

中山醫學大學 98 學年度碩博士班甄試入學招生考試試題

醫學研究所博士班 乙組

考試科目：生物醫學

時間：80 分鐘

※請注意本試題共(1)張，如發現頁數不足，應當場請求補齊，否則缺頁部份概以零分計算。 第 (1) 頁

本試題共二大題，總分 100 分

一、簡答題，共 40 分

1. Please describe the principle of each biotechnology (25%)

- (1). real-time PCR
- (2). FISH (Fluorescence *in situ* hybridization)
- (3). ELISA
- (4). SCNT (Somatic cell nuclear transfer)
- (5). IPS (Induced pluripotent stem cells)

2. Please describe the contribution of the Nobel Prize in Physiology or Medicine from 2006 to 2008. (15%)

- (1). Harald zur Hausen, Françoise Barré-Sinoussi and Luc Montagnier in 2008.
- (2). Mario R. Capecchi, Sir Martin J. Evans and Oliver Smithies in 2007.
- (3). Andrew Z. Fire and Craig C. Mello in 2006.

二、申論題，共 60 分

1. Please design an application of “shear stress” on culture system for cells in life science. (10%)

2. How to identify a human embryonic stem cell line? (10%)

3. Please describe differences between embryonic and adult stem cells. (10%)

4. Please define and describe application for the following terms.

- (1). Proteomics (10%)
- (2). Gene chip (10%)

5. Please list those major procedures and describe the attention for cell culture *in vitro*. (10%)