

Summer Student Research Program

Project Description

FACULTY SPONSOR'S NAME AND DEGREE: *Alex K. Wong, MD*

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PROJECT TITLE (200 Characters max):

Therapeutic lymphatic regeneration by retinoic acid derivatives

HYPOTHESIS:

Retinoic acids (RA) regulate a range of biological processes. Based on prior work in the lab, we hypothesize that RA can synergize with other pro-lymphatic platforms to achieve robust lymphatic regeneration that can prevent or mitigate lymphatic insufficiency.

PROJECT DESCRIPTION (Include design, methodology, data collection, techniques, data analysis to be employed and evaluation and interpretation methodology)

Animal models (surgical and genetic) as well as primary cell cultures will be used to address the hypothesis and related questions.

SPONSOR'S MOST RECENT PUBLICATIONS RELEVANT TO THIS RESEARCH:

Sung C, Jian W, Park SY, Cooper M, Bouz A, Choi D, Jung E, Kim G, Hong YK, **Wong AK**. Lymphatic endothelial cell RXR α is critical for 9-cis retinoic acid-mediated lymphangiogenesis and prevention of secondary lymphedema. *The FASEB Journal*. 2023; 37:e22674

Deshpande P, Dornbrand-Lo M, Phondge V, Kelly P, **Wong AK**. Tissue engineering approaches for lymphedema: biomaterial innovations and clinical potential. *Front Cell Dev Biol*. 2025;13:1537050.

THIS PROJECT IS: Clinical Laboratory Behavioral Other

THIS PROJECT IS CANCER-RELATED

Please explain Cancer relevance

THIS PROJECT IS HEART, LUNG & BLOOD- RELATED

Please explain Heart, Lung, Blood relevance

THIS PROJECT INVOLVE RADIOISOTOPES?

THIS PROJECT INVOLVES THE USE OF ANIMALS

PENDING

APPROVED

IACUC PROTOCOL #

THIS PROJECT INVOLVES THE USE OF HUMAN SUBJECTS?

PENDING

APPROVED

IRB PROTOCOL # M

THIS PROJECT IS SUITABLE FOR:

UNDERGRADUATE STUDENTS

ENTERING FRESHMAN

SOPHOMORES

ALL STUDENTS

THIS PROJECT IS WORK-STUDY: Yes or No

THIS PROJECT WILL BE POSTED DURING ACADEMIC YEAR

FOR INTERESTED VOLUNTEERS: Yes or No

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WHAT WILL THE STUDENT LEARN FROM THIS EXPERIENCE?

State of the art surgical models and molecular genetics will allow the student to make an impact on translational science that is highly relevant to lymphatic disease