

**Taslim A. Al-Hilal, Ph.D**

**Name:** Taslim Ahmed Al-Hilal  
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**Employment**

Year	Academic Title	Field of Study	Institution and Location
Sep' 2019-Present	Assistant Professor	Disease-on-a-chip, Tumor microenvironment, Vascular biology	School of Pharmacy, The University of Texas at El Paso, TX
Jan' 2019-Aug' 2019	Post-doctoral Research Fellow	Fibrosis and Cancer Mechanotransduction	Division of Pulmonary and Critical Care Medicine, Massachusetts General Hospital, Harvard Medical School, MA (Supervisor: Dr. David Lagares)
Oct' 2015-Dec' 2018	Post-doctoral Research Fellow	Tissue-on-a-chip, Cancer angiogenesis, Pulmonary drug delivery	School of Pharmacy, Texas Tech University Health Sciences Center, TX
Aug' 2014-Sep' 2015	Visiting Research Scientist	Cancer angiogenesis, Drug development	Center for Theragnosis, Korea Institute of Science and Technology (KIST), Seoul, South Korea (Supervisor: Dr. In-San Kim)

**Education**

Year	Degree	Department	Institution and location	Dissertation title & Supervisor
2010 - 2014	Ph.D.	Pharmaceutical Sciences	Seoul National University, South Korea	Molecular design of orally active heparin conjugates for the treatment of thrombosis and neo-angiogenesis (Supervisor: Dr. Youngro Byun)
2007 - 2010	M.Sc.	Pharmacy	Seoul National University, South Korea	Synthesis, characterization, and pharmacodynamics profiling of new orally absorbed heparin derivatives (Supervisor: Dr. Youngro Byun)
2002 - 2006	B Pharm.	Pharmacy	University of Development Alternative, Bangladesh	Pharmacological and toxicological study of <i>Devdarvarista</i> used in diabetes neuropathy (Mentor: Prof. Shahabuddin Kabir Chowdhury)

**Teaching of Students in Courses**

Year	Type of Responsibility	Type of Course
2019-	<b>Course Facilitator</b> Pharmaceutical Sciences, University of Texas EL Paso	Pharmacy Calculations – PHAR 6207 Principles of Pharmacokinetics and Pharmacogenomics– PHAR 6303 Pharmaceutics IA: Principles of Physical Pharmacy – PHAR 6202
2010-2014	<b>Graduate Teaching Assistant</b> Department of Pharmaceutics, Seoul National University	Advanced Pharmaceutics (Graduate level) Drug Delivery Systems I and II (Bachelor of Pharmacy level)

## Graduate students, Postdoctoral fellows, and Visiting scientists Trained:

### Current lab members

1. Zulfikar Azam, Ph.D, Post-doctoral fellow, December 2022 – present
2. Rijul Wahab, Ph.D, Post-doctoral fellow, December 2021 – present
3. Patricia Andrea Prado, MSc., Research Assistant/Associate, January 2022 – present
4. Mahedi Hasan, Ph.D. candidate, Spring 2021 – present, UTEP
5. Tamanna Islam, Ph.D. candidate, Summer 2022 – present, UTEP
6. Mohammad Karim, Ph.D. student, Spring 2021 – present, UTEP
7. Angel Lerma, Ph.D. student, Spring 2022 – present, UTEP
8. MD Mynul Hassan, Ph.D. student, Spring 2022 – present, UTEP
9. Gambler Lynch, Undergraduate student, Biology, Fall 2022 – present, UTEP

### Past lab members

10. Xiaojun Zhang, Ph.D, UTEP: Current position- Research Associate Professor, Henan Institute of Medical and Pharmaceutical Sciences, Zhengzhou University, Zheng Zhou
11. Jacob Hooper, Undergraduate student, Microbiology, Spring 2020 – Aug 2022, UTEP; COURI SURPASS Holder
12. Hopes F L Cervantes, Summer Undergraduate Research Assistant
13. Valeria Rodriguez, Summer Undergraduate Research Assistant

