

私立臺北醫學院 89 學年度第 2 學期 ~~期中~~ 考試 (命 試) 題紙

系 級	科 目	授 課 教 師	考 試 日 期	學 號	姓 名
原四	細胞生物學	葉健全	89年6月18日第一節		

※①請注意本試題共 3 張。如發現頁數不足及空白頁或缺印，應當場請求補齊，否則缺少部份概以零分計。
 ②每張試題卷務必填寫(學號)、(姓名)。

- Which of the following cell is pluripotent stem cell? (a) stem cells from cord blood (b) neural stem cell (c) cell from inner cell mass of blastocyte (d) fertilized oocyte.
 - Adult stem cells are better than fetal stem cells in one of the following aspects? (a) larger quantity of source (b) more capacity to proliferation (c) less rejection (d) less ethic problem
 - Where you can get stem cells from adult tissue for clinical use? (a) liver (b) bone marrow (c) lymph node (d) brain
 - Which one of the development of technology could improve and promote the usefulness of stem cell in clinics? (a) culture stem cell in vitro (b) genetically engineering for mass production of fetus (c) abolish the cell marker of stem cell in preventing rejection (d) high quality in extraction of stem cell from bone marrow.
 - We made a transgenic mice has massive production of bcl-2 protein in the brain which of the following feature will happen in these mice? (a) their neuron will more sensitive to stimulation which leads to apoptosis (b) they will easy to have brain tumor since cell will be easy to transform. (c) their total neural cell number in the brain will be higher than that of wild-type mice since cell can not die during development (d) nothing will happen in the brain as compare to that of wild-type mice.
 - Which of following disease is due to earlier and abnormal apoptosis? (a) idiopathic parkinson's disease (b) stroke induced dementia (c) brain tumor (d) viral infection
- 7-9 Please list 3 characteristic features of apoptosis? (in English)
- How can we destroy prion protein? (a) boiling (b) burning (c) detergent (d) alcohol
 - What is the wrong statement of the following? (a) PrP^{sc} is normal prion while PrP^c is abnormal prion (b) PrP^{sc} is protease resistant and has rapid turnover (c) PrP^c is α helices and insoluble in detergent (d) PrP^{sc} can transform PrP^c to become β helices.
 - What is the main source of transmissible pathogen in Kuru disease (a) brain (b) blood (c) fat (d) muscle
 - Where is normal prion localized (a) cytoplasm (b) nucleus (c) plasma membrane (d) all of the above.
 - Western blotting is used to detect (a) DNA (b) RNA (c) Proteins.
 - The probe used in Western blotting is a (a) a radioactively labeled DNA fragment. (b) an labeled RNA fragment. (c) antibody (d) all of the above can be used.
 - The procedure of sending a plasmid into the *E. coli* host is called (a) trasfection. (b) transformation. (c) transversion. (d) transduction.
 - Which one of the following methods is *not* used to send a plasmid into the *E. coli* host? (a) calcium chloride treatment and heat shock. (b) electroporation. (c) gene gun (d) all of the above can be used.

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18. The mRNA of the human β - globin gene contains the following sequences:

5'- ACCUGACUCCUGAGGAGAAGUCUGC-----//-----UGCCCUGGCCACACAAGUAUCACUA -3'

Which one of the following primer pairs can be used for RT-PCR amplification of this mRNA?

- (a) ACCTGACTCCTGAGGAGAAG & CTGGCCCACAAGTATCACTA
- (b) ACCTGACTCCTGAGGAGAAG & TAGTGATACTTGTGGGCCAG
- (c) TGGACTGAGGACTCCTCTTC & TAGTGATACTTGTGGGCCAG
- (d) TGGACTGAGGACTCCTCTTC & ATCACTATGAACACCCGGTC
- (e) ACCTGACTCCTGAGGAGAAG & ATCACTATGAACACCCGGTC

19. DNA damages caused by radiation or mutagenic chemicals may result in gene mutation. Among these mutagens, the radiation by ultraviolet light will cause (a) formation of thymine dimers (b) depurination of guanine base (c) chromosome translocation (d) deamination of cytosin in DNA.

20. Which one of the following mutation type can *not* be cause by slipped strand mispairing of short tandem repeats during DNA replication can cause (a) insertion (b) deletion (c) transition (d) all of the above are possible.

21. The enzyme _____ can be used to join DNA fragment together.

22. The enzyme _____ can be used to cut DNA at sites with specific sequences.

23. PCR stands for _____.

24. RFLP stands for _____.

25. Name three of the methods used for deliver DNA into mammalian cells.

(a) _____ (b) _____ (c) _____ (6 pts)

26. Briefly describe the PCR, including the three steps. (6 pts)

27. Briefly describe the missense mutation and nonsense mutation.

28. Briefly describe the *ex vivo* gene therapy.

29. Please describe how the Sanger's (dideoxy) method of DNA sequencing works. (10 pts)

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醫 四	細 胞 生 物 學	葉 健 全	89 年 6 月 18 日 第 一 節		

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除特別註明外，每題 3 分。

1	2	3	4	5	6	7		
8				9			10	11
12	13	14	15	16	17	18	19	20
21		22		23			24	
25a (2 pts)			25b (2 pts)			25c (2 pts)		
26 (6 pts)								
27								
28								

29 (10 pts)								
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