

Curriculum Vitae

Date Prepared: Jan 23, 2026
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Professional Summary:

I am an academic leader and translational scientist with over a decade of experience directing research strategy, managing funding portfolios, and fostering innovation ecosystems. I've managed over 40Mns SAR research funding portfolio, implementing effective resource allocation strategies and driving research excellence at the University of Tabuk. Raised more than 10 million SAR in research funding, led national initiatives in developing the ecosystem for biotech localization, and actively contributed to policy advisory committees. With a fellowship training and certifications from Harvard, and a PhD from the University of Ottawa, I bring a global perspective and a strong record in cancer immunotherapy and biotech development. My current leadership as Director of the Technology Transfer Office and former Vice-Dean for Research Affairs reflects my commitment to aligning research excellence with national development priorities. Adept at guiding research ecosystems through capacity building, strategic planning, and policy advising, with active engagement in national biotech strategies and international partnership building. Committed to fostering innovation through equitable and outcome-oriented funding models that accelerate scientific discovery and societal benefit.

Education:

2017	Postgraduate certificate	Cancer Biology and Therapeutics program	Harvard University
2016	Postgraduate certificate	Global Clinical Scholar Research Training program	Harvard University
2016	PhD	Microbiology and Immunology (Dr. John C. Bell and Dr. Rebecca C. Auer)	University of Ottawa
2011	MSc	Laboratory Medicine-Virology	Royal Melbourne Institute of Technology
2007	Bachelor	Medical Laboratory Technology	King Abdulaziz University

Postdoctoral Training:

02/2017-04/2018	Research Fellow	Cancer Immunotherapy and Oncolytic Virotherapy (Dr. Antonio E. Chiocca)	Harvard University/Brigham and Women's Hospital
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Faculty/Academic Appointments:

09/2023-present	Associate Professor	Faculty of Applied Medical Sciences	University of Tabuk (voting)
09/2019- present	Adjunct Associate Scientist	Immunology Research Program	King Abdullah International Medical Research Centre
12/2018-09/2023	Assistant Professor	Faculty of Applied Medical Sciences	University of Tabuk (voting)
05/2018-06/2019	Lecturer (part-time)	Harvard Medical School	Harvard University (non-voting)
04/2015-12/2019	Lecturer	College of Applied Medical Sciences	University of Tabuk (non-voting)
06/2008-03/2015	Demonstrator	College of Applied Medical Sciences	University of Tabuk (non-voting)

Appointments at Hospitals/Affiliated Institutions:

09/2018-present	Medical virology consultant	Diagnostic laboratories	The University of Tabuk Medical Centre
02/2017-04/2018	Postdoctoral Research Fellow	Neurosurgery	Brigham and Women's Hospital
01/2012-12/2016	PhD student	Centre for Innovative Cancer Research	Ottawa Hospital Research Institute
02/2011-07/2011	Master student	WHO collaborating Center for Reference and Research on Influenza	Victorian Infectious Diseases Reference Laboratory
05/2008-07/2009	Medical Laboratory Intern	Virology	King Abdulaziz University Hospital
01/2008-04/2008	Medical Laboratory Intern	IVF Laboratory	King Faisal Specialist Hospital
07/2007-12/2007	Medical Laboratory Intern	Microbiology	King Abdulaziz University Hospital

Leadership and Executive Experience:

2024- present	Director of the TTO	
9/2022-present	Member of the Research Ethics Committee	Jeddah University
10/2020-present	Member of a scientific committee	Ministry of Defense
9/2023-2025	Member of the scientific committee	Benefit & Risk Evaluation department (SFDA)
2/2022-10/2024	Head of the scientific committee for The President's Award of research and Innovation	Led the committee in identifying and recognizing exceptional research achievements.
1/2020-10/2023	Vice-dean for Research Affairs	Oversaw a 40Mns SAR research funding portfolio, implementing effective resource allocation strategies and driving research excellence.
11/2020-10/2023	Secretary general for the Institutional Fund committee	Vice-rectorship for Higher Education and Scientific Research
4/2020-7/2021	Business Development Consultant	SaudiVax Co., Leveraged market insights to drive business growth and identify licensing and collaboration opportunities.
6/2019-1/2021	Co-founder, Scientific and BD Consultant	ImmunoRx Ltd, Played a pivotal role in establishing the company, securing funding, and developing strategic partnerships.
12/2018-12/2019	Vice-dean for Development and Quality	Developed and executed the strategic research plan for the University of Tabuk, fostering a culture of innovation and quality.
Intellectual Property (IP) and Technology Transfer:		
12/2018-12/2021	Head of the patent unit	Led the patent unit at the Deanship of Scientific Research, ensuring effective management of IP assets and facilitating licensing agreements.
6/2016-12/2016	R&D scientist	Collaborated with Turnstone Biologics Ltd (Canada) to develop an oncolytic virus-based cancer vaccine for prostate cancer.
4/2017-10/2017	R&D scientist	Worked with Advantagene Inc (USA) to develop viral vector-based gene therapy for GBM treatment.

