

Role of Epoxy lipids in Protecting Cardiac Mitochondria

PROJECT DESCRIPTION

Ischemic heart disease (IHD) remains a major cause of illness, disability and death worldwide; yet development of successful therapies has remained elusive for over 35 years. Thus, novel therapeutic strategies are still required in order to protect the myocardium from ischemic-reperfusion (IR) injury. In recent years, the cardioprotective properties of polyunsaturated fatty acids (PUFA) have emerged as an important strategy in reducing myocardium injury. However, the precise mechanism(s) by which they protect the myocardium from IR injury remains unclear. Arachidonic acid (AA), a PUFA normally found esterified to cell membranes, can be released in response to several stimuli including ischemia. Free AA can then be metabolized by cytochrome P450 epoxygenases to epoxyeicosatrienoic acids (EETs). EETs, known as eicosanoids, act as potent signaling molecules both in cardiac and extra cardiac tissue coordinating various cellular responses. Mitochondria are strategic organelles in heart cells, which occupy ~30% of the volume and provide 90% of the energy required for cardiac function. Recent reports show that IR injury results in fragmented, swollen and less functional mitochondria, which contributes to the decline in heart function. Therefore, identifying approaches to protect mitochondria from IR injury offers new therapeutic strategies.

FACULTY-DEPARTMENT

Pharmacy and Pharmaceutical Sciences - PharmSci

OPEN TO STUDENTS FROM THE FOLLOWING INSTITUTIONS

Chinese universities participating in the [*Double First-Class Initiative*](#).

DESIRED FIELD OF STUDENT STUDY

Students need to have some background with cell biology, biochemistry, physiology, toxicology or pharmacology

INTERNSHIP LOCATION

Edmonton Campus

NUMBER OF INTERNSHIP POSITIONS

1-2

INTERNSHIP DATES

Start: July 2, 2019

End: October 2, 2019

ARE THE DATES FLEXIBLE?

Yes, I am flexible regarding the internship dates. Selected students can contact me to request a date change.