

# Hashem Obaid Alsaab

Cell: (KSA)+966556047523

Hashemalsaab@gmail.com

Hashem.alsaab@wayne.edu

Experienced Research scientist with a demonstrated history of working in the higher education and clinical practice. Skilled in Pharmaceutical sciences, Nanotechnology, Spectroscopy, Cancer research, Drug delivery, nanotechnology, and Biotechnology. Strong research professional with a Doctor of Pharmacy (Pharm.D) and Master of Science (M.S.) focused in Pharmaceutical Sciences- Industrial Pharmacy from University of Toledo, Toledo, OH and Doctor of Philosophy (Ph.D.) in Pharmaceutical Sciences from Wayne State University, Detroit, MI, USA.

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## Education

- ❖ (2018) PhD, Wayne State University, Detroit, MI, USA. GPA is **3.96 out of 4**.
- ❖ (2015) M.S. degree from the University of Toledo, College of Pharmacy and Pharmaceutical Sciences, Toledo, OH, USA. GPA is **3.92 out of 4**.
- ❖ (2010) Doctor of Pharmacy (Pharm.D.) from King Abdul Aziz University, Faculty of Pharmacy, Jeddah, Saudi Arabia. GPA is **4.44 out of 5**.

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## Current Position

- ❖ (2018- present) Assistant Professor of Pharmaceutics and Pharmaceutical Technology, Taif University, Saudi Arabia.
- ❖ (2016- 2018) WOC Graduate Research Assistant at VAMC and Karmanos Cancer Institute at Wayne State University, Detroit, MI, USA. (Dr. Arun Rishi's lab).
- ❖ (2015-2018) Graduate Research Assistant (PhD student) in Pharmaceutical Sciences at college of Pharmacy and Pharmaceutical Sciences at Wayne State University, Detroit, MI, USA. (Dr. Arun Iyer's lab).
  - Lab Name: Use-inspired Biomaterials and Integrated Nano Delivery (U-BiND) Systems Laboratory.
  - Our research is broadly focused on development of use-inspired nano-medical technologies aimed towards clinical translation using biocompatible delivery systems that have enhanced disease targeting with reduced toxicity burden to cancer patients.
- ❖ (2013-2015) Graduate Research Assistant (Master student) in Pharmaceutical Sciences at college of Pharmacy and Pharmaceutical Sciences, University of Toledo, Toledo, OH, USA.
  - Performing researches in Pharmaceutical Sciences especially pharmaceutical drug delivery and preformulation studies.
  - Responsibilities: design and development of pharmaceutical formulations, physicochemical evaluation, preformulation studies for compatibility and interactions, in vitro release profile, permeation studies, in-vivo and ex-vivo studies, stability studies, and cell culture.

- ❖ (2011-present) Teaching Assistant and Faculty member under Pharmaceutics and Pharmaceutical Technology department in Pharmacy college at Taif university, Taif, Saudi Arabia.

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### Skills

Language: Arabic - Literate Writing & Speaking

English - good Writing & Speaking

Computer: Microsoft Office (word, PowerPoint and excel), Endnote, Prism, and SPSS. Internet scholar. Critical and analytical thinking skills. Teaching and training skills. Planning skills.

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### Patents and Awards

1. **2018-W063-0059USP1** | U.S. Patent Application No. 62/612,122 | Method Of Treatment For Solid Tumors Containing Hypoxia And/Or Stroma Features
  2. Arun K. Iyer, **Hashem O. Alsaab** and Samaresh Sau. "Polymer Nanoparticles for Synergistic Combination Therapy against Drug Resistant Renal Cell Carcinoma": WSU IDF# 17-1452 (Filed July 09, 2017).
  3. **2018-A** prestigious Frank O. Taylor Pharmacy Scholarship award. The scholarship was created to support students specializing in industrial pharmacy, and today is awarded to students in the pharmaceutical sciences.
  4. **2018-AAPS**-student chapter Travel award from Wayne State University to attend American Association of Cancer Research (AACR) Meeting in Chicago, IL, US.
  5. **2016**-Travel Support to attend American Association of Pharmaceutical scientists (AAPS) Meeting a in Denver, CO, US.
  6. **2015**-Saudi Arabian Cultural Mission (SACM) Scholarship to study PhD degree at Wayne State University, Detroit MI, US
  7. **2014**- SACM Travel Support to attend American Association of Pharmaceutical (AAPS) Meeting a in San Diego, CA, US.
  8. **2013**- Saudi Arabian Cultural Mission (SACM) Scholarship to study Master's degree at the University of Toledo, Toledo OH, US.
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### Publications

