生命科學系 96 學年度上學期課程大綱

科號		組別		學分	2	人數限制	0
科目中文名稱	細胞骨架與細胞移動特論二			教室			
科目英文名稱	Special topics on cytoskeleton and cell motility II						
任課教師	王歐力 Oliver Wagner						
上課時間	T7T8						
擋修科目				擋修分數			
一、課程說明	Many basic cellular processes, including chemotaxis, phagocytosis and cell-cell adhesion require interactions between the plasma membrane and the underlying cytoskeleton which is a dynamic, three-dimensional and fibrilar structure that spans the cytoplasm. This structure acts as a miniature muscle and supportive skeleton for movement and stability. Some of the nano-polymers comprising the cytoskeleton (actin and microtubules) act as a "track" on which motor proteins can move organelles, vesicles, mRNA and chromosomes. Cellular movement is accomplished by cilia, flagella and actin polymerisation at the leading edge of motile cells. Precise and directed cell migration is critical for proper embryonic development. The failure of cells to migrate (or of migration to inappropriate locations) can result in life threatening consequences. In the adult, cell migration is crucial for immune response and the repair of injured tissues. Malfunctioning cell migration can cause vascular and inflammatory diseases and metastasis. Understanding cellular movements is becoming increasingly important to cellular transplantation and the fabrication of artificial tissues. In this seminar we will primarily discuss current papers on cytoskeleton, trafficking, motor proteins, cell movement, cell shape and the mechanical properties of cells. Profound knowledge of cell biology textbook chapters related to the cytoskeleton, cell division, organelle and cell motility is required.						
二、指定用書	Current cell biology textbook chapters related to the cytoskeleton, cell division, organelle and cell motility.						
三、參考書籍							
四、教學方式	Special seminar for advanced cell biology students. 1/4 lecture and 3/4 paper discussion (presented by students).						
五、教學進度	2 hourly seminar						
六、成績考核	Attendance: 40%. Performance (general performance and discussion of papers): 20%. Presentation (individual journal presentation): 40%						
七、講義位址 http://	Handouts “cytoskeleton-lecture”: http://140.114.96.196:81/index.html						