### Dissertation Committees Served

1. Xiaojun Zhang, PhD, Spring 2022; Role: Mentor
2. Gilberto Henao-Pabon, Ph.D, Spring 2020; Role: Committee member
3. Isaac G Deaguero, Ph.D, Spring 2020; Role: Committee member
4. Yangcheng Ma, PhD, Summer 2022; Role: Committee member
5. Amit Kumar Saha, MS, Fall 2022; Role: Committee member

### Grantsmanship:

#### CURRENT

1 R21 CA264627-01A1 (PI, Al-Hilal)	09/01/2022 – 08/31/2024	1.2 calendar
NCI	\$413,840.0	

**Title:** The role of tumor endothelium-specific prion-gene PRND in epithelial ovarian cancer

**Major Goals:** The goal of this project is to study the applicability of Doppel as a therapeutic option and to its role in the formation malignant ascites in epithelial ovarian cancer.

1 R01 CA262788-01A1 (PI, Al-Hilal)	08/01/2022 – 07/31/2027	1.2 calendar
NCI	\$1,745,584.00	

**Title:** Targeting of Doppel-axis to Control Lung Tumor Angiogenesis and Immunity

**Major Goals:** The goal of this project is to understand how Doppel helps in building lung tumor vasculatures, create immunosuppressive microenvironment, and develop a drug that will specifically block doppel activity in lung tumors.

1 SC1 GM144171-01 (PI, Al-Hilal)	07/01/2022 – 05/31/2026	2.4 calendar
NIGMS	\$1,507,750.00	

**Title:** Priming pancreatic ductal adenocarcinoma using blood thinners to sensitize the efficacy of checkpoint immunotherapy

**Major Goals:** The goal of this project is to determine the effect of intratumoral fibrin clots on tumor microenvironment and immunity, and whether the use of blood thinners enhance the efficacy of immunotherapy in different subtypes of pancreatic cancer.

NAID20220187 (PI, Al-Hilal)	03/1/2022 – 11/30/2022	0.6 calendar
LIZANELL AND COLBERT COLDWELL FOUNDATION	\$45,000	

**Title:** Early detection and therapeutic targeting of ovarian cancer using a testis-specific protein Doppel

**Major Goals:** To evaluate whether the expression of prion-like protein Doppel could be utilized as an ovarian cancer-specific biomarker.

3U54MD007592 - 28W2 (Al-Hilal) 09/1/2021 – 02/28/2023 1.2 calendar  
NIMHD NIDA \$151,000

**Title:** Role of maternal e-Cig use in embryonic to postnatal stages of brain angiogenesis in offspring  
**Major Goals:** The goal of this project is to assess the harm of maternal e-Cigarette use on their offspring cerebrovascular system and examine the impact of prenatal e-cigarette use on lifelong brain injuries.

RP210153 (PI, Cox; Co-PI, Al-Hilal) 08/31/2021 – 07/30/2026 2.4 calendar  
CPRIT \$5,881,734

**Title:** UTEP/MDACC partnership for Hispanic Cancer Disparities Research

**Project-1:** Microfluidic-based isolation and enumeration of circulating brain cancer cells to identify new cancer mediators of Hispanic pediatric patients

**Major Goals:** The goal of this project is to isolate and enumerate circulating brain cancer cells to identify new cancer mediators of Hispanic pediatric patients.

**Awarded to Al-Hilal's lab:** \$591,900 for 3 years

UTEP-TTUHSC Seed Grant (PI, Al-Hilal) 07/1/2021 – 06/30/2023 0.6 calendar  
UTEP-TTUHSC Office of Research \$25,000

**Title:** Deciphering the Role of Prion-like Protein Doppel in Ovarian Cancer

**Major Goals:** To evaluate whether the expression of prion-like protein Doppel could be utilized as an ovarian cancer-specific biomarker.

#### **PENDING**

1 R01 CA251793-01A1 (PI, Al-Hilal) 07/01/2022 – 05/31/2026 2.4 calendar  
NCI \$ 2,870,502.00

**Title:** Intratumoral fibrin as a novel immunomodulatory and matrix remodeling factor in pancreatic ductal adenocarcinoma

**Major Goals:** The goal of this project is to determine the effect of intratumoral fibrin-clots on tumor microenvironment and immunity, and whether the use of a fibrin- crosslinking inhibitor can enhance the efficacy of immunotherapy in pancreatic cancer.

