
Proceedings of the
2023

Hawk Talks



28 April 2023
1pm - 3:00pm

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Proceedings of the 2023 Hawk Talks

Welcome to the 2023 Hawk Talks Conference. This conference features work from students representing a diverse range of programs, including Applied Biological Sciences, American Sign Language and Deaf Studies, Psychology, and Biotechnology. Hawk Talks Conference are opportunities for students to present year-end capstone, honors, and independent research projects. The agenda of talks and poster presentations, abstracts, and short biographies appear for all presenters.

Hawk Talks provides a platform for student researchers to come together and share their latest findings and discoveries. This convention serves as a means to stay up-to-date with the latest research taking place on the University of Kansas' Edwards Campus.

Whether you are attending as a presenter, in support of a presenter, an industry representative, or for any other reason, your presence is greatly appreciated and we hope that you find the work to be interesting and that it inspires further discussion and collaboration among all attendees. We would like to thank all the authors who have contributed to this booklet and commend them for their exceptional work.

The University of Kansas Edwards Campus
Biotechnology Program would like to thank the

**Johnson County Research and
Education Triangle**
for its support



Agenda

1:00pm – 1:25pm

Welcome and Introductions

Regnier 152

Stuart Day, PhD
Dean, School of Professional Studies

Brendan Mattingly, PhD
Director, Applied Biological Sciences

Anna Pope, PhD
Asst. Teaching Professor, Psychology

Petra M. Horn-Marsh, PhD
Assoc. Professor of Practice, ASL&DS

Randall Logan, PhD
Director, Biotech

Jack Treml, PhD
Assi. Director, Biotech

1:30pm – 1:55pm

Session 1

Regents Center 110

Cell culture media optimization for increased production of recombinant proteins in insect cells

[Guelaele Raphael](#)

Regnier 150

The role of catecholamines in tumor progression and use of beta-blockers in cancer treatment

[Ana Hernandez](#)

Regnier 151

Analyzing Jurkat T cell Proliferation in an Adenosine-Rich Microenvironment

[Jing Ying Wong](#)

Regnier 152

LGBTQ+ and Deaf Intersectionality: The Impact of Representation

[Riley Stowers](#)

Regnier 154

*Preventing the Production of Diacetyl in *Saccharomyces cerevisiae* to Prevent Off Flavors in Beer Brewing*

[Camron Haas](#)

2:00pm – 2:25pm

Session 2

Regents Center 110

Development of a Novel Oligonucleotide-Based ELISA

[Kaitlyn Sy](#)

Regnier 150

Assessing the anticancer potency of ginseng on the MCF-7 breast cancer cell line

[Cinthia Moncada](#)

Regnier 151

Assessing the Effects of Bitter Melon on Diabetic-Associated Cardiac Fibrosis

[Juliann Solomon](#)

Regnier 152

Attitudes toward gender-inclusive restrooms after restroom implementation

[Jacob Randall & Juni Reeves](#)

Regnier 154

Chlorogenic Acid: Analysis of Antioxidant and Antimutagenic effect of CGA, a component in Coffee

[Ambreen Niaman](#)

Regents Center Lobby, Poster Session

Meditation as a Tool for Prejudice Reduction

[Ryan Crossland](#)

&

Diversity in American Sign Language Interpreting: Representing The Black Deaf Community

[Katie Scala](#)

2:30pm – 2:55pm

Session 3

Regents Center 110

Development and validation of an assay for IL-37 detection after stimulation from various food extracts

[Alexander Sage](#)

Regnier 150

Natural antioxidant rich foods as a way to protect DNA:

Using the antioxidant properties of Mint to maintain the stability of DNA against UV light in conditions that mimic real-life crime scenes

[Marissa Gaffen](#)

Regnier 151

The potential for AMCase as a potent biofilm disruptor

[Griffin Schenk](#)

Regnier 152

Psychological Capital, Stress, and Academic Burnout in First-Generation College Students

[Kelly Bailey](#)

