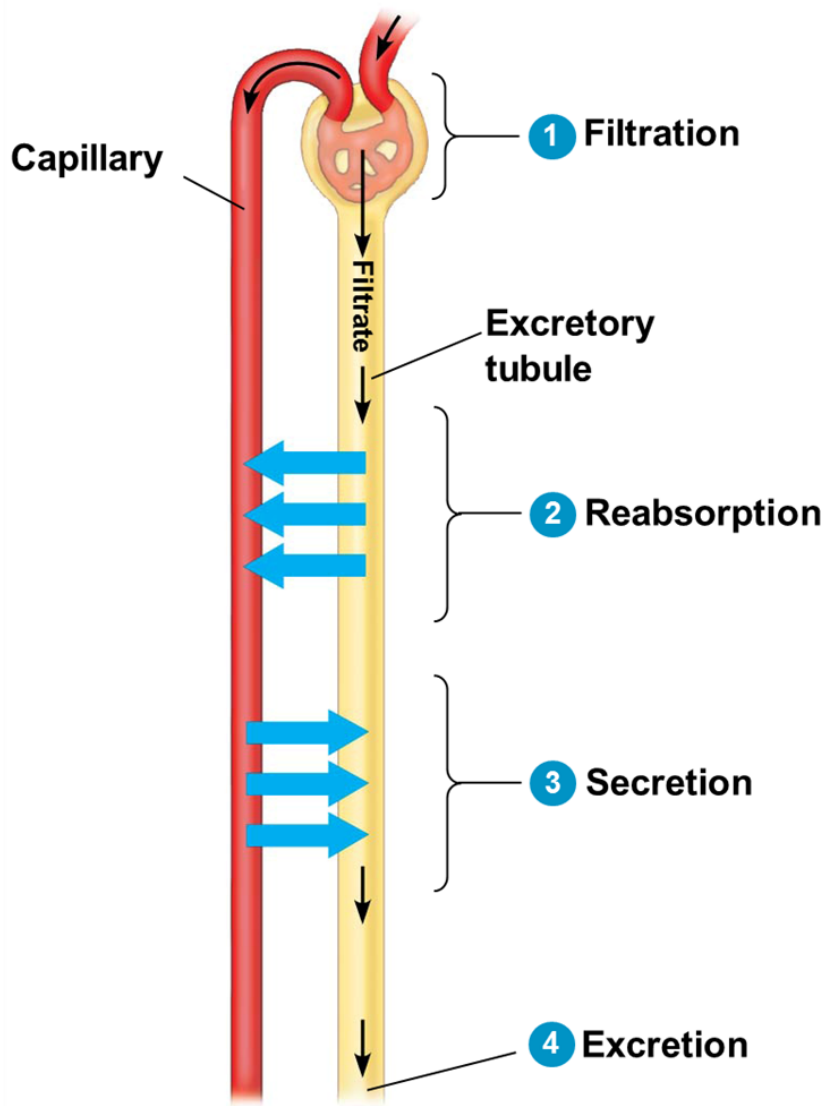


國立中山大學 112 學年度學士後醫學系招生考試試題答案疑義釋疑公告

科目	題號	釋疑答覆	釋疑結果
普通生物及生化概論	9	細胞質內的可溶性蛋白經泛素化後、最終會被送往 proteasome 降解。胞膜或胞器膜上的非可溶性蛋白或稱 membrane associated protein 會被標上單一泛素後經內膜傳輸系統送進 lysosome 或經由自噬作用經由 autophagosome 與 lysosome 融合後被降解。本題中細胞質內的泛素化蛋白乃指前者，故維持原答案。	維持原公布答案 (C)
	18	Succinyl-CoA synthetase (SCS) catalyzes succinyl-CoA to produce succinate and GTP/ATP. In mammals, SCS is a heterodimer and is located within the mitochondria. Two different isoforms exist: one is ATP-specific (ATPSCS; EC 6.2.1.5) and the other is GTP-specific (GTPSCS; EC 6.2.1.4). Thus, A and C are correct.  Reference: Lehninger Principles of Biochemistry 8/e, David L. Nelson; Michael M. Cox; Aaron A.Hoskins, W. H. Freeman, 8version, Nov. 2021, page : 585 Structure of GTP-specific succinyl-CoA synthetase in complex with CoA. Acta Crystallogr F Struct Biol Commun. 2015;71(Pt 8):1067-1071. doi:10.1107/S2053230X15011188	更正原公布答案—本題正確答案為(A)、(C)，選(A)或(C)均給分
	34	請詳見 Biology, A global approach, 12 Ed. Campbell, Urry, Cain, Wasserman, Minorsky, Orr. Chapt 44, pp 1036-1043. Figure 44.8 Key steps of excretory system function:an overview	維持原公布答案 (D)