**Percentile:** 19

#### **COMPLETED**

NAID-20200043 (PI, Al-Hilal) 11/1/2019 – 10/30/2022 1.2 calendar  
CMREF \$98,470

**Title:** Design and development of an efficient microfluidic device for the detection of blood circulating endothelial cells (CECs) as a PAH diagnostic marker and to identify age-specific PAH mediators

**Major Goals:** To isolate circulating endothelial cells from whole blood of PAH patients and identify novel gene expression profiles that could explain the different functional abnormalities between adult and pediatric PAH.

UTEP Startup (PI, Al-Hilal) 09/1/2019 – 08/31/2022  
UTEP School of Pharmacy,  
Funds provided by UTEP SOP to support the establishment of Laboratory and generation of preliminary data for grant proposals

DoD STTR Grant (PI, Rana; Co-PI, Al-Hilal) 4/12/2021 – 01/11/2022  
Office of the Secretary of Defense \$49,949

**Title:** Rapid and Reprogrammable Assay Development for Multiplexed Gene Detection

**Major Goals:** This Phase I project develops a compact, rapid, cost-effective, accurate, sensitive diagnostic for CYP2D6 and CYP2C19 genes in blood using an approach that combines Hybridization Chain Reaction and electrochemical sensing technology.

## Grant Review Activities

Year	Name of Committee	Institution/Organization
2023-	Digestive and Nutrient Physiology and Diseases, NIH	The NIH is the leading funding agency for research in the USA
2022-	KWF Kankerbestrijding	The Dutch Cancer Society (KWF Kankerbestrijding) is the leading funding agency for cancer research in the Netherlands
2020-	ConTex Collaborative Research Grants Competition	ConTex is a joint initiative of The University of Texas System and Mexico's CONACYT.
2019-	Study Section for Epidermolysis Bullosa Peer Review	DEBRA is a lead agency in <u>Austria</u> and a patient organization funding health research, whose mission is to find a cure for Epidermolysis Bullosa (EB)

## Consultant:

Zenon Biotech: September 16' 2021 - Current

## Patents

Korean Patent(s):

1. Bile acid oligomer conjugate for novel vesicular transport and use thereof [PCT/KR2012/010265. File reference: OPA12154PCT].
2. Doppel inhibiting agents [PCT/KR10-2015-0168485. File reference: SNU-2015-1156].

International Patent(s):

1. Byun Y, **Al-Hilal TA**, Jeon OC, Moon HT, Kim K, Yun J. Bile acid oligomer conjugate for novel vesicular transport and use thereof [EP2925786A4, US20150290335A1, WO2014084421A1].
2. Byun Y, Kim I-S, **Al-Hilal TA**, Kim SY, Jang YJ. Methods of inhibiting pathological angiogenesis with doppel targeting molecules [US20170260278A1].