Following Session 3, we invite you to join us at Coach's Bar and Grill on 135th st. for appetizers and networking

Abstracts

Kelly Bailey, Psychology

Talk #01

Psychological Capital, Stress, and Academic Burnout in First-Generation College Students

Abstract

First-generation college students (FGCS) face a unique set of academic, social, and financial challenges. FGCS are also at a higher risk of dropping out of college compared to continuing-generation college students (CGCS). FGCS research has focused primarily on systemic barriers and sociocultural differences but little on Psychological Capital (PsyCap). This study will investigate the usefulness of PsyCap in predicting Stress and Academic Burnout in FGCS and CGCS and describe relationships among PsyCap, Stress, and Academic Burnout. Data will be collected from the undergraduate student populations at KU's Lawrence and Edwards campuses using three measurements: Compound Psychological Capital Scale (CPC-12), the Perceived Stress Scale (PSS), and the Maslach Burnout Inventory-Student Survey (MBI-SS). Data will be analyzed to determine whether PsyCap as a composite score, or any of its four dimensions (hope, efficacy, resilience, and optimism) as sub-composite scores, is a significant predictor of Stress and/or Academic Burnout in FGCS and CGCS and potential significant differences between FGCS or CGCS. The findings will address a gap in the existing literature on the personal psychological resources of FGCS. It may also offer insights into the potentially unique psychological needs of FGCS and help raise awareness of PsyCap and its role in reducing or preventing academic burnout.

Bio

Kelly Bailey is a senior majoring in Psychology at the KU Edwards campus. Kelly is also a returning KU graduate having previously earned a Master's degree in Integrated Marketing Communications and a Bachelor's degree in Journalism. She plans to attend graduate school and become an applied research psychologist.

Meditation as a Tool for Prejudice Reduction

Abstract

Both loving-kindness and mindfulness meditation have been shown to reduce implicit prejudice. This study compares loving-kindness and mindfulness meditation in their ability to reduce implicit and explicit prejudice towards Blacks, gay men and lesbians. Implications about how meditation helps most with specific types and targets of bias are discussed.

Bio

Ryan Crossland graduated from KU Edwards Campus in December 2022 with a Bachelor of Arts in Psychology. Ryan has been involved with several projects as an undergraduate research assistant and has continued to stay active in these projects post-graduation.

Natural antioxidant rich foods as a way to protect DNA:

Using the antioxidant properties of Mint to maintain the stability of DNA against UV light in conditions that mimic real-life crime scenes

Abstract

Crime is an issue everywhere and there are thousands of cases that remain unsolved. Most of these cold cases are because of the lack of DNA evidence. At a crime scene, DNA is exposed to many outside influences, possibly including direct or indirect sunlight. UV rays from the sun may affect the structure of DNA rendering it unusable as evidence. This occurs because of both direct and indirect damage (in the form of oxidation by radical oxygen species) to DNA. A way to prevent this oxidation is with the timely administration of an antioxidant. Mint is an example of an antioxidant rich foods, suggesting that this property could be used to allay oxidative damage. Using a technique called short tandem repeat polymerase chain reaction, forensic samples can be unambiguously assigned to a single individual. This research examined the suitability of DNA for analysis under conditions that mimic real-life crime scenes with UV exposure. The deterioration of the DNA over a number of hours of exposure to UV was assessed according to polymerase chain reaction. The same experiment was then repeated with the same DNA under the same conditions with the addition of a mint extract. These data suggest that crimes scenes could be treated in a way that DNA evidence would be preserved in over the time between first response and forensic sampling.

Bio

Marissa is an undergraduate in the biotechnology program at the University of Kansas, Edwards Campus. She has a passion for forensics, specifically DNA and evidence left at crime scenes. She interned with a police department starting her research experience and plans to continue that experience while working on her masters in Forensic Science starting in the fall.

