

Drug Design, Analysis and Delivery Research Group

- **Title of group:** Drug Design, Analysis and Delivery Research Group
- **Head of research group:** Dr. Akram Ashames



Research areas

- Formulation and drug delivery
- Bioavailability and bioequivalence
- Nanocarriers for cancer diagnosis and therapy
- Pharmaceutical counterfeiting
- Nanoparticle synthesis & characterization
- Biological separation & characterization

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- **Research group members**
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 4. Dr. Farah Ahmed
 5. Dr. Sai HS. Boddu
 6. Dr. Zehra Eddis
 7. Dr. Richie Bhandare
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 10. Mrs. Sawsan Shanabli
 11. Mrs. Sundos Al Ebrahim
 12. Mrs. Sabrina Ait Gacem
 13. Mrs. Haya Yassin

14. Mrs. May Ibrahim
15. Mr. Mohammed Mohajir
16. Mr. Mohamed Abdualgadir
17. Mrs. Sham Mohamed Zain AlAbdin
18. Mrs. Zainab Ahmed

- **Research areas**

The group's research focus areas over a wide range of pharmaceuticals and pharmaceutical synthesis and analysis, which are

Pharmaceutics Focus Area

- Formulation and drug delivery
- Bioavailability and bioequivalence
- Nanocarriers for cancer diagnosis and therapy

Pharmaceutical Synthesis & Analysis Focus Area

- Pharmaceutical counterfeiting
- Nanoparticle synthesis & characterization
- Separation & characterization of biological samples

Current projects

1. Development of microwave-processed solid dispersion itraconazole nanoparticles in formulation filled in vegetable capsules.
2. Comparative study of antimicrobial activity of various silver nanoparticles synthesized by different green methods.
3. Phytochemical and safety studies of *Ephedra alata Decne* (Arabic: Alanda, Family Ephedraceae), a Palestinian medicinal plant, used for the treatment of cancer.
4. Synthesis and antimicrobial activity of copper iodide nanoparticles (NPs) within polymer matrices on *Escherichia coli*, *Streptococcus pyogenes*, *Enterococcus faecalis*, *Bacillus subtilis*, *Proteus mirabilis*, *Pseudomonas aeruginosa* and *Candida albicans*.
5. Synthesis, characterizations and biological applications of nanoemulsion based synthetic chalcones.

Research Facilities



جامعة عجمان
AJMAN UNIVERSITY

College of Pharmacy & Health Sciences

Research Facility (Ajman Campus)

Instrumental Testing



High-performance liquid chromatograph (HPLC)
Model: Prominence-i
Shimadzu (Japan)



Fourier transform infrared (FTIR)
Model: IRAffinity
Shimadzu (Japan)



Ultraviolet-Visible (UV-Vis) Spectrophotometry
Model: UV-1800
Shimadzu (Japan)



Microwave synthesizer
Model: Discover SP
CEM (USA)



Rotary evaporator
Model: Rotavapor® R-300
Buchi (Switzerland)



Full automated chemistry analyzer
Model: BT1500
Biotecnica (Italy)



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Instrumental Testing



Climate Chamber
Memmert (Germany)



SZ-100 Nanoparticle Size & Zeta Potential Analyzer
Horiba (France)



Mini-protean tetra cell system
BioRad (USA)



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Physical Testing



Disintegration tester
Model: ZT-51
Erweka (Germany)



Dissolution apparatus
Model: DT 60
Erweka (Germany)



Tablet friability tester
Model: TAR 220
Erweka (Germany)



Tablet hardness tester
Model: TH3/500
Copley scientific (UK)



Two cylinder tapped density tester
Model: JV2000
Copley scientific (UK)



Double Cone Mixer
Model: DKM
Erweka (Germany)