



STATE-OF-THE-ART IN BONE AND HEART TISSUE ENGINEERING

Dr. Qizhi Chen

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Thursday 5th June 2008, 4:00 p.m. – 5:00 p.m.
Engineering Lecture Theatre E7

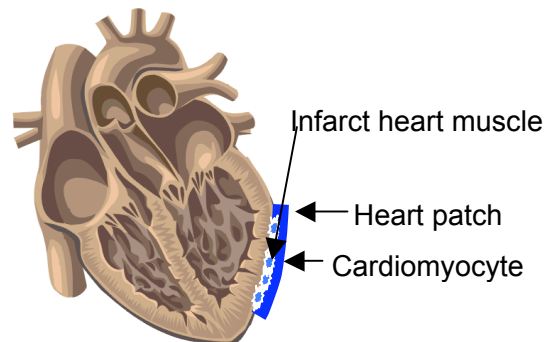
Tissue engineering, a potential future medical care system, aims to maximise the regeneration ability of the host body as an alternative to conventional organ transplantation and tissue reconstruction, through a designed scaffold that is populated with cells and signalling molecules. This talk will start with a general overview of tissue engineering.

Part I Scaffolds for Bone Regeneration at Load-Bearing Sites

In bone tissue engineering, a primary hurdle is to design ideal scaffolds for load-bearing sites, which should be strong and biodegradable. This talk will present a discovery that a mechanically strong ceramic in a Bioglass[®]-derived scaffold can transform into a biodegradable calcium phosphate at body temperature in a biological solution. This transformation smartly combines two irreconcilable properties: mechanical strength and biodegradability, in one scaffold. This discovery promises to go a long way towards clinical application.

Part II Repair of a Broken Heart

Heart disease is the leading cause of death, accounting for approximately 40 % of all human mortality. Driven by this enormous clinical need, cardiac tissue engineering has become a prime focus of research within the field of tissue engineering. The second part of this talk will present a heart patch engineered from a novel elastomer and embryonic stem cells for the treatment of patients with heart attack.



Dr Chen is a newly appointed lecturer. She has been working in the fields of bone and cardiac tissue engineering for the National Heart and Lung Institute at Imperial College London. Previously she also worked for Cambridge University and Hong Kong University. Dr Chen gained her PhD in biomaterials from Imperial College London. She has produced more than 70 peer refereed journal papers, book chapters and patents.

Visitors are most welcome: Please note the parking arrangements. There is a designated Visitors Car Park (N1) clearly ground-marked by white paint and tickets, at a cost of \$3/day, are available from a dispensing machine. ('Blue' permit designated areas are for Monash members only.). It is also possible to park at other designated Visitors Car Parks (E1, S1 and S2) on the Clayton Campus, but tickets are \$1.4/hour.

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