The role of catecholamines in tumor progression and use of beta-blockers in cancer treatment

Abstract

Our body goes through a process in which cells grow and multiply as needed. When a cell becomes old or damaged, the cell dies and is replaced by a new cell. When this process is disrupted, abnormal or damaged cells can multiply into tumors. Catecholamines like norepinephrine and epinephrine are known to increase the proliferation of cancer cells. These molecules act as neurotransmitters and hormones in charge of the fight or flight by binding to beta(-adrenergic) receptors in our body's various cell types, including cancer cells. Beta-blockers are medications generally used to reduce blood pressure by binding to beta-receptors. This project aims to explore beta-blockers as a possible treatment for cancer using MCF-7 breast cancer cells as a model. MCF-7 cells will be grown in culture and treated with epinephrine. A cell growth assay will determine what epinephrine concentrations may increase the proliferation of cancer cells. A similar assay will then be used to assess beta-blockers' capacity to interrupt normal or catecholamine-induced cell growth. Overall, the results of this research project will contribute to our understanding of neuroimmune crosstalk in cancer and the potential use of beta-blockers as anticancer therapeutics.

Bio

Ana Hernandez is a graduate in the KU Edwards Biotechnology Program. Ana is passionate about neuroimmunology and aims to pursue a Ph.D. in Neuroscience in the following years to further explore neuroimmune crosstalk's impact on cancer.

Preventing the Production of Diacetyl in *Saccharomyces cerevisiae* to Prevent Off Flavors in Beer Brewing

Abstract

Diacetyl is a common off-flavor molecule that is produced in brewing by yeast cells when they are in a stressful environment. Off-flavor molecules create bad tastes in batches of beer resulting in higher costs and lost time. This work investigated the potential use of an acetolactate inhibitor, chlorsulfuron, to prevent the production of diacetyl in beer. Yeast cell tolerance to chlorsulfuron was assessed prior to brewing to establish a treatment maximum. A tolerated dose was then added during the fermentation step, to assess the production/secretion of diacetyl vs untreated beer, with the goal of limiting off-flavors. The analysis of diacetyl in beer using high-performance liquid chromatography (HPLC) was not completed due to the degradation of the derivatizing agent, 4-nitro-o-phenylenediamine (NPDA). As a result, no conclusions regarding the effectiveness of chlorsulfuron in preventing diacetyl production could be made. To complete the project a viable storage method would need to be implemented after the first use of the derivatizing agent NPDA. This work represents a new approach to tackling the issue of off-flavors in the brewing industry. If successful, treatment could improve the overall quality of beer and reduce costs. Future work is still required to optimize the analysis of diacetyl in brewed beer using HPLC.

Bio

Camron Haas is a senior who is expected to graduate in May 2023 with a Bachelor of Applied Science in Biotechnology. Camron plans on finding a job in the Kansas City biotechnology industry and is excited to continue to grow and learn new things as a scientist.

Attitudes toward gender-inclusive restrooms after restroom implementation

Abstract

The present study investigates attitudes towards inclusive restrooms after implementation on a college campus, with the goal of improving and expanding all-gender restrooms. The campus implemented “All-gender restrooms” in order to reduce restroom-related stress and belonging threats faced by gender-minority students (McGuire et al., 2021; Herman, 2013; Grant et al., 2011). Signs labeled “All-gender” were added to the restroom doors along with notes explaining that the campus supports students using the restroom they identify with. Restroom-related comfort and safety as well as transphobia-related individual difference factors (e.g., gender essentialism (GE), right-wing authoritarianism (RWA), and political affiliation) were measured. One year after all-gender restroom implementation, a total of 182 students responded to the survey, with 155 providing complete data. Most participants (82.3%; mean 76.08) reported being at least moderately comfortable with the restrooms in general, and (85.4%) also reported feeling at least moderately safe with using the all-gender restrooms (mean 78.33). RWA, GE, and conservative political affiliation were significantly, negatively correlated with comfort and perceived benefits of inclusive restrooms (r values between $-.25$ and $-.60$). The initiative undertaken by this campus benefits gender-minority students and provides evidence that the campus supports its gender-minority students and that facilities will be updated based on student feedback. Our data suggests that few students avoid the inclusive restrooms, and the majority are comfortable with and feel safe in inclusive restrooms. The data also provides insight into how to predict who is likely to support/oppose gender-inclusive restrooms.

