



LOYOLA
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2022 Junior Scientist
of the Year

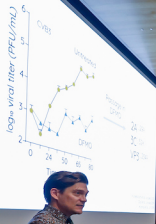
Presented to

BRYAN C. MOUNCE, Ph.D.

Department of
Microbiology and Immunology

In Grateful Recognition of Your Dedicated
Service to Research and Education

By
Loyola University Chicago
School of Medicine





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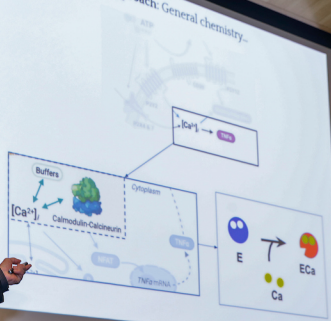
<http://www.xse.org>







Approach: General chemistry-



between worst pattern of invasion and extranodal extension in oral tongue squamous cell carcinomas

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Methods

- Retrospective chart review of all patients who underwent primary surgical resection for OTSCC between 1/1/2015 and 1/1/2022 at Loyola University Medical Center
- Patients who had prior disease or EBV-related squamous cell carcinomas, lack of lymph node involvement, or were previously treated with surgical resection, chemotherapy, or radiation therapy for OTSCC were not included in the study
- High-grade WPOI (WPOI 5) was determined by the presence of small tumor islands located at least 1 mm away from the main tumor bed or the nearest satellite, as described by Bhanji and Gendler. All other patterns of tumor growth were classified as low-grade WPOI (WPOI 1-4)

Results

- 61 patients met inclusion criteria
- 42 patients were classified as WPOI 1-4 and 38 patients were classified as WPOI 5
- WPOI 5 was not significantly associated with the presence of ENE (OR = 1.033, 95% CI 0.314-3.84, p-value=0.961) (Table 1)
- Hazard ratio for loco-regional recurrence with WPOI 1-4 (Figure 1) (95% CI 1.023-26.052, p=0.047) compared to WPOI 5 (Figure 1)

	Odds Ratio	95% CI	P-value
T-stage (≥4 v 1-3)	2.436	0.761-7.916	0.133
Smoking status (any vs never smoker) n=79	1.229	0.432-3.774	0.081
WPOI 5	0.929-3.384	0.860	
ENE	1.030	0.314-3.84	0.962
WPOI	7.579	2.182-27.03	0.002
WPOI	3.696	1.023-26.052	0.047

Table 1. Odds ratio for WPOI 5 with multivariate logistic regression

Results (cont.)



Figure 1. Kaplan-Meier survival plot for loco-regional recurrence-free survival for WPOI 1-4 and WPOI 5

Conclusion

- Our study found that ENE is not associated with higher grade of WPOI
- We additionally found that ENE is associated with perineural invasion (PNI) and lymphovascular invasion (LVI)
- Our study confirmed that higher grades of WPOI are associated with higher rates of loco-regional recurrence
- Limitations for our study include that it is a retrospective cohort study in a single center
- We recommend a well-powered, multi-center study with a large sample to further investigate WPOI and ENE in better understanding prognostic implications in OTSCC

References

1. Bhanji R, Gendler M. Patterns of invasion and extranodal extension in oral tongue squamous cell carcinomas. *Head Neck*. 2015;37(12):1711-1718.
2. Chelode C, Libby C, Maheshwari D, Anantharaman V, Kuper A, Thapa R. Patterns of invasion and extranodal extension in oral tongue squamous cell carcinomas. *Head Neck*. 2015;37(12):1711-1718.
3. Chelode C, Libby C, Maheshwari D, Anantharaman V, Kuper A, Thapa R. Patterns of invasion and extranodal extension in oral tongue squamous cell carcinomas. *Head Neck*. 2015;37(12):1711-1718.
4. Chelode C, Libby C, Maheshwari D, Anantharaman V, Kuper A, Thapa R. Patterns of invasion and extranodal extension in oral tongue squamous cell carcinomas. *Head Neck*. 2015;37(12):1711-1718.
5. Chelode C, Libby C, Maheshwari D, Anantharaman V, Kuper A, Thapa R. Patterns of invasion and extranodal extension in oral tongue squamous cell carcinomas. *Head Neck*. 2015;37(12):1711-1718.



42ND ANNUAL ST. ALBERT'S DAY



The 42nd Annual St. Albert's Day is a special occasion for the Diocese of Salt Lake City. It is a day to celebrate the life and teachings of St. Albert, a great missionary and saint. The day is marked by a series of events, including a Mass, a luncheon, and a concert. The theme for this year is "Faith, Hope, and Charity." We invite all Catholics to join us in celebrating this important day.

ST. ALBERT'S DAY



42ND ANNUAL ST. ALBERT'S DAY



Saint Albertus Magnus was also known as Albert the Great, Sankt Albert der Grosse, Albert of Cologne, or Albert of Louingen. Dominican bishop and philosopher best known as a teacher of St. Thomas Aquinas and as a proponent of Aristotelianism at the University of Paris. He established the study of nature as a legitimate science within the Christian tradition. By papal decree in 1941, he was declared the patron saint of all who cultivate the natural sciences. He was the most prolific writer of his century and was the only scholar of his age to be called "the Great"; this title was used even before his death.