1. **Alsaab, H.O.**; Alghamdi, M.S.; Alotaibi, A.S.; Alzhrani, R.; Alwuthaynani, F.; Althobaiti, Y.S.; Almalki, A.H.; Sau, S.; Iyer, A.K. Progress in Clinical Trials of Photodynamic Therapy for Solid Tumors and the Role of Nanomedicine. *Cancers* 2020, 12, 2793. **(IF: 6.12)**.
2. Alsanie, W.F., Bahri, O.A., Habeeballah, H.H., Alhomrani, M., Almeahmadi, M.M., Alsharif, K., Felemban, E.M., Althobaiti, Y.S., Almalki, A.H., **Alsaab, H.O.** and Gaber, A., **2020**. Generating homogenous cortical preplate and deep-layer neurons using a combination of 2D and 3D differentiation cultures. *Scientific reports*, 10(1), **Nature** pp.1-11.
3. Alzhrani, Rami, **Hashem O. Alsaab**, Alex Petrovici, Ketki Bhise, Kushal Vanamala, Samaresh Sau, Matthew J. Krinock, and Arun K. Iyer. "Improving the therapeutic efficiency of noncoding RNAs in cancers using targeted drug delivery systems." **Drug Discovery Today** (2019). **(IF: 6.369)**.

4. Althobaiti, Y.S., Almalki, A., **Alsaab, H.** et al. Pregabalin: Potential for Addiction and a Possible Glutamatergic Mechanism. *Sci Rep* 9, **Nature** 15136 (2019) doi:10.1038/s41598-019-51556-4
5. Sau, Samaresh, Rami Alzhrani, Ketki Bhise, **Hashem O. Alsaab**, Sushil K. Kashaw, and Arun K. Iyer. "Nanomaterials for tumor immunomodulation and overcoming current clinical challenges." *NANOMEDICINE VOL. 14, NO. 12* (2019). **(IF: 4.727)**
6. PDL-1 antibody drug conjugate for selective chemo-guided immune modulation of cancer. S Sau, A Petrovici, **HO Alsaab**, K Bhise, AK Iyer. *Cancers* 11 (2), 232. **(IF: 6.6)**.
7. **Alsaab, H.O.**, Sau, S., Alzhrani, R.M., Cheriyan, V.T., Polin, L.A., Vaishampayan, U., Rishi, A.K. and Iyer, A.K., 2018. Tumor hypoxia directed multimodal nanotherapy for overcoming drug resistance in renal cell carcinoma and reprogramming macrophages. *Biomaterials*. **(IF: 9.315)**.
8. Imaging tools to enhance animal tumor models for cancer research and drug discovery. **HO Alsaab**, R Alzhrani, AH Almalki, YS Althobaiti, S Sau, AK Iyer. *Animal Models in Cancer Drug Discovery*, 75-106. **(Book Chapter)**.
9. Bhise, K., Sau, S., Kebriaei, R., Rice, S., Stamper, K., **Alsaab, H.**, Rybak, M. and Iyer, A., 2018. Combination of Vancomycin and Cefazolin Lipid Nanoparticles for Overcoming Antibiotic Resistance of MRSA. *Materials*, 11(7), p.1245. **(IF: 2.728)**.
10. Cheriyan, V.T., **Alsaab, H.**, Sekhar, S., Venkatesh, J., Mondal, A., Vhora, I., Sau, S., Muthu, M., Polin, L.A., Levi, E. and Bepler, G., 2018. A CARP-1 functional mimetic compound is synergistic with BRAF-targeting in non-small cell lung cancers. *Oncotarget*, 9(51), p.29680. **(IF: 5.168)**.
11. **Alsaab, H.O.**, Sau, S., Cheriyan, V.T., Alzhrani, R., Vaishampayan, U., Rishi, A.K. and Iyer, A.K., 2018. Tumor multicomponent targeting nano-micelles with synergistic combination to overcome drug resistance and reprogramming of macrophages in renal cell carcinoma. *Cancer Research*. **(IF: 9.130)**.
12. Sau, S., Petrovici, A., **Alsaab, H.** and Iyer, A.K., 2018. PD-L1 antibody drug conjugate for cancer immune-chemo combination therapy. *Cancer Research*. **(IF: 9.130)**.
13. **Alsaab, H.O.**, Sau, S., Cheriyan, V.T., Vaishampayan, U., Rishi, A.K. and Iyer, A.K., 2018. Tumor multifunctional targeting polymeric nanomicelles with polypharmacy payload for effective therapy and imaging of resistant renal cell carcinoma. *Cancer Research*. **(IF: 9.130)**.
14. Sau, S., **Alsaab, H.**, Tatiparti, K., Bhise, K., Rishi, A. and Iyer, A.K., 2018. Tumor multicomponent targeting nanoparticle library for personalized cancer therapy & imaging. *Cancer Research*. **(IF: 9.130)**.
15. Wang, Z., Sau, S., **Alsaab, H.O.** and Iyer, A.K., 2018. CD44 directed nanomicellar payload delivery platform for selective anticancer effect and tumor specific imaging of triple negative breast cancer. *Nanomedicine: Nanotechnology, Biology and Medicine*, 14(4), pp.1441-1454. **(IF: 6.692)**.
16. Sau, S., Tatiparti, K., **Alsaab, H.O.**, Kashaw, S.K. and Iyer, A.K., 2018. A tumor multicomponent targeting chemoimmune drug delivery system for reprogramming the tumor microenvironment and personalized cancer therapy. *Drug discovery today*. **(IF: 6.369)**.
17. Sau, S.\*, **Alsaab, H.O.\***, Bhise, K., Alzhrani, R., Nabil, G. and Iyer, A.K., 2018. Multifunctional nanoparticles for cancer immunotherapy: A groundbreaking approach for reprogramming malfunctioned tumor environment. *Journal of Controlled Release*. **(IF: 7.705)**. **\*Equal First Author**.
18. Cheriyan, V.T.\*, **Alsaab, H.O.\***, Sekhar, S., Stieber, C., Kesharwani, P., Sau, S., Muthu, M., Polin, L.A., Levi, E., Iyer, A.K. and Rishi, A.K., 2017. A CARP-1 functional mimetic