## Full List of Publications

1. Kulkarni A, Gayathrinathan S, Nair S, Basu A, **Al-Hilal TA**, Roy S, (2022) Regulatory Roles of Noncoding RNAs in the Progression of Gastrointestinal Cancers and Health Disparities. *Cells*, 11(15):2448.
2. Choi JU\*, Zhang X\*, Hasan MM, Mazharul K, Chung SW, Alam F, Alqahtani F, Reddy SY, Kim IS, **Al-Hilal TA**<sup>†</sup>, Byun Y<sup>†</sup>, (2022) Targeting angiogenic growth factors using therapeutic glycosaminoglycans on doppel-expressing endothelial cells for blocking angiogenic signaling in cancer. *Biomaterials*, 283:121423. <sup>†</sup>Corresponding author.
3. Zhang X, Karim M, Hasan MM, Hooper J, Wahab R, Roy S, and **Al-Hilal TA**<sup>†</sup> (2022) Cancer-on-a-Chip: Models for Studying Metastasis, *Cancers*, 14, 648. <sup>†</sup>Corresponding author.
4. Haque MR, Rempert TH, **Al-Hilal TA**, Wang C, Bhushan A, Bishehsari F (2021) Organ-Chip Models: Opportunities for Precision Medicine in Pancreatic Cancer. *Cancers* 13 (17), 4487.
5. Choi JK LN, Seo H, Chung SW, **Al-Hilal TA**, Jin SP, Kweon S, Min N, Kim SK, Ahn S, Kim UK, Park JW, Kang CY, Kim IS, Kim SY, Kim K\* and Byun Y\* (2021) Anticoagulation therapy promotes the tumor immune-microenvironment and potentiates the efficacy of immunotherapy by alleviating hypoxia. *Journal for ImmunoTherapy of Cancer*, 9:e002332.
6. Shoyaib A Al, Alamri FF, Biggers A, Karamyan ST, Arumugum TV, Ahsan F, Mikelis CM, **Al-Hilal TA**, Karamyan VT (2021) Delayed Exercise-induced Upregulation of Angiogenic Proteins and Recovery of Motor Function after Photothrombotic Stroke in Mice, *Neuroscience*, 1;461:57-71.
7. Kadry H, Lagares D\*, and **Al-Hilal TA**\* (2021) Method for investigating fibroblast durotaxis. *Myofibroblasts: Methods and Protocols in Methods in Molecular Biology*, 227-236 \*Corresponding author.
8. Keshavarz A, Kadry H, Alobaida A, Nurunnabi M, **Al-Hilal TA**\* (2021) Bioengineering approach for pulmonary drug delivery. *Book Chapter in Bioinspired and Biomimetic Materials for Drug Delivery*, 241-276.

9. Deaguero IG, Huda MN, Rodriguez V, Zicari J, **Al-Hilal TA**, Badruddoza AZM\*, Nurunnabi M\*. (2020) Nano-vesicle based anti-fungal formulation shows higher stability, skin diffusion, biosafety and anti-fungal efficacy in vitro. *Pharmaceutics*, 12, 516.
10. Lim M, Badruddoza AZM, Firdous J, Azad M, Mannan A, **Al-Hilal TA**, Cho CS, Islam MA, (2020) Engineered Nanodelivery Systems to Improve DNA Vaccine MA. *Pharmaceutics*, Jan 1;12(1).

