

Chemistry Seminar

**“Role of Human ALDH6A1 in Resistance to
Anticancer Drug Cyclophosphamide”**

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Senior Thesis Presentation

**Friday, November 6
12:00 p.m.
Wick Science Building 122**

Abstract

Over expression of specific aldehyde dehydrogenase (ALDH) enzymes in the presence of certain chemotherapeutic agents such as cyclophosphamide (CP) lead to chemotherapeutic resistance. The enzymes most studied in this regard are ALDH1A1 and ALDH3A1. This investigation will take a closer look at ALDH6A1 who's genetic composition to ALDH1A1 and ALDH3A1. For this purpose we have cloned ALDH6A1 gene from cDNA library into a bacterial expression vector. The process involved excision of the DNA fragment of interest by double-endonuclease restriction digestion using EcoRI and BamHI, gel-purification of the fragment and ligation into a bacterial expression vector pET15b. The pET15b-ALDH6A1 recombinant DNA was transformed into *E. coli* and screened by PCR for positive clones. The positive clones subjected to protein expression tested positive for ALDH activity. Whether ALDH6A1 is responsible for CP resistance in cancer cells is being explored further.