Bio

Jacob Randall graduated from the University of Kansas with a bachelor’s in Behavioral neuroscience. Jacob plans on continuing his education and is looking to pursue a career in psychology research. He is currently interested in LGBT+ prejudice intervention research.

Juni Reeves is a nonbinary student with a strong passion to help others. They are proud of their history of overcoming the biases and stereotypes they once had, and believe that research and education can continue to make the world a better place for everyone.

Assessing the anticancer potency of ginseng on the MCF-7 breast cancer cell line

Abstract

Breast cancer is a global health concern. In the United States, breast cancer is one of the most common cancers in women. Although treatments exist, many are associated with harmful side effects, resulting in a persisting need for novel, less toxic treatments. One such prospect is ginseng, which literature suggests has anticancer properties and may upregulate the tumor suppressor protein, p53. This protein regulates the expression of other genes, some of which arrest cell cycle. Specifically, p53 induces p21, which is a cyclin/CDK inhibitor without which, cells cannot progress through the cell cycle. My research seeks to assess the anticancer effects of ginseng on the MCF-7 breast cancer cell. Several questions were explored, including what concentration of ginseng can be used on MCF-7 cells without toxicity, whether/how ginseng influences the expression of p53 and p21, and if cell cycle arrest occurs following treatment with ginseng. Cytotoxicity was determined by an MTT assay, while RT-PCR was used to determine mRNA production to examine the regulation of p53 and p21 genes. Lastly, flow cytometry was used to determine if and when cell cycle arrest results from ginseng treatment. A concentration of 1 mg/mL of ginseng extract in medium was found to be non-toxic by MTT and this concentration was used in all subsequent cultures. There was no significant difference in cell cycle arrest when treating the MCF-7 breast cancer cells with ginseng therefore providing no evidence of its efficacy under these conditions.

Bio

Cinthia Moncada is a senior in the biotechnology program at the KU Edwards Campus. After graduation, she expects to stay in the KC area to do innovative research in cancer and later plans to go to graduate school to study oncology and cancer biology.

Chlorogenic Acid: Analysis of Antioxidant and Antimutagenic effect of CGA, a component in Coffee

Abstract

Chlorogenic acid (CGA), is a polyphenolic compound in coffee with the potential to exhibit antioxidant & antimutagenic properties. In this project, the concentration of CGA in commercially available coffee was measured, its potential to exhibit antioxidant properties in vitro, and its ability to block mutation in bacteria. Extract was prepared by heating green coffee beans to 94C⁰ for 5 minutes. The spectral properties of CGA were exploited to quantitate its concentration in the coffee extract via HPLC. Antioxidant activity was characterized by measuring CGA's relative ability to neutralize free radicals using a colorimetric assay vs. a pure Vitamin C (Ascorbic acid) standard. The antimutagenic activity of CGA was assessed via Ames test using *Salmonella typhimurium* (TA 1535 & TA1538), two mutant strains with a missense and frameshift mutations, respectively. Fresh cultures of the mutant strains were grown on minimal agar plates in the absence or presence of S9 mouse liver extract to simulate the metabolic breakdown of suspected mutagens in a mammalian system. The disc diffusion method was performed to assess antimutagenic effect of green coffee by comparing it to the antimutagenic effect of Vitamin C and purified CGA standards. The results suggested that there is a considerable amount of CGA in green coffee beans, and it exhibits antioxidant & antimutagenic properties as depicted by the zone of inhibition observed around CGA in disc diffusion method. The results of this research project will contribute to our understanding of CGA as an antioxidant and its potential use as an antimutagen therapeutic.

Bio

Ambreen Niaman is a senior in Biotechnology BAS program at KU Edwards Campus. She received an associate degree in Biotechnology from the Johnson County community college. She plans to graduate in Spring 2023 and is looking forward to work in the science industry to expand her knowledge and experience.

