

BCMB30004 Cell Signalling and Neurochemistry

Credit Points:	12.50												
Level:	3 (Undergraduate)												
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 2, Parkville - 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 Before 2009: Biochemistry & Molecular Biology Part A (521-211) Biochemistry & Molecular Biology Part B (521-212) 2009 and subsequently:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>BCMB20002 Biochemistry and Molecular Biology</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table> <p>Note that the pre-2009 subject "Biochemistry & Molecular Biology Part A" and the 2009 subject "Biochemistry & Molecular Biology" are not identical despite having the same subject code. Only the subject "Biochemistry & Molecular Biology" offered in 2009 and subsequently acts as a stand-alone prerequisite.</p> <p>BBiomedicine students</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>BIOM20001 Molecular and Cellular Biomedicine</td> <td>Semester 1</td> <td>25</td> </tr> </tbody> </table> <p>BBiomedSc Students: 521-213 Integrated Biomedical Science I AND 536-250 Integrated Biomedical Science II Other combinations that provide similar background will be considered by the coordinator.</p>	Subject	Study Period Commencement:	Credit Points:	BCMB20002 Biochemistry and Molecular Biology	Semester 1	12.50	Subject	Study Period Commencement:	Credit Points:	BIOM20001 Molecular and Cellular Biomedicine	Semester 1	25
Subject	Study Period Commencement:	Credit Points:											
BCMB20002 Biochemistry and Molecular Biology	Semester 1	12.50											
Subject	Study Period Commencement:	Credit Points:											
BIOM20001 Molecular and Cellular Biomedicine	Semester 1	25											
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:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/												
Coordinator:	Assoc Prof Heung-Chin Cheng												
Contact:	heung@unimelb.edu.au (mailto:heung@unimelb.edu.au)												
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-</p>												

	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.
Objectives:	On completion of the subject: <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%); 1,000 word essay assessment due mid-semester (15%).
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: <ul style="list-style-type: none"> # 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 Bachelor of Science Graduate Diploma in Biotechnology
Related Majors/Minors/Specialisations:	Animal Cell Biology Biochemistry and Molecular Biology Biochemistry and Molecular Biology Biochemistry and Molecular Biology Cell Biology Cell and Developmental Biology Neuroscience Neuroscience Neuroscience Reproduction and Development