

521-304 Cell Signalling and Neurochemistry

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: three x 1 hour lecture and one x 1 hour tutorial per week Total Time Commitment: 48 contact hours with an estimated total time commitment of 120 hours
Prerequisites:	<p>BSc students 521-211 Biochemistry & Molecular Biology Part A 521-212 Biochemistry & Molecular Biology Part B</p> <p>BBiomedSc students 521-213 Integrated Biomedical Science I 536-250 Integrated Biomedical Science II</p> <p>Other combinations of subjects that provide a similar background may be considered by the coordinator.</p>
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	Students cannot enrol in and gain credit for this subject if previously obtained credit for pre-2009 subject (521-304) Hormone and Neurotransmitter Biochemistry
Core Participation Requirements:	It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact upon their active and safe participation in a subject are encouraged to discuss this with the relevant subject coordinator and the Disability Liaison Unit.
Coordinator:	Assoc Prof Heung-Chin Cheng
Subject Overview:	<p>Aberrations in the structure and expression of hormones, growth factors, neurotransmitters and their receptors can give rise to diseases such as cancer and neurodegenerative diseases. To understand the molecular basis of these diseases, it is essential to know how hormones, growth factors and neurotransmitters are synthesised, and how their signals are recognised, amplified and transmitted by intracellular signalling pathways in the target cells.</p> <p>Topics covered include structures of hormone and neurotransmitter receptors, mechanisms of intracellular signal transduction, second messengers and protein phosphorylation-dephosphorylation; regulation of gene expression; molecular basis of drug addiction; different roles of individual neurotransmitters; neurochemistry of sensory transduction, mechanism of neuronal apoptosis and necrosis, molecular basis of neurodegenerative disease, molecular basis of cancer formation and progression and the use and design of protein kinase inhibitors as therapeutics for treatment of cancer and neurodegenerative diseases.</p>
Objectives:	<p>On completion of the subject:</p> <ul style="list-style-type: none"> # students should understand the molecular basis of hormone and neurotransmitter actions # the techniques used to investigate the mechanism of hormone action and neurotransmitter functions # how abnormalities in synthesis and intracellular signalling pathways contribute to drug addiction and disease such as cancer and Parkinson's disease.

Assessment:	3 hour written exam held in examination period (70%), two 1 hour written examinations held during semester (7.5% x 2 = 15%), Oral presentation (7.5%), 1,000 word written assignment (7.5%)
Prescribed Texts:	Basic Neurochemistry 7th edition, Elsevier by Siegel, G.J., Abers, R.W., Brady, S.T. and Price, D.L.
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	On completion of this subject, students should have developed the following generic skills: # the ability to interpret scientific literature and interpret data from electronic databases. # the capacity to integrate knowledge across disciplines. # the ability to comprehend a question, evaluate the relevant information and communicate an answer
Notes:	Students enrolled in the BSc (pre-2008 BSc), BASc or a combined BSc course will receive science credit for the completion of this subject. Students undertaking this subject will be expected to regularly access an Internet-enabled computer
Related Course(s):	Bachelor of Biomedical Science Graduate Diploma in Biotechnology
Related Majors/Minors/Specialisations:	Biochemistry and Molecular Biology Neuroscience Reproduction and Development