Cell culture media optimization for increased production of recombinant proteins in insect cells

Abstract

The insect cell/baculovirus expression system (IC-BEVS) has been at the forefront of biotechnological research, and has served as a tool to produce several human therapeutics such as Cervavix[®] (preventative vaccine against the human papilloma Virus), Flublok[®] (preventative vaccine against seasonal influenza virus), Provenge[®] (therapeutic treatment against prostate cancer) and Glybera[®] (gene therapy treatment for lipoprotein lipase deficiency). This expression is an attractive alternative to mammalian cells for biomanufacturing as it offers many advantages such as easy adaptation to serum-free media, high levels of protein expression and post-translational modifications, as well as scalability in manufacturing. Despite these advantages, the use of IC-BEVS to produce recombinant proteins can be costly and time-consuming among others. As the demand for new therapeutic increases, efficient, and robust methods to improve the production and screening processes of recombinant proteins in this expression system are necessary to respond to large-scale manufacturing needs. Research has shown that tailored media supplementation and optimization is an efficient, and useful strategy to increase protein production in vitro and reach high-density cultures. Therefore, this project, aim to evaluate the effects of two macromolecules as potential cell culture additives or boosters to increase the production of therapeutic proteins in the baculovirus/insect cell expression system.

Bio

Guenaele Raphael is majoring in Biotechnology at the University of Kansas. She is particularly interested in research and development of novel drugs and vaccines. After graduation, she hopes to continue working in the biotechnology industry to gain experience in the research of new therapeutics and innovations in biomanufacturing.

Development and validation of an assay for IL-37 detection after stimulation from various food extracts

Abstract

Chronic inflammation is a common problem faced by many in the United States and beyond. Chronic inflammation is also a large problem faced by many pets. Approximately one in every two dogs will face some sort of chronic inflammation in their lifetimes. A recently discovered cytokine, IL-37 has been associated with the regulation of inflammatory activities within cells making it a logical target for many applications aimed at helping slow or stop the progression of chronic inflammatory conditions. This project aimed to develop an assay to detect the expression of IL-37 in DH82 cells, specifically, following exposure to various food items.

Bio

Alexander Sage is a senior of the Biotechnology Program at the KU Edwards campus and plans to graduate in May of 2023 and either start working in the Biotech industry or continue his education and possibly work towards a PhD.

Diversity in American Sign Language Interpreting: Representing The Black Deaf Community

Abstract

American sign language interpreters are individuals who can translate sign language effectively, accurately, and impartially both in receptive and expressive skills using any necessary specialized vocabulary. As given by this definition, ASL interpreters need to be familiar and knowledgeable about different dialects of American Sign Language. Some of these dialects vary by race, ethnicity, age, or location. For my research I will be focusing on Black ASL, a dialect used by the Black Deaf Community, this research is conducted through personal interviews with Black hearing interpreters, Black Deaf interpreters and through a thoughtful review of existing research and literature. Members of the Black Deaf community have been vocal about the misrepresentation or inaccurate interpretations of Black ASL. Within the interpreting field, there is a gap in the representation of Black ASL, it's common for interpreters to omit signs and misrepresent Black Deaf. Due to a mostly White/European demographic, a portion of interpreters frequently lack experience with the Black Deaf community. With a more diverse interpreter field not only will there be a more representation of Black voices but it will also allow for a more culturally competent field by increased experience with the Black community for White/European interpreters.

Bio

Katie Scala is an undergraduate in the American Sign Language and Deaf Studies program at the University of Kansas. After school she plans to work as a Audiologist working with Deaf individuals and to continue pursuing research on how to best serve the Deaf community through diversity and inclusion.