6/2017-2/2018	R&D scientist	Engaged in a partnership with NewLink Genetics Inc (USA) to develop an oncolytic virus-based vaccine for colon cancer.
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Business Development and Partnerships:

4/2020-7/2021	Supported the growth and expansion of SaudiVax Co. through market research, competitive analysis, and strategic planning.
6/2018-4/2019	Collaborated with RPDC Co. to identify market opportunities, evaluate potential investments, and develop business strategies.
6/2016-2/2018	Fostered partnerships with industry stakeholders, including Turnstone Biologics Ltd Advantagene Inc, and NewLink Genetics Inc, to advance research and commercialization efforts.

Professional Societies:

2018-present	American Association of Cancer Research	Member
2016-2017	Canadian Society for Immunology	Member
2013-2014	Saudi Society for Genomics and Molecular Oncology	Member
2010-2016	American Society of Clinical Pathology	Member
2010-2012	Pan American Society for Clinical Virology	Member

Honors and Prizes:

2024	Gold Medal with Congratulations	49th Geneva International Exhibition of Inventions	
2023	Prince Fahd bin Sultan Award for Scientific Excellence	Emirate Of Tabuk Province	Award from his royal highness Prince Fahd bin Sultan for Scientific Excellence in in innovation and creativity
2023	External funding award	President’s Award of research and Innovation - University of Tabuk	For receiving multiple external R&D fundings in 2022-2023
2022	Top highly cited scientist award in medical sciences at the University of Tabuk	President’s Award of research and Innovation - University of Tabuk	highly cited scientist in medical sciences at the University of Tabuk for the publication period 2019-2021
2016	High achieving Saudi student	Saudi Arabian Cultural Bureau, Canada	

2016	Best Translational Research Pitch for drug development	Harvard Medical School GCSRT class of 2017	
2016	BioCanRx Abstract Award	BioCanRx	Top 5 oral presentations award at the International Meeting on Replicating Oncolytic Virus Therapeutics, Vancouver, Canada.
2016	Harvard Medical School (DHFMR) scholarship	Dubai Harvard Foundation for Medical Research	A scholarship to cover the tuition fees of Cancer Biology & Therapeutics Program
2016	Saudi Arabia Ambassador Award	Saudi Arabian Embassy, Canada	
2016	Terrey Fox Research Institute Travel Award	Terrey Fox Research Institute	A travel award to cover travel and hotel expenses during Terrey Fox Annual meeting, Vancouver, BC, Canada.
2015	High achieving Saudi student	Saudi Arabian Cultural Bureau, Canada	
2015	Harvard Medical School (DHFMR) scholarship	Dubai Harvard Foundation for Medical Research	A scholarship to cover the tuition fees of GCSRT Clinical Trials training program
2014	High achieving Saudi student	Saudi Arabian Cultural Bureau, Canada	
2014	Terrey Fox Research Institute Travel Award	Terrey Fox Research Institute	A travel award to cover travel and hotel expenses during Terrey Fox Annual meeting, Montreal, QC, Canada.
2013	High achieving Saudi student	Saudi Arabian Cultural Bureau, Canada	