#### Prior to UTEP

11. **Al-Hilal TA\***, Hossain A\*, Alobaida A, Alam F, Keshavarz A, German N, Nozik-Grayck E, Stenmark KR, Ahsan F. (2021) Design, synthesis and biological evaluations of a long-acting, hypoxia-activated prodrug of fasudil, a ROCK inhibitor, to reduce its systemic side-effects. *Journal of Controlled Release*, 334:237-247.
12. **Al-Hilal TA**, Keshavarz A, Kadry H, Lahooti B, Al-Obaida A, Ding Z, Li W, Kamm R, McMurtry IF, Lahm T, Grayck EN, Stenmark KR, Ahsan F (2020) Pulmonary-arterial-hypertension (PAH)-on-a-chip: fabrication, validation and application, *Lab on a chip*, 20(18):3334-3345.
13. **Al-Hilal TA**, Chung SW, Choi JW, Alam F, Park J, Kim SW, Kim SY, Ahsan F, Kim I-S\*, Byun Y\*. (2016) Targeting prion-like protien doppel selectively suppresses tumor angiogenesis. *The Journal of Clinical Investigation*, 126(4):1251-1266.  
*Featured in the issue of Journal of Clinical Investigation as Editor's Pick.*  
*Highlighted in the issue of Nature Reviews Drug Discovery* (Link: <https://doi.org/10.1038/nrd.2016.79>)  
*Featured in Biological Research Information Center (BRIC), South Korea.*  
 (Link: [http://www.ibric.org/myboard/read.php?id=45766&Board=hbs\\_treatise&idauthorid=22964](http://www.ibric.org/myboard/read.php?id=45766&Board=hbs_treatise&idauthorid=22964))  
*Received an outstanding paper award from the School of Pharmacy, Seoul National University.*
14. **Al-Hilal TA**, Alam F, Park JW, Kim K, Kwon IC, Ryu GH, Byun Y. (2014) Prevention effect of orally active heparin conjugate on cancer-associated thrombosis. *Journal of Controlled Release*, 195:155-161.
15. **Al-Hilal TA**, Chung SW, Alam F, Park J, Lee KE, Jeon H, Kim K, Kwon IC, Kim I-S, Kim SY, Byun Y. (2014) Functional transformations of bile acid transporters induced by high-affinity macromolecules. *Scientific Reports*, 4:4163.
16. **Al-Hilal TA**, Park J, Alam F, Chung SW, Park JW, Kim K, Kwon IC, Kim IS, Kim SY, Byun Y. (2014) Oligomeric bile acid-mediated oral delivery of low molecular weight heparin. *Journal of Controlled Release*, 175:17-24.
17. **Al-Hilal TA**, Alam F, Byun Y. (2013) Oral drug delivery systems using chemical conjugates or physical complexes. *Advanced Drug Delivery Reviews*, 65(6):845-864.
18. Kadry H, **Al-Hilal TA**, Keshavarz A, Alam F, Xu C, Joy A, Ahsan F. (2018) Multi-purposable filaments of HPMC for 3D printing of Medications with Tailored Drug Release and Timed Absorption. *International Journal of Pharmaceutics*, 544(1):285-296.
19. Seo J, **Al-Hilal TA**, Jee JG, Kim YL, Kim HJ, Lee BH, Kim S, Kim IS. (2018) A targeted ferritin-microplasmin based thrombolytic nanocage selectively dissolves blood clots. *Nanomedicine: nanotechnology, biology, and medicine*, 14(3):633-642.
20. Alam F, **Al-Hilal TA**, Park J, Choi JW, Mahmud F, Kim SY, Lee DS, Byun Y. (2016) Multistage inhibition in breast cancer metastasis by orally active triple conjugate, LHTD4 (low molecular weight heparin-taurocholate-tetrameric deoxycholate). *Biomaterials*, 86:56-67.
21. Park J, **Al-Hilal TA**, Jeong J-H, Choi JW, Byun Y. (2015) Design, synthesis, and therapeutic evaluation of polyacrylic acid-tetraDOCA conjugate as a bile acid transporter inhibitor. *Bioconjugate Chemistry*, 26(8):1597-1605.
22. Kim JY, **Al-Hilal TA**, Chung SW, Kim SY, Ryu GH, Son WC, Byun Y. (2015) Antiangiogenic and Anticancer effect of an orally active low-molecular-weight heparin conjugates and its application to lung cancer chemoprevention. *Journal of Controlled Release*, 199:121-131.
23. Alam F, **Al-Hilal TA**, Chung SW, Park J, Mahmud F, Seo DH, Kim HS, Lee DS, Byun Y. (2015) Functionalized heparin-protamine based self-assembled nanocomplex for efficient anti-angiogenic therapy. *Journal of Controlled Release*, 197:180-189.