He was among the first and greatest of the natural scientists, gaining a reputation for expertise in biology, chemistry, physics, astronomy, geography, metaphysics, and mathematics. His life and writings emphasized the importance of experimentation and investigation.

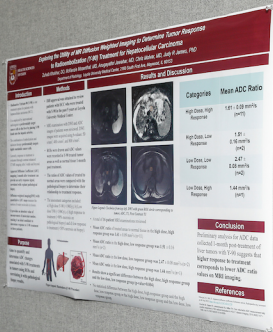
Loyola's annual St. Albert's Day embodies Saint Albert's spirit by celebrating research and the sharing of scientific knowledge with others.









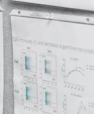
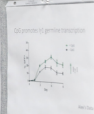




Department of Neurobiology Spikes to the Brain

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Background and objectives



Toll-like receptor 9 signaling
modulates IL-4 induced class
switching in B cells
Loren Chang
Ph.D.
Department of Neurobiology and Neuroscience

Ongoing investigations
on the role of TLR9 in B cell
class switching







42ND ANNUAL ST. ALBERT'S DAY



The 42nd Annual St. Albert's Day is a special occasion for the community. It is a day to celebrate the achievements of the past and to look forward to the future. The event is held at the St. Albert's Day Centre, which is a beautiful building with a long history. The Centre is a place where people can come to learn about the history of the community and to participate in various activities. The Centre is also a place where people can come to enjoy the beautiful views of the city. The Centre is a place where people can come to feel a sense of pride and belonging. The Centre is a place where people can come to make a difference.









Lenovo









RARE CANCERS - HIGHLY TREATABLE





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Introduction

Patients with NFPAs are often diagnosed with a variety of symptoms ranging from seizures to hormonal imbalances. Given the lack of a clear understanding of the molecular mechanisms underlying these symptoms, such as headaches and hormonal imbalances, it is essential to explore the genetic and other underlying factors.

Other patients are identified at Loyola and surgical resection is recommended. These tumors from different parts of the adenoma is collected and used for analysis. Our initial approach, as seen in Figure 1, was to collect tumor from seven surgical margins: central anterior, posterior, superior, inferior, right, and left. Not many NFPA present as such a bulky mass as the example provided, thus we have opted to collect of "core" and "edge" samples. This will also allow us to conduct a more direct analysis of invasiveness and closely both within and between tumors.

For validation, each tissue sample is homogenized via mortar and pestle and RNA is isolated using a QIAGEN RNeasy Mini Kit. The RNA is then sequenced using a HiSeq 2500 at the Loyola Genomics Facility using transcriptomics, returning data that allows for analysis to compare transcriptome data within and between tumors.

Objectives

Our goal is to understand the genetic heterogeneity of NFPA and its impact on clinical outcomes.

Our first objective is to identify the genetic heterogeneity of NFPA. We will use transcriptomics to identify differentially expressed genes and pathways. We will also use bioinformatics to identify potential targets for personalized medicine.

Progress

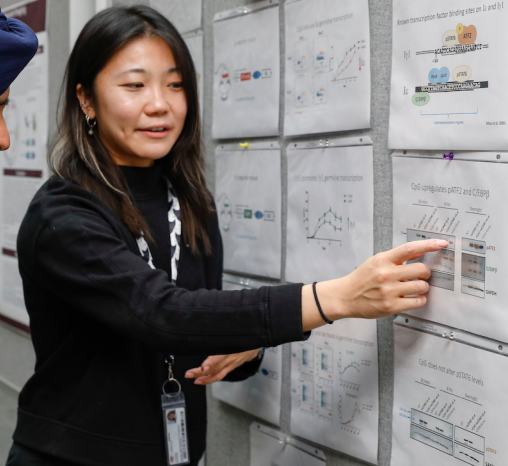
No specific data available by Dec 2022.

Based on past investigations in the literature, there are some target transcripts that we plan to assess. Expression levels of necroptosis markers, specifically RIPK1 and MLKL, have recently been shown to be upregulated in NFPA. It will be useful to know whether expression of these RNA transcripts in NFPA is upregulated in specific anatomical locations within a tumor (e.g. edge) or throughout the entire mass, perhaps explaining differences in tumor size and invasiveness. Expression levels of transcripts related to tumor size and invasiveness, including PDGFRA, VEGF, and epithelial-mesenchymal transition (EMT) markers, will also be assessed. Additionally, we plan to investigate the expression of NFPA invasiveness. We will also support our findings with the expression of transcripts related to fibrosis, where we can confirm the involvement of these transcripts and many other factors. This could provide support toward potential targets in the development of future treatments.

Methods

Our study builds upon the limited library of knowledge we currently have regarding NFPA and has the potential to benefit future patients. We will use transcriptomics to identify differentially expressed genes and pathways. We will also use bioinformatics to identify potential targets for personalized medicine. This study will provide a comprehensive understanding of the molecular mechanisms underlying NFPA and its impact on clinical outcomes. If specific targets can be identified, this could lead to the development of targeted therapies for NFPA, ultimately improving patient outcomes.





Known transcription factor binding sites on I α and I β 1



March 4, 2001

CoG upregulates pATF2 and C/EBP β



CoG does not alter pSTAT6 levels

