

山东大学医学院

(2006 — 2007 学年第一学期)

2003 级 英语医学专业 药理学期末考试试题 (A 卷)

FINAL EXAMINATION OF PHARMACOLOGY FOR 2003 EM STUDENTS

题号	一	二	三	四	五	六	七	总分	统分人
得分									

得分	评卷人

一. 名词解释: (每题 2 分, 共 10 分)

1. Up-regulation:

扣分	
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2. After effect:

扣分	
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3. pA_2 :

扣分	
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4. Bioavailability:

扣分	
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5. Chemotherapeutic index:

扣分	
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得分	评卷人

二. 多选题: (A 型每题 0.8 分, X 型每题 1 分, 共 60 分)

Type A choice questions (only one answer is correct)

1. Which of the following is true for a drug whose elimination from plasma shows first-order kinetics?
 - A. the half-life of the drug is proportional to the drug concentration in plasma
 - B. the amount eliminated per unit time is constant
 - C. the rate of elimination is proportional to the plasma concentration
 - D. elimination involves a rate-limiting enzyme reaction operating at its maximal velocity
 - E. a plot of drug concentration versus time is a straight line
2. Which of the following drugs has the largest therapeutic index ?
 - A. Drug A $LD_{50}=150\text{mg}$, $ED_{50}=100\text{mg}$
 - B. Drug B $LD_{50}=100\text{mg}$, $ED_{50}=50\text{mg}$
 - C. Drug C $LD_{50}=250\text{mg}$, $ED_{50}=100\text{mg}$
 - D. Drug D $LD_{50}=300\text{mg}$, $ED_{50}=50\text{mg}$
 - E. Drug E $LD_{50}=300\text{mg}$, $ED_{50}=150\text{mg}$
3. A drug is administered in a single dose of 50 mg, after a period of time the plasma drug concentration is found to be 1mg/L. The apparent volume of distribution is
 - A. 10L
 - B. 20L
 - C. 30L
 - D. 40L
 - E. 50L
4. After repeated administration of phenobarbital sodium, the patients complain the drug is less useful, this phenomenon is called
 - A. tolerance
 - B. resistance
 - C. dependence
 - D. side reaction
 - E. residual effect
5. Which of the following is classified as belonging to the G-protein coupling receptors?
 - A. $GABA_A$ receptor
 - B. β -adrenergic receptor

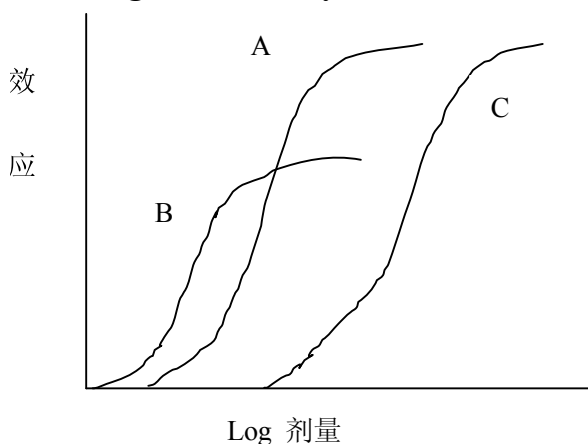
- C. insulin receptor
- D. nicotinic II receptor
- E. hydrocortisone receptor

6. A weak acidic drug with 5.4 of pKa, if the stomach juice pH is 1.4, plasma pH is 7.4, when the distribution balance is reached, the drug concentration ratio between plasma and stomach juice is

- A. 101
- B. 0.001
- C. 1001
- D. 10001
- E. 0.01

7. In this graph, drugs A, B and C are analogs, then

- A. A has a greater potency than B
- B. A has a greater efficacy than C
- C. B has less potency than C
- D. A has a greater potency than C
- E. B has a greater efficacy than C



8. Aspirin is a weak acid with 4.5 of pKa, what percentage of lipid-soluble form will be in the stomach juice with 2.5 of pH?