The potential for AMCase as a potent biofilm disruptor

Abstract

After cellulose, chitin is the second most abundant biopolymer on Earth. It is found in the exoskeletons of insects and crustaceans, and even makes up the cell walls of fungi. Given the contact that humans have with chitin daily, it is natural that humans evolved several enzymes to break this polymer down. One of these enzymes, acid mammalian chitinase (AMCase), is of increasing interest in recent years due to its wide array of physiologic functions. As an immunological regulatory protein, AMCase is implicated in the T-helper cell 2 (Th2) immune response, the Interleukin 13 (IL-13) mediated inflammatory cascade, and the allergic response. However, it is possible that AMCase's chitinolytic activity may also play a direct role in the defense against pathogens such as fungi and nematodes. Additionally, research into *Vibrio* species, as well as the composition of mucin proteins, indicates that AMCase may be able to exert a direct, disruptive effect on bacterial and fungal biofilms.

Bio

Griffin Schenk is a senior in the Molecular Biosciences program at KU Edwards. After he graduates, he hopes to pursue a medical education in order to become a physician. His current research interests involve the discovery of novel agents that disrupt biofilms to treat antibiotic resistant infections.

Assessing the Effects of Bitter Melon on Diabetic-Associated Cardiac Fibrosis

Abstract

13% of the US population has diabetes, and of those roughly 56% will develop some form of heart disease, the most common being cardiac fibrosis, a condition characterized by the excess deposition of extracellular matrix in the cardiac muscle and/or an abnormal thickening of the heart valves due to inappropriate proliferation of cardiac fibroblasts. Cardiac fibrosis is caused by excessive amounts of cellular reactive oxygen species resulting in cell death followed by the replacement of cardiac muscle cells with fibroblasts unsuited to proper cardiac function. To protect cells against this, cellular stress results in the activation and translocation of NrF2 protein into the nucleus where it can promote the expression of cytoprotective proteins. Unfortunately, the cell cannot uniformly produce enough cytoprotective proteins to prevent cell death and subsequent fibrosis. Bitter Melon has been reported to possess anti-inflammatory and antioxidant properties to potentially activate this pathway without causing stress to the cell. This work assessed the capacity of bitter melon extract to promote NrF2 activation in stressed cells.

Bio

Juliann is a senior studying Biotechnology at the KU Edwards campus. She plans to continue to pursue her love of science by working for ICON plc in their quality control lab. Her long term goal is to transition to a project management role and gain experience in the business of Biotechnology.

LGBTQ+ and Deaf Intersectionality: The Impact of Representation

Abstract

Representation of intersectional identities is essential. Analyzing the impacts of representational intersectionality within deaf and queer communities highlights this importance. Especially since representation informs structural and political intersectionality. Media representations of intersectional identities has been at the forefront of a lot of current representational efforts, but more efforts must be made in representing the Queer Deaf community.

Bio

Riley Stowers is a Senior studying Political Science and Psychology at KU. She is from Dallas, Texas and works for KU's Student Senate. She also serves as a member of the Senate's Social Justice Council and on the DEI committee of her sorority, Sigma Kappa.

Development of a Novel Oligonucleotide-Based ELISA

Abstract

The emergence and evolution of pathogenic viruses is a growing problem: deadly outbreaks of influenza, HIV, SARS, MERS, Ebola, Zika, SARS-CoV-2, and monkeypox have inflicted devastating economic damage and catastrophic loss of life over the past half-century, underscoring the urgency of developing new methods to mitigate the spread of viral diseases. One such means of mitigation is the availability of diagnostic testing, a deficiency exemplified during the COVID-19 pandemic. SARS-CoV-2 first emerged in December 2019. Just two months later, molecular tests (PCR-based) were deployed. PCR, which relies on genomic sequence data of the target virus, is specific and rapidly deployable. However, PCR falls short of being POC (point-of-care) and affordable, limiting its effectiveness in mitigating the spread of disease. It was only until December 2020—nearly a year after the emergence of SARS-CoV-2—that the first over-the-counter lateral flow antigen tests were deployed. While antigen tests are POC and affordable, they take several months to develop. Time spent developing a diagnostic test or spent waiting for the results of a test costs lives. Considering the continuous emergence of novel viruses and the fast evolution of new strains, there is urgent need for the development of diagnostic tests that are specific and rapidly deployable but also POC and affordable. Although still in the early stages of development, the oligonucleotide-based ELISA has potential to combine the specificity and rapid deployability of nucleotide-based testing with the convenience of lateral flow tests as an advance in humankind's fight against emerging viral diseases.

