

Objective

A full-time position in Materials Science Engineering and Physics with emphasis on design, fabrication, characterization, and process development of thin-film materials and devices.

Skills

Interaction Assays, Large-scale E.

Work Experience

Assistant Research Scientist

ABC Corporation - November 2009 – June 2012

- Conducted expression and function studies on Granzyme B derived from murine B lymphocytes.
- Elevated granzyme B expression was found by ELISA and ELISPOT analysis following CpG DNA and CD40L treatment of murine B lymphocytes, in contrast, to control B lymphocytes from Granzyme B knockout mice.
- Granzyme B function did not correlate with the killing of murine tumor cells tested.
- Conducted studies on CpG and telomere homolog (T-oligo) oligonucleotide-induced proliferation, activation, and apoptosis of B of lymphoma cells using surface marker staining and flow cytometry as well as colorimetry spectrophotometric analysis.
- Apoptosis, S phase arrest, and calreticulin expression were found to be induced by T-oligos.
- T-oligo treatment was also combined with ionizing radiation treatment to test for additive or synergistic effects on calreticulin expression and immunogenic apoptosis.
- Conducted research in optics and molecular spectroscopy.

Assistant Research Scientist

Delta Corporation - 2006 – 2009

- Conduct studies on protein pumps involved in the uptake of lipids comprising lung surfactant.
- A specific pump, ATP8b1 (FIC1) was discovered to internalize cardiolipin into lung epithelial cells ameliorating lung injury found to result from cardiolipin (CL) exposure in lungs.
- Elevated CL levels were detected in patients with pneumonia and in mice exposed to bacteria causing inflammation and pneumonia.
- The binding site of CL and ATP8b1 was mapped to a 40 amino acid region using PCR truncation and site-directed mutagenesis.
- Lentivirus overexpression of ATP8b1 in lung epithelial cells resulted in greater uptake of fluorescently labeled CL.
- Adenovirus overexpression of ATP8b1 in mice and instillation of a peptide comprising the CL binding site in ATP8b1 protected mice from lung injury.
- ATP8b1 knockdown in lung epithelial cells resulted in decreased uptake of cardiolipin and ATP8b1 mutant ("knockout") mice had elevated levels of cardiolipin in lung lavage and increased susceptibility to lung injury following infection with pathogenic E.

Education

Ph.D. in Biochemistry and Biophysics - (Oregon State University - Corvallis, OR)