24. Alam F, **Al-Hilal TA**, Chung SW, Seo DH, Mahmud F, Kim HS, Kim SY, Byun Y. (2014) Oral delivery of a potent anti-angiogenic heparin conjugate by chemical conjugation and physical complexation using deoxycholic acid. *Biomaterials*, 35(24):6543-6552.
25. Chung SW, **Al-Hilal TA**, Byun Y. (2012) Strategies for non-invasive delivery of biologics. *Journal of Drug Targeting*, 20(6):481-501.
26. Rashid J, Alobaida A, **Al-Hilal TA**, Hammouda S, McMurtry IF, Nozik-Grayck E, Stenmark KR, Ahsan F. (2018) Repurposing rosiglitazone, a PPAR- $\gamma$  agonist and oral antidiabetic, as an inhaled formulation, for the treatment of PAH. *Journal of Controlled Release*, 280:113-123.
27. Choi JU, Chung SW, **Al-Hilal TA**, Alam F, Park J, Mahmud F, Jeong JH, Kim SY, Byun Y. (2017) A heparin conjugate, LHbisd4, inhibits lymphangiogenesis and attenuates lymph node metastasis by blocking VEGF-C signaling pathway. *Biomaterials*, 139:56-66.
28. Park J, Jeong J-H, **Al-Hilal TA**, Kim JY, Byun Y. (2015) Size-controlled heparin fragment-deoxycholic acid conjugate showed anticancer property by inhibiting VEGF-165. *Bioconjugate Chemistry*, 26(5):932-940.
29. Mahmud F, Jeon OC, **Al-Hilal TA**, Kweon S, Yang VC, Byun Y. (2015) Absorption mechanism of physical complex of monomeric insulin and deoxycholy-l-lysyl-methylester in the small intestine. *Molecular Pharmaceutics*, 12(6):1911-1920.
30. Jeon OC, Hwang SR, **Al-Hilal TA**, Park JW, Moon HT, Lee S, Park JH, Byun Y. (2013) Oral delivery of ionic complex of ceftriaxone with bile acid derivative in non-human primates. *Pharmaceutical Research*, 30(4):959-967. Cover article.
31. Hwang SR, Seo DH, **Al-Hilal TA**, Jeon OC, Kang JH, Kim SH, Kim HS, Chang YT, Kang YM, Yang VC, Byun Y. (2012) Orally active desulfated low molecular weight heparin and deoxycholic acid conjugate, 6ODS-LHbD, suppresses neovascularization and bone destruction in arthritis. *Journal of Controlled Release*, 163(3):374-384.
32. Eom JS, Koh KS, **Al-Hilal TA**, Park JW, Jeon OC, Moon HT, Byun Y. (2010) Antithrombotic efficacy of an oral low molecular weight heparin conjugated with deoxycholic asset on microsurgical anastomosis in rats. *Thrombosis Research*, 126(3):e220-e224.
33. Park JW, Kim SK, **Al-Hilal TA**, Jeon OC, Moon HT, Byun Y. (2010) Strategies for oral delivery of macromolecule drugs. *Biotechnology and Bioprocess Engineering*, 15:66-75.
34. Chung SW, Bae SM, Lee M, **Al-Hilal TA**, Lee CK, Kim JK, Ryu GH, Kim I-S, Kim SY, Byun Y. (2015) LHT7, a chemically modified heparin, inhibits multiple stages of angiogenesis by blocking VEGF, FGF2 and PDGF-B signaling pathway. *Biomaterials*, 37:271-278.
35. Alam F, Hwang SR, Chung SW, **Al-Hilal TA**, Park J, Jeon OC, Moon HT, Kim SY, Lee DS, Byun Y. (2015) Safety studies on intravenous infusion of a potent angiogenesis inhibitor: taurocholate conjugated low molecular weight heparin derivative LHT7 in a Preclinical Model. *Drug Development and Industrial Pharmacy*, 42(8):1247-1257.
36. Park JW, Jeon OC, Kim SK, **Al-Hilal TA**, Lim KM, Moon HT, Kim CY, Byun Y. (2011) Pharmacokinetic evaluation of an oral tablet form of low-molecular-weight heparin and deoxycholic acid conjugate as a novel oral anticoagulant. *Thrombosis and Haemostasis*, 105(6):1060-1071.
37. Park JW, Jeon OC, Kim SK, **Al-Hilal TA**, Jin SJ, Moon HT, Yang VC, Kim SY, Byun Y. (2010) High antiangiogenic and low anticoagulant efficacy of orally active low molecular weight heparin derivatives. *Journal of Controlled Release*, 148(3):317-326.
38. Park JW, Jeon OC, Kim SK, **Al-Hilal TA**, Moon HT, Kim CY, Byun Y. (2010) Anticoagulant efficacy of solid oral formulations containing a new heparin derivative. *Molecular pharmaceutics*, 7(3):836-843.
39. Haque MR, Kim J, Park H, Lee HS, Lee KW, **Al-Hilal TA**, Jeong JH, Ahn CH, Lee DS, Kim SJ, Byun Y. (2017) Xenotransplantation of layer-by-layer encapsulated non-human primate islets with a specified immunosuppressive drug protocol. *Journal of Controlled Release*, 258:10-21.
40. Park J, Jeon OC, Yun J, Nam H, Hwang J, **Al-Hilal TA**, Kim K, Kim K, Byun Y. (2016) End-Site-Specific Conjugation of Enoxaparin and Tetradeoxycholic Acid Using Nonenzymatic Glycosylation for Oral Delivery. *Journal of Medicinal Chemistry*, 59(23):10520-10529.