Report of Funded and Unfunded Projects

Funding Information

Projects Submitted for Funding

2025 (Funded) ~2Mn SAR	Developing a Heterologous Gardasil Vaccine Prime and MG1-E6E7 Boost for HPV-Associated Cancers Saudi National Institute of Health PI
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<p>2024 (Funded) ~1.8Mn SAR</p>	<p>Development of an Adenovirus-Based Vaccine Targeting the Conserved Glycoprotein E Domain III Sequence of Dengue Serotype 2 – The Most Common Dengue Virus in Saudi Arabia Saudi National Institute of Health Co-I</p>
<p>2023 (Funded) ~83K SAR</p>	<p>Generating a Tailored (Indication-Specific) VSV-Based Oncolytic Virotherapy King Abdullah International Medical Research Centre PI</p>
<p>2022 (Funded) ~1.7Mn SAR</p>	<p>Potentiating Cancer Cell Vaccine by Utilizing HSV Oncolytic Virus for Glioblastoma treatment King Abdullah International Medical Research Centre PI</p>
<p>2022 (Funded) ~2Mn SAR</p>	<p>Constructing and Combining Oncolytic Virotherapy with Checkpoint Inhibitors to Treat Glioblastoma King Abdullah International Medical Research Centre Co-I</p>
<p>2020 (Funded) 300K SAR</p>	<p>Developing the Oncolytic MG1 virus for Cancer Immunotherapy The University of Tabuk PI</p>
<p>2020 (Funded) 120K SAR</p>	<p>Personalized Oncolytic Cancer Vaccine for Cancer Immunotherapy The University of Tabuk PI</p>
<p>2020 (Funded) 100K SAR</p>	<p>Constructing Rhabdovirus-based SARS-CoV2 vaccine The University of Tabuk PI</p>
<p>2020 (Funded) ~1.4Mn SAR</p>	<p>Developing a Non-replicating Maraba Vaccine Platform Against SARS-CoV2 (COVID19) King Abdullah International Medical Research Centre PI</p>
<p>2020 (Not funded)</p>	<p>Micro-Movement Behavior as an Early Detection and Diagnosis Measurement for COVID-19 King Abdulaziz City for Science and Technology Co-I</p>
<p>2020 (Funded) ~1.6Mn SAR</p>	<p>Development of Novel Monoclonal Antibodies Specific for SARS-CoV-2 COVID19 Antibody phage display library King Abdullah International Medical Research Centre Co-I</p>
<p>2020 (Pending)</p>	<p>Characterization of Eosinophilic Esophagitis disease (EOE) associated gut microbiome before and after treatments. King Abdullah International Medical Research Centre Co-I</p>
<p>2020 (Not funded)</p>	<p>A neoantigen-based Personalized Oncolytic Cancer Vaccine for Cancer Immunotherapy</p>

	Worldwide Cancer Research PI
2019 (Funded) 25K SAR	Constructing an oncolytic VSV virus platform The University of Tabuk PI
2019 (Not funded)	Constructing and efficacy testing of oncolytic VSV virus co-expressing TAA and microRNA for breast cancer immunotherapy RDO- Industry partnership Initiative PI
2019 (Not funded)	Constructing a Pseudotyped Oncolytic Rhabdovirus as a boosting vector for GBM treatment. Islamic development bank. PI
2018 (Not funded)	Developing HSV-based oncolytic virus vaccine for glioblastoma treatment RDO- International Collaboration Initiative PI
2018 (Funded) ~1.8Mn SAR	Combining Oncolytic HSV Virotherapy with Tumor-Targeting Immune Modulatory Therapy to Treat Glioblastoma and other solid tumors RDO- International Collaboration Initiative Co-I
2017 (Not funded)	Systems biology approach to study MERS-CoV-human interaction, viral pathogenesis and immunity Infectious Diseases Research Grant Program, 5-17-01-009-0003 Co-I

Patents

1. Alkayyal AA, Mahmoud AB. 2022, Improving the Production of Oncolytic Viruses for Cancer Vaccines. Issued on Dec 2024.
 - a. **Saudi Arabia SAIP SA18893**
2. Alkayyal AA, Bell JC, Auer RC. 2017, Oncolytic rhabdovirus expressing IL12. Filed Aug 2017. **Licensed** to Turnstone Biologics LTD, CA
 - a. U.S. patent application US20190216868A1. **Granted Feb 2023**
 - b. Canada patent application CA3033613A1. **Pending**
 - c. Europe patent application EP17838259.4A. **Pending**
 - d. China patent application CN110050062A. **Pending**
 - e. Japan patent application JP2019527737A. **Pending**

Report of Scholarship

Peer-Reviewed Scholarship in print or other media:

Research Investigations

1. Mahmoud AB, Alhamawi RM, Taher MY, Alsubhi AS, Abouzied MM, Zahid HM, Alotaibi MA, Almarghalani N, Alotaibi K, Habash A, Alsharif SA, **Alkayyal A**. Integrated In Silico and In Vivo