- loaded vitamin E-TPGS micellar nano-formulation for inhibition of renal cell carcinoma. *Oncotarget*, 8(62), p.104928. (IF: 5.168). \*Equal First Author.
19. Bhise, K., Sau, S., **Alsaab, H.**, Kashaw, S.K., Tekade, R.K. and Iyer, A.K., 2017. Nanomedicine for cancer diagnosis and therapy: advancement, success and structure–activity relationship. *Therapeutic delivery*, 8(11), pp.1003-1018. (IF: 1.79).
  20. Luong, D., Kesharwani, P., **Alsaab, H.O.**, Sau, S., Padhye, S., Sarkar, F.H. and Iyer, A.K., 2017. Folic acid conjugated polymeric micelles loaded with a curcumin difluorinated analog for targeting cervical and ovarian cancers. *Colloids and Surfaces B: Biointerfaces*, 157, pp.490-502. (IF: 3.887).
  21. **Alsaab, H.O.**, Sau, S., Alzhrani, R., Tatiparti, K., Bhise, K., Kashaw, S.K. and Iyer, A.K., 2017. PD-1 and PD-L1 checkpoint signaling inhibition for cancer immunotherapy: mechanism, combinations, and clinical outcome. *Frontiers in pharmacology*, 8, p.561. (IF: 4.44).
  22. Sau, S., **Alsaab, H.O.**, Kashaw, S.K., Tatiparti, K. and Iyer, A.K., 2017. Advances in antibody–drug conjugates: a new era of targeted cancer therapy. *Drug discovery today*. (IF: 6.369).
  23. **Alsaab, H.**, Alzhrani, R.M., Kesharwani, P., Sau, S., Boddu, S.H. and Iyer, A.K., 2017. Folate decorated nanomicelles loaded with a potent curcumin analogue for targeting retinoblastoma. *Pharmaceutics*, 9(2), p.15. (IF: 3.746)
  24. Wickens, J.M., **Alsaab, H.O.**, Kesharwani, P., Bhise, K., Amin, M.C.I.M., Tekade, R.K., Gupta, U. and Iyer, A.K., 2017. Recent advances in hyaluronic acid-decorated nanocarriers for targeted cancer therapy. *Drug discovery today*, 22(4), pp.665-680. (IF: 6.369)
  25. Sharma, A.K., Gothwal, A., Kesharwani, P., **Alsaab, H.**, Iyer, A.K. and Gupta, U., 2017. Dendrimer nanoarchitectures for cancer diagnosis and anticancer drug delivery. *Drug discovery today*, 22(2), pp.314-326. (IF: 6.369)
  26. **Alsaab, H.**, Sindhu Prabha Bonam, Dherya Bahl, Pallabita Chowdhury, Kenneth Alexander, and Sai HS Boddu. "Organogels in drug delivery: a special emphasis on pluronic lecithin organogels." *Journal of Pharmacy & Pharmaceutical Sciences* 19, no. 2 (2016): 252-273. (IF:2.1)
  27. **Alsaab, H.**, Alzhrani, R.M. and Boddu, S.H., 2016. Evaluation of the percutaneous absorption of chlorpromazine from PLO gels across porcine ear and human abdominal skin. *Drug development and industrial pharmacy*, 42(8), pp.1258-1266. (IF: 2.295)
  28. Boddu, S.H., **Alsaab, H.**, Umar, S., Bonam, S.P., Gupta, H. and Ahmed, S., 2015. Anti-inflammatory effects of a novel ricinoleic acid poloxamer gel system for transdermal delivery. *International journal of pharmaceutics*, 479(1), pp.207-211. (IF: 4.229)

