



*Excellence and innovation in  
contemporary bioscience  
education.*

2010  
TEN YEARS  
ON

## FROM AMINO ACIDS TO CATALYTIC PROTEINS

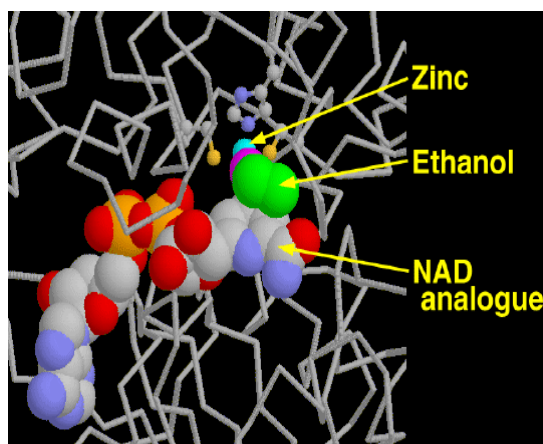
**This program explores the oxidation of ethanol by alcohol dehydrogenase.**

Lectures detail the structure and function of amino acids, explain the condensation reaction in the formation of polypeptides and the hierarchical structure of proteins. Molecular interactions that determine the functional shape of proteins are also explained. Particular emphasis is placed on the role of enzymes, co-enzymes and cofactors in the regulation and control of biochemical pathways.

Guided by their scientist mentor, students utilise research grade equipment including a spectrophotometer to measure concentration as a function of absorbance at a fixed wavelength and interpret a standard curve to determine the concentration of unknown samples.

Students use models to explore the secondary, tertiary and quaternary nature of protein structure and use bioinformatics tools, such as Cn3D to view the 3 dimensional structure of an enzyme-substrate complex.

This program allows students to investigate how inhibitors can block active and binding sites on proteins, a concept utilised in rational drug design.



### Program features:

Introductory lecture.  
Pre-laboratory lecture.  
Laboratory tasks guided by a scientist mentor.  
Use of bioinformatics tools in exploring protein structure and enzyme action.  
Lunch at the University of Melbourne.  
School assessed coursework provision.

**Scheduling: Term 2**

YEAR LEVEL: UNIT 3 VCE CHEMISTRY  
BOOKING CODE: VCE 304  
STANDARD RATE \$25-00/STUDENT

Contact Administrative Assistant for booking enquiries:  
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