- Evaluation of a Tetravalent SARS-CoV-2 RBD-Fc Fusion Vaccine with Broad Cross-Variant Antibody Responses. **Vaccines**. 2025 Dec
2. Damfo S, **Alkayyal AA**, Mahmoud AB. Identification of Small Molecule Inhibitors Targeting PD-L1 Protein Using Computational Tools and an Experimental Assay. **Anticancer Res**. 2025 Sep
 3. **Alkayyal AA**, Saeedi NH, Moawadh MS. Immunogenic mutanome of breast cancer: Advances, challenges and future directions in neoantigen-based immunotherapy. **Adv Clin Exp Med**. 2025 Aug
 4. **Alkayyal AA**. Insights from veterinary models for advancing oncolytic virotherapy through comparative oncology. **Front Mol Biosci**. 2025 May
 5. **Alkayyal AA**, Mahmoud AB. A 5-Year Update on the Clinical Development of Cancer Cell-Based Vaccines for Glioblastoma Multiforme. **Pharmaceuticals**. 2025 Mar
 6. Jalal, M. M., Algamdi, M. M., **Alkayyal, A. A.**, Altayar, M. A., Mouminah, A. S., Alamrani, A. J., Althaqafi, N. A., Alamrani, R. A., Alomrani, W. S., Alemrani, Y. A., Alhelali, M., Elfaki, I., & Mir, R. Association of iron deficiency anaemia with the hospitalization and mortality rate of patients with COVID-19. **Medicine International**, 2024 Sep
 7. **Alkayyal AA**, Manar M. Darwish, Reham Ajina, Saleh Y Alabbas, Mohammed A Alotaibi, Maha Bokhamseen, Maumonah Hakami, Omar A. Albaradie, Abdulaziz Moglan, Sharif Hala, Abdullah Faisal Alsaahafi, Samer Zakari, Adnan Almuzaini, Khamis Alsharari, Feras Kaboha, Mustafa Y Taher, Haggag S Zein, Fayhan Alroqi, Bakur Mahmoud A. Repurposing the oncolytic virus VSVΔ51M as a COVID-19 vaccine. **Frontiers in Bioeng. and Biotech**. 2023 Jul
 8. Bakur Mahmoud A, Albaradie OA, Moglan AM, Alroqi F, **Alkayyal AA**. Reconstruction of the Oncolytic Maraba MG1 Virus from a Fully Synthetic DNA Genome. **Journal of Biomaterials and Tissue Engineering**. 2023 Mar
 9. Moglan AM, Albaradie OA, Alsayegh FF, Alharbi HM, Samman YM, Jalal MM, Saeedi NH, Mahmoud AB, **Alkayyal AA**. Preclinical efficacy of oncolytic VSV-IFN β in treating cancer: A systematic review. **Front Immunol**. 2023 Mar
 10. Abdulal RH, Malki JS, Ghazal E, Alsaieedi AA, Almahboub SA, Khan MY, Alsulaiman RM, Ghaith MM, Abujamel TS, Ganash M, Mahmoud AB, **Alkayyal AA**, Hashem AM. Construction of VSVΔ51M oncolytic virus expressing human interleukin-12. **Front Mol Biosci**. 2023 May
 11. Mansouri S, Daniel L, Amhis N, Leveille M, Boudreau JE, **Alkayyal AA**, Collin Y, Tai LH. Perioperative oncolytic virotherapy to counteract surgery-induced immunosuppression and improve outcomes in pancreatic ductal adenocarcinoma. **Front Oncol**. 2023 Feb 16
 12. Niavarani SR, St-Cyr G, Daniel L, Lawson C, Giguère H, **Alkayyal AA**, Tai LH. Heterologous prime-boost cellular vaccination induces potent antitumor immunity against triple-negative breast cancer. **Front Immunol**. 2023 Feb 13
 13. **Alkayyal AA**, Ajina R, Cacciabue M, Alkayyal AA, Saeedi NH, Hussain Alshehry T, Kaboha F, Alotaibi MA, Zaidan N, Shah K, Alroqi F, Bakur Mahmoud A. SARS-CoV-2 RBD protein enhances the oncolytic activity of the vesicular stomatitis virus. **Front Immunol**. 2023 Jan 31