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### Poster and Speaker Presentations

1. **Alsaab, H.O.**, Sau, S., Cheriyan, V.T., Alzhrani, R., Vaishampayan, U., Rishi, A.K. and Iyer, A.K., 2018. Tumor multicomponent targeting nano-micelles with synergistic combination to overcome drug resistance and reprogramming of macrophages in renal cell carcinoma. American Association of Cancer Research (AACR) Meeting in Chicago, IL, US. **2018. Received AAPS Travel Award, AACR, Chicago, IL, USA.**
2. Sau, S., Petrovici, A., **Alsaab, H.O** and Iyer, A.K., 2018. PD-L1 antibody drug conjugate for cancer immune-chemo combination therapy. American Association of Cancer Research (AACR) Meeting in Chicago, IL, US. **2018. Received Best Research Award, AACR, Chicago, IL, USA.**
3. **Alsaab, H.O.**, Sau, S., Cheriyan, V.T., Vaishampayan, U., Rishi, A.K. and Iyer, A.K., 2018. Tumor multifunctional targeting polymeric nanomicelles with polypharmacy

- payload for effective therapy and imaging of resistant renal cell carcinoma. American Association of Cancer Research (AACR) Meeting in Chicago, IL, US. **2018**.
4. Sau, S., **Alsaab, H.O.**, Tatiparti, K., Bhise, K., Rishi, A. and Iyer, A.K., 2018. Tumor multicomponent targeting nanoparticle library for personalized cancer therapy & imaging. American Association of Cancer Research (AACR) Meeting in Chicago, IL, US. **2018**.
  5. **Hashem Alsaab**, Vino T. Cheryan, Prashant Kesharwani, Arun K. Rishi, and Arun K. Iyer. CARP-1 functional mimetic loaded in Vitamin E-TPGS micellar nano-formulation for treating renal cell carcinoma. 13th Annual Research Forum (**March 2017**), Department of Pharmaceutical Sciences, Eugene Applebaum College of Pharmacy and Health Sciences, Wayne State University.
  6. Folate Receptor Targeted Liposome for Treating Cancer and Autoimmune Disease. Graduate and postdoctoral research symposium, Wayne State University, 8th March **2017**. Samaresh Sau, Sushil K. Kashaw, **Hashem Alsaab**, Arun K Iyer. *Received Best Poster Award.*
  7. Ketki Bhise, Shaimaa Yousef, **Hashem Alsaab**, Sushil Kumar Kashaw, Samaresh Sau and Arun Iyer\*. Ligand Decorated Nanoparticles Engineered Using Copper Free Click Chemistry for Targeted Cancer Therapy. The Graduate and Postdoc Research Symposium (**March 2017**).
  8. **Hashem Alsaab**, P. Kesharwani, S. Padhye, F.H. Sarkar, A.K. Iyer. Folic Acid-Decorated Polymeric Nanomicelles for Targeted Delivery of a Potent Flavonoid Analogue to Folate Overexpressing Cancers. American Association of Pharmaceutical Scientists (AAPS) Annual Meeting and exposition, Denver, CO (**November 2016**).
  9. **Hashem Alsaab**, P. Kesharwani, S. Padhye, F.H. Sarkar, A.K. Iyer. Hyaluronic Acid Anchored PAMAM Dendrimer Mediated Delivery of 3,4-difluorobenzylidene Diferuloylmethane to CD44 Overexpressing Pancreas Cancer Cells. American Association of Pharmaceutical Scientists (AAPS) Annual Meeting and exposition, Denver, CO (**November 2016**).
  10. P. Kesharwani, **Hashem Alsaab**, S. Padhye, F.H. Sarkar, A.K. Iyer. Hyaluronic Acid Decorated Nanomicelles Loaded with a Potent Anticancer Flavonoid Analogue to CD44 Expressing Stem- Like Pancreatic Cancer Cells. American Association of Pharmaceutical Scientists (AAPS) Annual Meeting and exposition, Denver, CO (**November 2016**).
  11. **Hashem Alsaab**, Prashant Kesharwani, Vino T. Cheryan, Arun K. Rishi, and Arun K. Iyer. CARP-1 functional mimetic loaded in Vitamin E-TPGS micellar nano-formulation for treating renal cell carcinoma. 13th Annual Research Forum (**October 2016**) Department of Pharmaceutical Sciences, Eugene Applebaum College of Pharmacy and Health Sciences, Wayne State University.
  12. **Hashem Alsaab**, Cale Streeter, Shirish Gadgeel, Steven M. Firstine, and Arun K. Iyer. Ligand Anchored Anti PD-1 Antibody for Targeting and Imaging of Disease Sites. 13th Annual Research Forum (**October 2016**) Department of Pharmaceutical Sciences, Eugene Applebaum College of Pharmacy and Health Sciences, Wayne State University.
  13. **Hashem Alsaab**, Prashant Kesharwani, Vino T. Cheryan, Arun K. Rishi, and Arun K. Iyer. CARP-1 functional mimetic loaded in Vitamin E-TPGS micellar nano-formulation for treating renal cell carcinoma. Medical Research Symposium (**October 2016**) College of Medicine, Wayne State University.
  14. Folic acid decorated polymeric micelles loaded with 3,4-difluorobenzylidene diferuloylmethane for targeting cervical and ovarian cancers. Duy Luong a, Prashant Kesharwani, **Hashem Alsaab**, Rami Alzhrani, Fazlul H. Sarkar, Subhash Padhye, Arun K. Rishi and Arun K. Iyer (**October 2017**)