39 高血鉀引發心律不整(Cardiac arrhythmias)過快或緩慢及肌肉無力。因為題目設定狀況未明，故(A)、(B)、(C)都有可能。因此答案為(A)、(B)、(C)。

更正原公布答案—本題正確答案為(A)、(B)、(C)，選(A)或(B)或(C)均給分

48 黴菌主要以異營方式獲取養分維生，該考生列舉之黴菌維生方式是屬於輻射自營性(radiotrophic)，非能行光合作用(photosynthetic)，兩作用為類似(analogus)作用，但定義不同。

維持原公布答案 (B)

70 In the “Biochemistry” textbook and several reports as below mentioned that S-adenosyl-L-methionine (SAM) is a universal methyl donor for various molecules, such as DNA, protein, metabolite as shown below. Serine provides methylene group for tetrahydrofolate(THF) to generate **N<sup>5</sup>, N<sup>10</sup>-methylene tetrahydrofolate**, which serves as a methyl donor for dUMP, Thus, serine is not a common methyl donor.

維持原公布答案 (A)

Reference:

	<p>Biochemistry, by Roger Miesfeld and Megan McEvoy, 2017 (ISBN: 9780393977264), page 331-332, 886-887. 930 (legend of figure 18.33)</p> <p>Nicotinamide N-Methyltransferase Interacts with Enzymes of the Methionine Cycle and Regulates Methyl Donor Metabolism. <i>Biochemistry</i> 2018, 57, 40, 5775–5779</p> <p>The Role of Methyl Donors of the Methionine Cycle in Gastrointestinal Infection and Inflammation. <i>Healthcare</i> vol. 10,1 61. 29 Dec. 2021,</p>	
77	<p>AZT is the earliest and the most common nucleoside analog for treating patients with HIV. This question does not mention “the earliest and the most common”. Thus, the other nucleoside analogs are correct answers as well.</p>	<p>更正原公布答案 —本題正確答案為(A)、(B)、(C)、(D)、(E)，選(A)或(B)或(C)或(D)或(E)均給分。</p>
78	<p>The most of proteins are synthesized in the rough endoplasmic reticulum and undergo glycosylation. Glycoproteins take place within lumen of endoplasmic reticulum. Some of O-glycosylation occur in the Golgi complex. However, the question asks general “sugar modification of protein starts”. Thus, it should be still in endoplasmic reticulum.</p> <p>Reference: Biochemistry, by Roger Miesfeld and Megan McEvoy, 2017 (ISBN: 9780393977264), page 648</p>	<p>維持原公布答案 (A)</p>
82	<p>Glycogen phosphorylase phosphorylates and removes glucose from non-reducing end of glycogen until it reaches to branch point. Major degradation of glycogen releases Glucose-1-P (~90%), which is phosphorylated “monosaccharide”. Thus, the answer should be (B)</p> <p>Reference: Biochemistry, by Roger Miesfeld and Megan McEvoy, 2017 (ISBN: 9780393977264), page 706-707</p>	<p>維持原公布答案 (B)</p>
85	<p>Pyruvate oxidation to acetyl-CoA is catalyzed by the pyruvate dehydrogenase complex (PDH complex). It is an oxidative decarboxylation, which is virtually irreversible involving three enzymes and five coenzymes. Thiamine pyrophosphate (TPP), one of the cofactor in pyruvate dehydrogenase, participates in decarboxylation of pyruvate, yielding hydroxyethyl-TPP for next step. In clinical study, patients with PDH complex deficiency elevate plasma pyruvate levels. The pyruvate carboxylase reaction requires the vitamin biotin, which is</p>	<p>維持原公布答案 (C)</p>

	<p>the prosthetic group of the enzyme. But lacking biotin or pyruvate carboxylate does not cause high level of pyruvate in their blood.</p> <p>Reference:  Pyruvate dehydrogenase complex deficiency: updating the clinical, metabolic and mutational landscapes in a cohort of Portuguese patients. Orphanet J Rare Dis (2020) 15:298</p>	
89	<p>The question mentions that “Several classes” of hydrolases, does not mean single hydrolase.</p> <p>Lysosomes contain more than 70 hydrolases and are the major location for degradation of both intracellular and extracellular macromolecules, including protein, glycogen, lipid and nucleotides.</p> <p>Reference:  Biochemistry, by Roger Miesfeld and Megan McEvoy, 2017 (ISBN: 9780393977264), page 719, 852-853  Current methods to analyze lysosome morphology, positioning, motility and function. Traffic. Vol 23, Issue 5, May 2022, Pages 238-269</p>	維持原公布答案 (B)