14. St-Cyr G, Penarroya D, Daniel L, Giguère H, **Alkayyal AA**, Tai LH. Remodeling the tumor immune microenvironment with oncolytic viruses expressing miRNAs. **Front Immunol**. 2023 Jan 4
15. Patel M, Adnan M, Aldarhami A, Bazaid AS, Saeedi NH, **Alkayyal AA**, Saleh FM, Awadh IB, Saeed A, Alshaghдали K. Current Insights into Diagnosis, Prevention Strategies, Treatment, Therapeutic Targets, and Challenges of Monkeypox (Mpox) Infections in Human Populations. **Life (Basel)**. 2023 Jan 16
16. Mahmoud AB, Ajina R, Aref S, Darwish M, Alsayb M, Taher M, AlSharif SA, Hashem AM, **Alkayyal AA**. Advances in immunotherapy for glioblastoma multiforme. **Front Immunol**. 2022 Oct 12
17. Alhabbab RY, Algaissi A, Mahmoud AB, **Alkayyal AA**, Al-Amri S, Alfaleh MA, Basabrain M, Alsubki RA, Almarshad IS, Alhudaithi AM, Gafari OAA, Alshamlan YA, Aldossari HM, Alsafi MM, Bukhari A, Bajhmom W, Memish ZA, Alsalem W, Hashem AM. MERS-CoV infection elicits long-lasting specific antibody, T and B cell immune responses in recovered individuals. **Clin Infect Dis**. 2022 Jun.
18. Marie-Eve Wedge, Victoria A Jennings, Mathieu J F Crupi, Joanna Poutou, Taylor Jamieson, Adrian Pelin, Giuseppe Pugliese, Christiano Tanese de Souza, Julia Petryk, Brian J Laight, Meaghan Boileau, Zaid Taha, Nouf Alluqmani, Hayley E McKay, Larissa Pikor, Sarwat Tahsin Khan, Taha Azad, Reza Rezaei, Bradley Austin, Xiaohong He, David Mansfield, Elaine Rose, Emily Brown, Natalie Crawford, **Almohanad Alkayyal**, Abera Surendran, Rangunath Singaravelu, Dominic G Roy, Gemma Migneco, Benjamin McSweeney, Mary Lynn Cottee, Egon J Jacobus, Brian A Keller, Takafumi N Yamaguchi, Paul C Boutros, Michele Geoffrion, Katey J Rayner, Avijit Chatterjee, Rebecca C Auer, Jean-Simon Diallo, Derrick Gibbings, Benjamin R tenOever, Alan Melcher, John C Bell, Carolina S Ilkow. Virally programmed extracellular vesicles sensitize cancer cells to oncolytic virus and small molecule therapy. **Nat Commun**. 2022 Mar.
19. Abdulrahim A Sajini, **Almohanad A Alkayyal**, Fathi A Mubarak. The Recombination Potential between SARS-CoV-2 and MERS-CoV from Cross-species Spillover Infections. **Journal of Epidemiology and Global Health**. 2020 Nov.
20. Anwar M Hashem, Abdullah Algaissi, Sarah A Almahboub, Mohamed A Alfaleh, Turki S Abujamel, Sawsan S Alamri, Khalid A Alluhaybi, Haya I Hobani, Rahaf H AlHarbi, Reem M Alsulaiman, M-Zaki ElAssouli, Sharif Hala, Naif K Alharbi, Rowa Y Alhabbab, Ahdab A AlSaieedi, Wesam H Abdulaal, Abdullah Bukhari, A AL Afrah, Fadwa S Alofi, Asim A Khogeer, Arnab Pain, **Almohanad A Alkayyal**, Naif AM Almontashiri, Ahmad B Mahmoud, Xuguang Li. Early Humoral Response Correlates with Disease Severity and Outcomes in COVID-19 Patients. **Viruses**. 2020 Nov
21. Abdullah Algaissi, Mohamed A Alfaleh, Sharif Hala, Turki S Abujamel, Sawsan S Alamri, Sarah A Almahboub, Khalid A Alluhaybi, Haya I Hobani, Reem M Alsulaiman, Rahaf H AlHarbi, M-Zaki ElAssouli, Rowa Y Alhabbab, Ahdab A AlSaieedi, Wesam H Abdulaal, Afrah A Al-Somali, Fadwa S Alofi, Asim A Khogeer, **Almohanad A Alkayyal**, Ahmad Bakur Mahmoud, Naif AM Almontashiri, Arnab Pain, Anwar M Hashem. SARS-CoV-2 S1 and N-based serological assays reveal rapid seroconversion and induction of specific antibody response in COVID-19 patients. **Scientific Reports**. 2020 Oct 6;10(1):16561