15. Prashant Kesharwani, **Hashem Alsaab**, Fazlul H. Sarkar, Arun K Iyer. Hyaluronic acid conjugated dendrimers based nano-formulation for targeted therapy of pancreatic cancer. Cancer Metabolism Symposium, University of Michigan (**May 2016**).
16. Kesharwani P, **Hashem Alsaab**, Deshmukh R, Banerjee S, Padhye S, Sarkar FH, Iyer AK. Hyaluronic acid-conjugated polyamidoamine dendrimers for targeted delivery of 3,4-difluorobenzylidene curcumin to CD44 overexpressing pancreatic cancer cells. 12<sup>th</sup> Annual Research Forum (**November 2015**). Department of Pharmaceutical Sciences, Eugene Applebaum College of Pharmacy and Health Sciences, Wayne State University.
17. AAPS Annual Meeting and Exposition, San Diego, CA, USA. Anti-inflammatory Effect of a Novel Ricinoleic Acid Poloxamer Gel System for Transdermal Delivery. **2014**
18. 47th Annual Mid-Atlantic Graduate Student Symposium (MAGSS) in Medicinal Chemistry, Toledo, OH, USA. **2014**
19. 4th RIDPM – Pharmacy Symposium & Exhibition, Riyadh, SA. **2010**
20. 2nd annual medication awareness day – King Abdul-Aziz University Hospital. **2009**

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### Experience

- Assistant Professor, College of Pharmacy, Taif University, Saudi Arabia **2018- Present**
- Graduate Research Assistant at WSU, Detroit MI **2015- 2018**
- Graduate Research Assistant at University of Toledo, Toledo, OH, USA. **2013- 2015**
- Study English language at American Language Program **March, 2012 – May, 2013**  
(ALP) at Ohio State University, Columbus, OH, USA.
- Teaching assistant of Pharmaceutical Biotechnology Lab **Dec, 2011- Feb, 2012.**
- Training in Poison Control and Forensic Chemistry Center, Jeddah, SA **2010**
- Two month working in community pharmacy, Jeddah, SA. **2010**
- Six Months Pharmacy Intern in King Abdul-Aziz University **Oct, 2009-April, 2010**  
Hospital, Jeddah, SA.
- Summer training in king Abdul-Aziz Hospital, Jeddah, SA. **2007**

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### Membership

- ❖ Member, American Association of Pharmaceutical Scientists (AAPS)
- ❖ Member, American Chemical Society (ACS)
- ❖ Member, American Association of Colleges of Pharmacy (AACP)
- ❖ American Association of Cancer Research (AACR)

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### References

Available upon request.