- A. 0.99%
- B. 9%
- C. 9.09%
- D. 90.9%
- E. 99.0%

9. Which of the following is NOT the indication of propranolol?

- A. atrial fibrillation
- B. A-V block
- C. hypertension

- D. hyperthyroidism
 - E. angina pectoris
10. The effect of pilocarpine on eye is
- A. miosis, increase intraocular pressure, accommodation of paralysis
 - B. miosis, decrease intraocular pressure, accommodation of spasm
 - C. mydriasis, decrease intraocular pressure, accommodation of paralysis
 - D. mydriasis, increase intraocular pressure, accommodation of spasm
 - E. mydriasis, increase intraocular pressure, accommodation of paralysis
11. The intoxication of tubocurarine can be antagonized by
- A. atropine
 - B. adrenaline
 - C. neostigmine
 - D. dopamine
 - E. ephedrine
12. Patients with myasthenia gravis are more effectively treated with
- A. epinephrine
 - B. propranolol
 - C. neostigmine
 - D. atropine
 - E. pilocarpine
13. Which is NOT the indication of phentolamine?
- A. shock
 - B. diagnosis of pheochromocytoma
 - C. male sexual dysfunction
 - D. primary hypertension
 - E. peripheral vascular occlusive disorders
14. The released NE is disposed mainly by
- A. the metabolism in the liver
 - B. enzymatic inactivation
 - C. reuptake by the neuronal terminal
 - D. hydrolysis
 - E. MAO and COMT in the circulation
15. Soon after for a nap, a 4-year-old child is found convulsing. Flush and fever are apparent. The heart rate is 170/min, and the pupils are markedly dilated. Drug intoxication is suspected. The most probable cause is
- A. an organophosphate-containing insecticide
 - B. FeSO₄
 - C. amphetamine-containing diet pills
 - D. pilocarpine-containing eye drops
 - E. atropine-containing medication

16. Which of the following therapeutic projects would be used in the treatment of patient with serious organophosphate intoxication?
- A. atropine + norepinephrine
 - B. atropine+ neostigmine
 - C. atropine + pralidoxime iodide
 - D. atropine + epinephrine
 - E. atropine + morphine
17. Which of the following statements about benzodiazepines is not true?
- A. have tolerance and dependence
 - B. can be used to treat anxiety
 - C. can enhance receptor affinity for GABA
 - D. Hepatic enzyme induction
 - E. Flumazenil(氟马西尼) can be used for diagnosis and therapy of benzodiazepines overdose
18. Which of the following drugs is the best to relieve anxiety symptoms?
- A. diazepam
 - B. Phenobarbital
 - C. Triazolam
 - D. Imipramine
 - E. Chlorpromazine
19. The drug which is the first choice in treatment of absence seizures is
- A. magnesium sulfate
 - B. phenobarbital
 - C. ethosuximide
 - D. diazepam
 - E. sodium valproate
20. The main reason for the combination use of levodopa with carbidopa is
- A. to increase the absorption of L-dopa
 - B. to inhibit levodopa decarboxylation in the periphery
 - C. to inhibit MAO
 - D. to increase L-dopa converting to dopamine directly
 - E. to inhibit COMT
21. The mechanism of antiparkinson's disease of selegiline is
- A. activation of DA receptor in striatum
 - B. blocking the choline receptor in CNS
 - C. promotion of release of DA in nerve ending
 - D. promotion of synthesis of DA in nerve ending
 - E. inhibit MAO-B in CNS
22. Which of the following drugs can be used for artificial hibernation
- A. morphine, chlorpromazine, diphenhydramine

- B. pethidine, chlorpromazine, promethazine
 - C. morphine , pethidine, chlorpromazine
 - D. fentanyl, morphine , pethidine
 - E. promethazine, morphine, diphenhydramine
23. Morphine can not be used in the treatment of
- A. serious simple diarrhea
 - B. pain caused by cancer
 - C. cardiac infarction with normal blood pressure
 - D. cardiac asthma
 - E. asthmatic bronchitis
24. Which of the following drugs is ineffective in the treatment of rheumatic arthritis?
- A. acetaminophen
 - B. phenylbutazone
 - C. sodium salicylate
 - D. aspirin
 - E. indomethacin
25. Which of the following statements concerning congestive heart failure is correct?
- A. Digitoxin is more widely used than digoxin because it has a shorter half-life
 - B. Serum levels of digoxin can be decreased by quinidine
 - C. Loop diuretics are used in patients with renal insufficiency
 - D. Digoxin is eliminated primarily in the bile
 - E. Congenital heart defects are the most common cause of congestive heart failure
26. Which of the following is the most serious main side effect of statins and this effect would be increased if a statin is taken with gemfibrozil, ciclosporin or nicotinic acid?
- A. Gastrointestinal problems
 - B. Rhabdomyolysis
 - C. Elevated blood pressure
 - D. Migraine headaches
 - E. palpitations
27. All of the following measures can be used in the treatment of digoxin-induced arrhythmia EXCEPT
- A. stopping digoxin administration
 - B. diuretic agents such as furosemide are used to promote the excretion of digoxin
 - C. phenytoin administration
 - D. atropine administration