41. Shin J-Y, Jeong J-H, Han J, Bhang SH, Jeong G-J, Haque MR, **Al-Hilal TA**, Noh M, Byun Y, Kim B-S. (2015) Transplantation of heterospheroids of islet cells and mesenchymal stem cells for effective angiogenesis and antiapoptosis. *Tissue Engineering Part A*, 21(5-6):1024-1035.

### Editorial Activities

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|---|-----------------------------|
| 1. ACS Biomaterials Science & Engineering               | <i>Ad hoc Reviewer</i>      |
| 2. Apoptosis  | <i>Ad hoc Reviewer</i>      |
| 3. Biomaterials   | <i>Ad hoc Reviewer</i>      |
| 4. Cancer Journal, Publisher MDPI                       | <i>Special Issue Editor</i> |
| 5. Arthritis & Rheumatology                             | <i>Ad hoc Reviewer</i>      |
| 6. Drug Development and Industrial Pharmacy             | <i>Ad hoc Reviewer</i>      |
| 7. European Journal of Pharmaceutical Sciences          | <i>Ad hoc Reviewer</i>      |
| 8. Hypertension Research                                | <i>Ad hoc Reviewer</i>      |
| 9. International Journal of Molecular Sciences          | <i>Ad hoc Reviewer</i>      |
| 10. Journal of Investigational Medicine                 | <i>Ad hoc Reviewer</i>      |
| 11. Molecular Pharmaceutics                             | <i>Ad hoc Reviewer</i>      |
| 12. Scientific Reports                                  | <i>Ad hoc Reviewer</i>      |
| 13. Science Advances                                    | <i>Ad hoc Reviewer</i>      |
| 14. Nano Today  | <i>Ad hoc Reviewer</i>      |
| 15. Nanomedicine: Nanotechnology, Biology, and Medicine | <i>Ad hoc Reviewer</i>      |
| 16. International Journal of Nanomedicine               | <i>Ad hoc Reviewer</i>      |
| 17. Journal of Nanomaterials                            | <i>Guest Editor</i>         |

### Honors and Professional Memberships:

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|-------------|---|
| 2016        | Recipient of the Texas Tech University Health Sciences Center Postdoctoral Career Enhancement Award |
| 2010 - 2014 | Recipient of Brain Korea 21 Scholarship for doctoral studies at Seoul National University, Seoul    |
| 2007 - 2010 | Recipient of Brain Korea 21 Scholarship for master studies at Seoul National University, Seoul      |
| 2019 -      | Member, American Association of College of Pharmacy (AAPC)  |
| 2019 -      | Affiliate Member, American Thoracic Society (ATS)   |
| 2018 -      | Early Career Member, Biomedical Engineering Society (BMES)  |
| 2016 -      | Associate Member, American Association for Cancer Research (AACR)                                   |
| 2010 -      | Member, Asian Federation for Pharmaceutical Sciences (AFPS)   |
| 2008 -      | Member, Globalization of Pharmaceutics Education Network (GPEN)                                     |
| 2007 -      | Member, Korean Control Release Society (KCRS)   |

### Invited Presentations

- | Year | Title & Institution  |
|------|--|
| 2023 | Bioengineering and precision modeling of Pulmonary Arterial Hypertension<br><b>Research Seminar, University of Pittsburgh, PA (January)</b>  |
| 2022 | Intratumoral fibrin as a novel immunomodulatory and matrix remodeling factor in pancreatic ductal adenocarcinoma<br><b>Research Seminar, University of Illinois-Chicago, Chicago (November)</b>  |
| 2022 | The Role of Prion-like Protein "Doppel" in Cancer<br><b>UTEP Biosciences Seminar, El Paso, TX (September)</b>  |
| 2022 | On-chip capturing and enumeration of blood circulating endothelial cells identify the prion-like protein Doppel as a novel target of PAH<br><b>2<sup>nd</sup> International Pulmonary Hypertension/Heart Failure Symposium, Berlin, Germany (June)</b> |

