

GRE阅读综合辅导:63题新东方网络课堂总结(十四) PDF转换可能丢失图片或格式，建议阅读原文

https://www.100test.com/kao_ti2020/453/2021_2022_GRE_E9_98_85_E8_AF_BB_E7_c86_453717.htm Passage 10新老观点对比型（专业性文章）咖啡因提神原理新观点（比较特殊，先出现新观点）Caffeine, the stimulant in coffee, has been called “ the most widely used psychoactive substance on Earth. ” Snyder, Daly and Bruns have recently（时间状语，很可能是新老观点对比型）proposed that caffeine affect behavior by countering阻碍 the activity in the human brain of a naturally occurring chemical called adenosine. Adenosine normally depresses阻碍 neuron firing神经兴奋 in many areas of the brain. It apparently does this by inhibiting（重点内容）阻碍 the release of neurotransmitters, chemicals that carry nerve impulses from one neuron to the next. Like many other agents that affect neuron firing, adenosine must first bind to specific receptors on neuronal membranes. There are at least two classes of these receptors, which have been designated A1 and A2*7. Snyder et al (et al: abbr. (Lat) 以及其他的人，等人) propose that caffeine, which is structurally similar to*7B adenosine, is able to bind to both types of receptors, which prevents阻碍 adenosine from attaching there and allows the neurons to fire more readily than they otherwise would.老观点For many years（证明了是新老观点对比型），caffeine ’ s effects have been attributed to its inhibition阻碍 of the production of phosphodiesterase, an enzyme that breaks down分解 the chemical called cyclic AMP. A number of neurotransmitters exert their effects by first increasing cyclic AMP concentrations in

target neurons. Therefore (结论), prolonged periods at the elevated concentrations, as might be brought about by a phosphodiesterase inhibitor 其实就是指咖啡因, could lead to a greater amount of neuron firing and, consequently, to behavioral stimulation. But Snyder (老观点的描述中出现新观点的人名, 用来批驳老观点) et al 理由一 point out that the caffeine concentrations needed to inhibit the production of phosphodiesterase in the brain are much higher (比较句) than those that produce stimulation. 理由二 Moreover, other compounds that block 阻碍 phosphodiesterase ' s activity are not stimulants. 新观点的证据 To buttress 支持 (=support) their case that caffeine acts instead by preventing 抑制 adenosine binding, Snyder et al compared the stimulatory effects of a series of caffeine derivatives with their ability to dislodge 排斥 adenosine from its receptors in the brains of mice. (做实验比较刺激能力和排斥能力) “ In general*8B, ” they reported (引用人物原话, 是重要出题点), “ the ability of the compounds to compete at the receptors correlates with (正相关性) their ability to stimulate locomotion in the mouse. i.e., the higher their capacity to bind at the receptors, the higher their ability to stimulate locomotion. ” Theophylline (与结论紧密相连, 篇幅小于5行, 可以不看), a close structural relative of caffeine and the major stimulant in tea, was one of the most effective compounds in both regards. 新观点的例外情况及解释 There were some apparent exceptions*9A (不希望不出现的内容, 直接跳去看IBMX这种术语) to the general correlation observed between adenosine-receptor binding and stimulation. One

of these was a compound called 3-isobutyl-1-methylxanthine (IBMX), which bound very well but actually depressed抑制 mouse locomotion. Snyder et al suggests that*9A this is not a major stumbling block (stumbling block: n.障碍物, 绊脚石) to their hypothesis. The problem is that the compound has mixed effects (整个问题的解答) in the brain*4A, a not unusual*4 occurrence with psychoactive drugs. Even caffeine, which is generally known only for its stimulatory effects, displays this property, depressing mouse locomotion at very low concentrations and stimulating it at higher ones.

1. The primary purpose of the passage is to主题题 (写法性) (A) discuss a plan for investigation of a phenomenon that is not yet fully understood(B) present two explanations of a phenomenon and reconcile the differences between them(C) summarize two theories and suggest a third theory that overcomes the problems encountered in the first two(D) describe an alternative hypothesis and provide evidence and arguments that support it新老观点对比型 (D) (E) challenge the validity of a theory by exposing the inconsistencies and contradictions in it

2. Which of the following, if true, would most weaken the theory proposed by Snyder et al?逻辑题 (反对题) (太难了, 不做要求) (A) At very low concentrations in the human brain, both caffeine and theophylline tend to have depressive rather than stimulatory effects on human behavior.(B) The ability of caffeine derivatives at very low concentrations to dislodge adenosine from its receptors in mouse brains correlates well with their ability to stimulate mouse locomotion at these low concentrations.(C) The concentration of

cyclic AMP in target neurons in the human brain that leads to increased neuron firing can be produced by several different phosphodiesterase inhibitors in addition to caffeine. (D) The concentration of caffeine required to dislodge adenosine from its receptors in the human brain is much greater than the concentration that produces behavioral stimulation in humans. 用S批判老观点的方法 (D) (E) The concentration of IBMX required to dislodge adenosine from its receptors in mouse brains is much smaller than the concentration that stimulates locomotion in the mouse. 3. According so Snyder et al, caffeine differs from adenosine in that caffeine(A) stimulates behavior in the mouse and in humans, whereas adenosine stimulates behavior in humans only(B) has mixed effects in the brain, whereas adenosine has only a stimulatory effect(C) increases cyclic AMP concentrations in target neurons, whereas adenosine decreases such concentrations(D) permits release of neurotransmitters when it is bound to adenosine receptors, whereas adenosine inhibits such release 负相关关系 (D) (E) inhibits both neuron firing and the production of phosphodiesterase when there is a sufficient concentration in the brain, whereas adenosine inhibits only neuron firing 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