## GMAT考试阅读辅导(36)PDF转换可能丢失图片或格式, 建议阅读原文

https://www.100test.com/kao\_ti2020/214/2021\_2022\_GMAT\_E8\_8 0\_83\_E8\_AF\_95\_c89\_214031.htm Passage 36 Protein synthesis begins when the gene encoding a protein is activated. The gene 's sequence of nucleotides is transcribed into a molecule of messenger RNA (mRNA), which reproduces the information contained in that(5) sequence. Transported outside the nucleus to the cytoplasm, the mRNA is translated into the protein it encodes by an organelle known as a ribosome, which strings together amino acids in the order specified by the sequence of elements in the mRNA molecule. Since the(10) amount of mRNA in a cell determines the amount of the corresponding protein, factors affecting the abundance of mRNA

's play a major part in the normal functioning of a cell by appropriately regulating protein synthesis. For example, an excess of certain proteins can cause cells(15)to proliferate abnormally and become cancerous. a lack of the protein insulin results in diabetes. Biologists once assumed that the variable rates at which cells synthesize different mRNA 's determine the quantities of mRNA

's and their corresponding proteins(20) in a cell. However, recent investigations have shown that the concentrations of most mRNA

's correlate best, not with their synthesis rate, but rather with the equally variable rates at which cells degrade the different mRNA 's in their cytoplasm. If a cell degrades both a rapidly and(25) a slowly synthesized mRNA slowly, both mRNA 's will accumulate to high levels. An important example of this phenomenon is the

development of red blood cells from their unspecialized parent cells in bone marrow. For red blood cells to accu(30) mulate sufficient concentrations of hemoglobin (which transports oxygen) to carry out their main function, the cells ' parent cells must simultaneously produce more of the constituent proteins of hemoglobin and less of most other proteins. To do this, the parent cells halt synthesis(35) of no hemoglobin mRNA' s in the nucleus and rapidly degrade copies of the no hemoglobin mRNA ' sremaining in the cytoplasm. Halting synthesis of mRNA alone would not affect the quantities of proteins synthesized by the mRNA 's still existing in the cytoplasm. Biologists now(40) believe that most cells can regulate protein production most efficiently by varying both mRNA synthesis and degradation, as developing red cells do, rather than by just varying one or the other.1. The passage is primarily concerned with discussing the (A) influence of mRNA concentrations on the development of red blood cells (B) role of the synthesis and degradation of mRNA in cell functioning (C) mechanism by which genes are transcribed into mRNA (D) differences in mRNA concentrations in cell nuclei and in the cytoplasm (E) way in which mRNA synthesis contributes to the onset of diabetes2. The passage suggests that a biologist who held the view described in the first sentence of the second paragraph would most probably also have believed which of the following? (A) The rate of degradation of specific mRNA 's has little effect on protein concentrations. (B) The rate of degradation of specific mRNA 's should be studied intensively. (C) The rates of synthesis and degradation for any given

mRNA are normally equal. (D) Different mRNA 's undergo degradation at widely varying rates. (E) Most mRNA 's degrade very rpaidly.3. Which of the following best describes the relationship between the second and third paragraphs of the passage? (A) The second paragraph presents arguments in support of a new theory and the third paragraph presents arguments against that same theory. (B) The second paragraph describes a traditional view and the third paragraph describes the view that has replaced it on the basis of recent investigations. (C) The third paragraph describes a specific case of a phenomenon that is described generally in the second paragraph. (D) The third paragraph describes an investigation that was undertaken to resolve problems raised by phenomena described in the second paragraph. (E) Both paragraphs describe in detail specific examples of the phenomenon that is introduced in the first paragraph.4. The accumulation of concentrations of hemoglobin in red blood cells is mentioned in the passage as an example of which of the following? (A) The effectiveness of simultaneous variation of the rates of synthesis and degradation of mRNA (B) The role of the ribosome in enabling a parent cell to develop properly into a more specialized form (C) The importance of activating the genes for particular proteins at the correct moment (D) The abnormal proliferation of a protein that threatens to make the cell cancerous (E) The kind of evidence that biologists relied on for support of a view of mRNA synthesis that is now considered obsolete5. To begin to control a disease caused by a protein deficiency, the passage suggests that a promising experimental treatment would be to

administer a drug that would reduce (A) only the degradation rate for the mRNA of the protein involved (B) only the synthesis rate for the mRNA of the protein involved (C) both the synthesis and degradation rates for the mRNA of the protein involved (D) the incidence of errors in the transcription of mRNA 's from genetic nucleotide sequences (E) the rate of activity of ribosomes in the cytoplasm of most cells6. According to the passage, which of the following best describes the current view on the relationship between the synthesis and the degradation of mRNA in regulating protein synthesis? (A) Biologists have recently become convinced that the ribosome controls the rates of synthesis and degradation of mRNA. (B) There is no consensus among biologists as to the significance of mRNA degradation in regulating protein synthesis. (C) The concept of mRNA degradation is so new that most biologists still believe that the vital role in protein regulation belongs to mRNA synthesis. (D) Degradation of mRNA is now considered to be the key process and mRNA synthesis is no longer believed to play a significant role. (E) Degradation of mRNA is now considered to be as important as mRNA synthesis has been, and still is, believed to be.7. According to the passage, which of the following can happen when protein synthesis is not appropriately regulated? (A) Diabetes can result from errors that occur when the ribosomes translate mRNA into protein. (B) Cancer can result from an excess of certain proteins and diabetes can result from an insulin deficiency. (C) A deficiency of red blood cells can occur if bone marrow cells produce too much hemoglobin. (D) Cancer can be caused by excessively rapid degradation of certain amino acids in the cytoplasm of cells. (E) Excessive synthesis of one protein can trigger increased degradation of mRNA 's for other proteins and create severe protein imbalances.8. The passage suggests that a biologist who detected high levels of two proteins in a certain type of cell would be likely to consider which of the following as a possible explanation? (A) The rate of mRNA degradation for one of the proteins increases as this type of cell develops a more specialized function. (B) The two proteins are most likely constituents of a complex substance supporting the cells 'specialized function. (C) The cells are likely to proliferate abnormally and possibly become cancerous due to the levels of these proteins. (D) The mRNA 's for both proteins are being degraded at a low rate in that type of cell. (E) The mRNA 's for the two proteins are being synthesized at identical rates in that type of cell. 100Test 下载频道开通, 各类考试题目直 接下载。详细请访问 www.100test.com