- 2022 The Prion-like Protein Doppel as a Serum Biomarker for Epithelial Ovarian Cancer  
**14<sup>th</sup> Annual Research Symposium TTUHSCEP, El Paso, TX (May)**
- 2021 On-chip Capturing of Diseased Circulating Endothelial Cells and its Enumeration to Detect New Biomarkers of Pulmonary Arterial Hypertension  
**2021 International Joint Symposium of RIPS-CFPS, South Korea, (June)**
- 2020 Targeting Durotaxis, a Stiffness-Directed Cell Migration, in Metastatic Pancreatic Cancer  
**The Korean Society of Pharmaceutical Sciences and Technology, South Korea, (October)**
- 2020 Detection, treatment and bioengineering of cancer and vascular diseases using microfluidic tissue-chips  
**School of Pharmacy Spring Rx Change Speaker Seminar, The University of Texas at El Paso, Texas (February)**
- 2020 Targeting Durotaxis, a Stiffness-Directed Cell Migration, in Metastatic Pancreatic Cancer  
**Korea Institute of Science and Technology, Seoul, South Korea (January)**
- 2020 Microfluidic Chips for Studying the Pathophysiology, Treatment and Diagnosis of Pulmonary Arterial Hypertension (PAH)  
**Yeungnam University, Daegu, South Korea (January)**
- 2019 Circulating Endothelial Cells (CECs) as a Diagnostic Marker and to Identify New Drug Targets for Neonatal PAH.  
**Sixth Annual Neonatal Cardiopulmonary Biology Young Investigators Forum, Chicago (September)**
- 2018 Microfluidic tissue chips for the pathophysiology, therapy and diagnosis of PAH.  
**Wyss Institute for Biologically Inspired Engineering, Harvard Medical School, Boston (December)**
- 2014 Heparin based tumor endothelium targeting oral anti-angiogenesis inhibitors.  
**The 27<sup>th</sup> International Carbohydrate Symposium, India (January)**
- 2013 Receptor-like' functional transformation of bile acid transporters induced by high-affinity macromolecules.  
**The 3<sup>rd</sup> Asian Federation for Pharmaceutical Sciences, South Korea (November)**  
**Selected as the best oral presentation award.**
- 2013 Functional transformation of bile acid transporters induced by high-affinity macromolecules.  
**The 16<sup>th</sup> International Symposium on Recent Advances in Drug Delivery Systems, University of Utah, Utah (February)**
- 2012 High-affinity macromolecule induced functional transformation of bile acid transporter. **The 15<sup>th</sup> HU-SNU Joint Symposium, University of Hokkaido, Japan (December)**

### Poster presentations

1. **Hassan MM**, Wahab R, Sanchez S, Toy EP, Reddy SY, Roy S, **Al-Hilal TA**. An ascitic fluid-derived organoid platform for hispanic ovarian cancer patients to capture heterogeneity and disparity. *AACR Annual Meeting*, Apr 14-19, 2023, Orlando, Florida.
2. **Karim M**, Hassan MM, Wahab R, Hopper J, Bishehsari F, **Al-Hilal TA**. Fibrin-laden Tumor Stroma as an Immunosuppressive Factor in Pancreatic Ductal Adenocarcinoma. *SFB 2023 Annual Meeting*, Apr 19-22, San Diego, California.
3. **Hasan MM**, Wahab R, Karim M, Grippo P, Bishehsari F, **Al-Hilal TA**, Targeting Intratumoral Fibrin-clot Improves the Immune Checkpoint Inhibitor Efficacy Against Pancreatic Ductal Adenocarcinoma, *Globalization of Pharmaceuticals Education Network*, 2022, Oct 19-22, 2022, Minneapolis, Minnesota.
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