Bio

Kaitlyn Sy is an undergraduate in the Biotechnology program at the University of Kansas, Edwards Campus. She has a passion for translational medicine and looks forward to gaining more research experience as an intern at the Jared Grantham Kidney Institute before pursuing an MD.

Analyzing Jurkat T cell Proliferation in an Adenosine-Rich Microenvironment

Abstract

Extracellular adenosine is formed from adenosine triphosphate (ATP) hydrolysis to provide energy to cells. Immune cells have been shown to express G-protein-coupled adenosine receptors (AR) for adenosine signaling such that A2A adenosine receptors (A2AR) are broadly expressed on the surface of T cells. Solid tumors may promote adenosine accumulation in the tumor microenvironment, inhibiting the response of immune cells and leading to immune escape. This research aimed to evaluate T cells' proliferation, viability, and survival upon the activation of A2AR on Jurkat T cells. Ideally, the experiment was designed to determine the A2AR expression and perform CFSE staining to assess T cell proliferation with or without the treatment of adenosine agonists and/or antagonists. The experiment should be proceeded with SYTOX stain to evaluate the cell viability and performed PI staining to evaluate the apoptotic activity of the Jurkat T cells after treatment. However, A2AR expression on the Jurkat T cells was not found on the surface, intracellular A2AR was evident. The implication of this expression is not yet known. Other potentially A2AR-expressing cells or cell lines were examined such as PBMC, HEK 293 cell line, and SH-SY5Y. Future studies might explore expression of A2AR through RT-PCR to validate the expression of these receptors on the Jurkat vs. primary T cells. Understanding the responses of T cells in an adenosine-rich tumor microenvironment remains a potential therapeutic target for new drug development.

Bio

Jing Ying Wong is a senior studying Biotechnology at the KU Edwards campus. She is interested in immuno-oncology research, particularly regarding immunosuppressive signaling in the tumor microenvironment. She plans to work in Biotechnology to gain laboratory experience before pursuing a graduate program related to cancer immunology and immunotherapy.

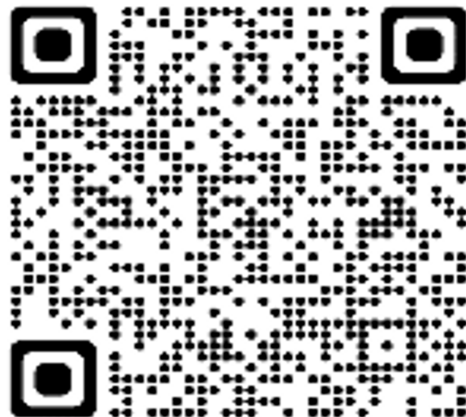
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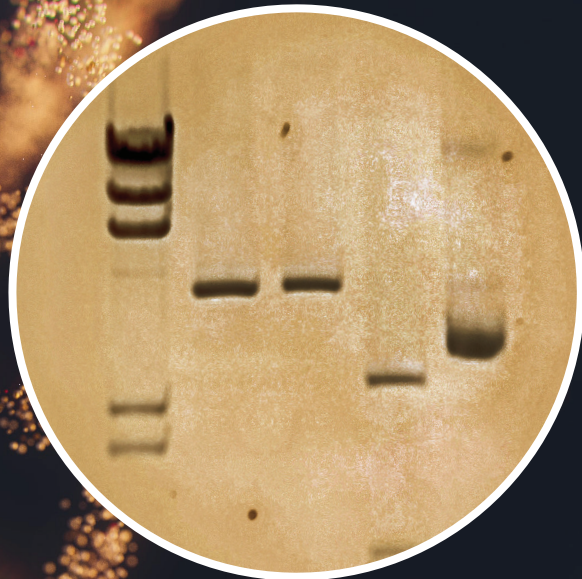
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