$ -Glucosidase, and Elastase enzyme inhibition activities of optimized unripe Ajwa Date pulp (*Phoenix dactylifera*) Extracts by RSM. International Journal of Molecular Sciences 2023, 24, 3396. <https://doi.org/10.3390/ijms24043396>
4. **Alshammari Fanar**, Md Badrul Alam, Naznin M, Javed A, Sunghwan Kim SH, Lee SH (2023). Profiling of secondary metabolites of optimized ripe Ajwa Date pulp (*Phoenix*

- dactylifera* L.) Using RSM and ANN. *Pharmaceuticals* 2023, 16, 319. <https://doi.org/10.3390/ph16020319>
5. **Alshammari Fanar**, Md Badrul Alam, Marufa Naznin M, Sunghwan Kim SH, Lee SH (2023). Optimization of *Portulaca oleracea* L. extract using response surface methodology and artificial neural network and characterization of bioactive compound by high-resolution mass spectroscopy. *Arabian Journal of Chemistry* 16, 104425. <https://doi.org/10.1016/j.arabjc.2022.104425>
  6. Diniyah N, Md Badrul Alam, Javed A, **Alshammari Fanar**, Choi HJ, Lee SH (2023). In silico and docking studies on the binding activities of Keap1 of antioxidant compounds in non-oilseed legumes. *Arabian Journal of Chemistry* (2023) 16, 104414. <https://doi.org/10.1016/j.arabjc.2022.104414>
  7. Javed A, Naznin M, Md. Badrul Alam, **Alshammari Fanar**, Song BR, Kim SH, Lee SH (2022). Metabolite profiling of microwave-assisted *Sargassum fusiforme* extracts with improved antioxidant activity using hybrid RSM and ANN-GA Algorithm. *Antioxidants* 2022, 11, 2246. <https://doi.org/10.3390/antiox11112246>
  8. Choi HJ, Naznin M, Md Badrul Alam, Javed A, **Alshammari Fanar**, Kim SH, Lee SH (2022). Optimization of the extraction conditions of *Nypa fruticans* Wurmb. using RSM and ANN. *Food Chemistry* 381:132086. <https://doi.org/10.1016/j.foodchem.2022.132086>
  9. Md Badrul Alam, Naznin M, Islam S, **Alshammari Fanar**, Choi HJ, Song BR, Kim SH, Lee SH (2021). High resolution mass spectroscopy-based secondary metabolite profiling of *Nymphaea nouchali* (Burm. f) stem attenuates oxidative stress via regulation of MAPK/Nrf2/HO-1/ROS pathway. *Antioxidants* 10: 719. <https://doi.org/10.3390/antiox10050719>
  10. Md Badrul Alam, Javed A, **Alshammari Fanar**, Choi HJ, Lee SH (2021). Plant-based natural products for breast cancer prevention: A South Asian Association for Regional Cooperation (SAARC) countries perspective. *Clinics in Surgery* 6: 3047.
  11. Vivek K. Bajpai, InWha Park, Imran Khan, **Fanar Hamad Alshammari**, Pradeep Kumar, Lei Chen, MinKyun Na, Yun Suk Huh, Young-Kyu Han, Shruti Shukla, (–)-Tetrahydroberberrubine·acetate accelerates antioxidant potential and inhibits food associated *Bacillus cereus* in rice, *Food Chemistry*, Volume 339,2021,127902,ISSN 0308-8146. <https://doi.org/10.1016/j.foodchem.2020.127902>
  12. Chi-Yeol Yoo, Hyeong-U Son, **Alshammari Fanar Hamad**, Hee-Jeong Choi, Md Badrul Alam, and Sang-Han Lee *Opuntia humifusa* Aqueous Fraction in an Ethanol-Induced Mouse Model. *Asian-Pacific Journal of Tropical Biomedicine*.10(9),403-410, 2020. [doi: 10.4103/2221-1691.290131](https://doi.org/10.4103/2221-1691.290131)
  13. **Alshammari Fanar Hamad**, Jong-Hun Han, Byung-Chun Kim, Irfan A. Rather, The intertwine of nanotechnology with the food industry, *Saudi Journal of Biological Sciences*, Volume 25, Issue 1, 2018, Pages 27-30, ISSN 1319-562X, <https://doi.org/10.1016/j.sjbs.2017.09.004>.
  14. Bilal Ahmad Paray, Irfan A. Rather, Mohammad K. Al-Sadoon, **Alshammari Fanar Hamad**, Pharmaceutical significance of *Leuconostoc mesenteroides* KS-TN11 isolated

from Nile Tilapia, *Oreochromis niloticus*, Saudi Pharmaceutical Journal, Volume 26, Issue 4, 2018, Pages 509-514, ISSN 1319-0164, <https://doi.org/10.1016/j.jsps.2018.02.006>.

15. **Alshammari Fanar Hamad**, Jong-Hun Han, Irfan Ahmad Rather. Mouse model of DNCB-induced atopic dermatitis. Bangladesh Journal of Pharmacology, 12(2), 147-150, 2017. [DOI: 10.3329/bjp.v12i2.31950](https://doi.org/10.3329/bjp.v12i2.31950)
16. **Alshammari Fanar Hamad**, Hye-Young Jeong, Jong-Hun Han, Irfan Ahmad Rather, Detection of cytosolic tRNA in mammal by Northern blot analysis. Bangladesh Journal of Pharmacology, 12(3), 243-250, 2017. [DOI: 10.3329/bjp.v12i3.32501](https://doi.org/10.3329/bjp.v12i3.32501)
17. Bajpai VK, Rather IA, Majumder R, **Alshammari Fanar Hamad**, Nam GJ & Park YH. Characterization and antibacterial mode of action of lactic acid bacterium *Leuconostoc Mesenteroides* HJ69 isolated from Korean traditional fermented food Kimchi. Journal of Food Biochemistry, 41(1), 12290, 2016. [doi: 10.1111/jfbc.12290](https://doi.org/10.1111/jfbc.12290)
18. Rather, I. A., Majumder, R., **Alshammari, F. H.**, Park, J. G., & Bajpai, V. K. (2016). Review-Ulcerative colitis and probiotics: an overview. Pakistan Journal of Pharmaceutical Sciences, 29(5 (Supl.)), 1877-1880.
19. Vivek K. Bajpai, Irfan A. Rather, **Alshammari Fanar Hamad**, Purification of bacteriocins using size-exclusion chromatography, Bangladesh Journal of Pharmacology, 11(2), 281, 2016. [DOI: 10.3329/bjp.v11i2.25862](https://doi.org/10.3329/bjp.v11i2.25862)

**(Under Review/Submitted/in preparation)**

1. **Alshammaria Fanar**, Md Badrul Alam, Naznin M, Kim SH, Lee SH. Attenuation of melanin production by optimized Ajwa seeds extract in MNT-1 cells with profiling of secondary metabolite by high resolution of mass spectroscopy (**under review, Industrial Crops and products, IF: 6.4**).
2. **Alshammari Fanar**, Ahsan Javed, Md Badrul Alam, Sunghwan Kim, Sang-Han Lee. Identification of Secondary Metabolites in Un-ripe Ajwa Date Pulp (*Phoenix dactylifera* L.) and Optimized Condition of Enzymes inhibition Using Response Surface Methodology and Artificial Neuronal Network Models (**under review, Antioxidants, IF: 7.2**).
3. Ahsan Javed, **Alshammari Fanar**, Ali Tahir, Waleed Sultan. Extraction of phytochemicals. Book Chapter Functional Phytochemicals in the Disease Treatment and Management. (**Publisher: Intelligensia Publishing Services IPS, In Revision**).