22. Mohamed A Alfaleh, Hashem O Alsaab, Ahmad B Mahmoud, **Almohanad A Alkayyal**, Martina L Jones, Stephen Michael Mahler and Anwar M Hashem. Phage Display Derived Monoclonal Antibodies: From Bench to Bedside. *Frontiers in Immunology*. 2020 Aug 28;11:1986.
23. Tai LH, Ananth AA, Seth R, **Alkayyal A**, Zhang J, de Souza CT, Staibano P, Kennedy MA, Auer RC. Sepsis increases perioperative metastases in a murine model. **BMC Cancer**. 2018 Mar 12;18(1):277.
24. Lee-Hwa Tai, **Almohanad A. Alkayyal**, Amanda L. Leslie, Shalini Sahi, Sean Bennett, Christiano Tanese de Souza, Katherine Baxter, Leonard Angka, Rebecca Xu, Michael A. Kennedy & Rebecca C. Auer. Phosphodiesterase-5 inhibition reduces postoperative metastatic disease by targeting surgery-induced myeloid derived suppressor cell-dependent inhibition of Natural Killer cell cytotoxicity. **Oncolimmunology**. 2018 Feb
25. **Alkayyal AA**, Tai LH, Kennedy MA, de Souza CT, Zhang J, Lefebvre C, Sahi S, Ananth AA, Mahmoud AB, Makrigiannis AP, Cron GO, Macdonald B, Marginean EC, Stojdl DF, Bell JC, Auer RC. NK-Cell Recruitment Is Necessary for Eradication of Peritoneal Carcinomatosis with an IL12-Expressing Maraba Virus Cellular Vaccine. **Cancer Immunol Res**. 2017 Mar;5(3):211-221.
26. **Alkayyal AA**, Mahmoud AB, Auer RC. Interleukin-12-expressing oncolytic virus: A promising strategy for cancer immunotherapy. **Journal of Taibah University Medical Sciences**. 2016;11(3):187-93.
27. Ananth AA, Tai LH, Lansdell C, **Alkayyal AA**, Baxter KE, Angka L, Zhang J, Tanese de Souza C, Stephenson KB, Parato K, Bramson JL, Bell JC, Lichty BD, Auer RC. Surgical Stress Abrogates Pre-Existing Protective T Cell Mediated Anti-Tumor Immunity Leading to Postoperative Cancer Recurrence. **PLoS One**. 2016 May 19;11(5):e0155947.
28. Ilkow CS, Marguerie M, Batenchuk C, Mayer J, Ben Neriah D, Cousineau S, Falls T, Jennings VA, Boileau M, Bellamy D, Bastin D, de Souza CT, **Alkayyal A**, Zhang J, Le Boeuf F, Arulanandam R, Stubbert L, Sampath P, Thorne SH, Paramanthan P, Chatterjee A, Strieter RM, Burdick M, Addison CL, Stojdl DF, Atkins HL, Auer RC, Diallo JS, Lichty BD, Bell JC. Reciprocal cellular cross-talk within the tumor microenvironment promotes oncolytic virus activity. **Nat Med**. 2015 May;21(5):530-6.
29. Zhang J, Tai LH, Ilkow CS, **Alkayyal AA**, Ananth AA, de Souza CT, Wang J, Sahi S, Ly L, Lefebvre C, Falls TJ, Stephenson KB, Mahmoud AB, Makrigiannis AP, Lichty BD, Bell JC, Stojdl DF, Auer RC. Maraba MG1 virus enhances natural killer cell function via conventional dendritic cells to reduce postoperative metastatic disease. **Mol Ther**. 2014 Jul;22(7):1320-1332.
30. Tai LH, Tanese de Souza C, Sahi S, Zhang J, **Alkayyal AA**, Ananth AA, Auer RA. A mouse tumor model of surgical stress to explore the mechanisms of postoperative immunosuppression and evaluate novel perioperative immunotherapies. **J Vis Exp**. 2014 Mar 12;(85).
31. Tai LH, Zhang J, Scott KJ, de Souza CT, **Alkayyal AA**, Ananth AA, Sahi S, Adair RA, Mahmoud AB, Sad S, Bell JC, Makrigiannis AP, Melcher AA, Auer RC. Perioperative influenza vaccination reduces postoperative metastatic disease by reversing surgery-induced dysfunction in natural killer cells. **Clin Cancer Res**. 2013 Sep 15;19(18):5104-15.

32. Tai LH, de Souza CT, Bélanger S, Ly L, **Alkayyal AA**, Zhang J, Rintoul JL, Ananth AA, Lam T, Breitbach CJ, Falls TJ, Kirn DH, Bell JC, Makrigiannis AP, Auer RA. Preventing postoperative metastatic disease by inhibiting surgery-induced dysfunction in natural killer cells. *Cancer Res.* 2013 Jan 1;73(1):97-107.