- E. lidocaine administration
28. The mechanism of anti-hypertensive effect of losartan is
- A. decrement of renin activity
 - B. inhibition of angiotensin converting enzyme
 - C. blockade of the angiotensin II type 1 receptors
 - D. increment of kinin synthesis
 - E. causing vasodilation directly
29. A 70-year-old female is treated with sublingual nitroglycerin for her occasional bouts of angina. Which of the following is involved in the action of nitroglycerin?
- A. α -adrenergic activity
 - B. Phosphodiesterase activity
 - C. Phosphorylation of light chains of myosin
 - D. Norepinephrine release
 - E. cGMP increased
30. The therapeutic action of β -adrenergic receptor blockers such as propranolol in angina pectoris is believed to be primarily the result of
- A. Reduced production of catecholamines
 - B. Dilation of the coronary vasculature
 - C. Decreased requirement for myocardial oxygen
 - D. Increased peripheral resistance
 - E. Increased sensitivity to catecholamines
31. Which of the following drugs has relatively few electrophysiologic effects on atrial myocytes but suppresses the Purkinje fibers and ventricular cells?
- A. Verapamil
 - B. Lidocaine
 - C. Quinidine
 - D. Propranolol
 - E. Procainamide
32. Which of the following actions can produce by chlorothiazide?
- A. hyperkalemia
 - B. hyperuricemia
 - C. increase in blood pressure
 - D. hypercalciuria
 - E. hypoglycemia in diabetic patients
33. A patient with edema using streptomycin, which diuretic is unwisely used?
- A. osmotic diuretics
 - B. thiazide diuretics
 - C. loop diuretics
 - D. aldosterone antagonists
 - E. triamterone and amilorde

34. Which of the following mechanisms best accounts for the anti-thyroid effect of thioureas?
- A. Inhibiting peroxidase and decreasing the thyroid hormones synthesis
 - B. Inhibiting the thyroid release
 - C. Inhibiting the absorption of iodine
 - D. Interfering with the utilization of iodine
 - E. Decomposing the thyroid hormone
35. Which of the following is the most important approach in preventing peptic ulcers from recurrence?
- A. coating the ulcer crater
 - B. eradicating infection with H. Pylori
 - C. inhibiting secretion of gastric acid at the proton pump
 - D. blocking receptor activation of gastric acid secretion
 - E. neutralizing secreted gastric acid
36. The severe adverse reaction of biguanides is
- A. hypoglycemia
 - B. lactic acidosis
 - C. vomiting
 - D. blood dyscrasias
 - E. hepatic impairment
37. Which drug is effective in urokinase -induced hemorrhage?
- A. tranexamic acid
 - B. vitamin K
 - C. vitamin B₁₂
 - D. protamine sulfate
 - E. epinepherin
38. Which of the following therapies is the best for a patient with status asthmaticus
- A. aminophylline p.o.
 - B. hydrocortisone i.v.
 - C. inhaling sodium cromoglycate
 - D. inhaling beclomethasone
 - E. salbutamol p.o.
39. The inactivation of which of the following clotting factors can NOT be accelerated by heparin?
- A. II a
 - B. VIIa
 - C. X a
 - D. XIa
 - E. XIIa

40. Which of the following is NOT the effect of H₁ receptors activation?
- A. increasing capillary permeability
 - B. stimulating sensory nerve ending
 - C. dilating vascular smooth muscle
 - D. increasing secretion of gastric acid
 - E. producing smooth muscle contraction
41. Which of the following drug has no effect on pseudomonas aeruginosa (绿铜绿假单孢菌) infections?
- A. carbencillin
 - B. imipenem
 - C. netilmicin
 - D. ciprofloxacin
 - E. amoxicillin
42. Which of following drugs prevents synthesis of cell-wall, but does not belong to β -lactam antibiotics.
- A. penicillin G
 - B. Vancomycin
 - C. aztreonam
 - D. cefaclor
 - E. amoxicillin
43. Which of the following drug may cause aplastic anemia?
- A. penicillin G
 - B. streptomycin
 - C. tetracycline
 - D. chloramphenicol
 - E. doxycycline
44. Sulfonamides act synergistically with trimethoprim because
- A. sulfonamides inhibit the metabolism of trimethoprim
 - B. trimethoprim inhibits the metabolism of sulfonamides
 - C. both drugs act at the same step in inhibiting folic acid synthesis
 - D. both drugs act at the different steps in inhibiting folic acid synthesis
 - E. toxicity of the two drugs can be decreased
45. All of the following antibiotics act by interfering with protein synthesis except
- A. tetracycline
 - B. streptomycin
 - C. chloramphenicol
 - D. ampicillin
 - E. clindamycin
46. A young woman suffering from urinary tract infection caused by a G⁻ rod can be given

- A. penicillin G
- B. vancomycin
- C. gentamicin
- D. clindamycin
- E. erythromycin

47. The drug which is used to treat pseudomembranous colitis caused by long-term use of tetracyclines may be

- A. gentamicin
- B. kanamycin
- C. penicillin
- D. metronidazole
- E. carbenicillin

48. Which of the following drugs is the drug of choice for the treatment of osteomyelitis caused by *Staphylococcus aureus* ?

- A. penicillin
- B. polymyxin B
- C. chloramphenicol
- D. clindamycin
- E. ciprofloxacin

49. Penicillin G is effective in treating the following infections except

- A. streptococcal infection
- B. pneumococcal infection
- C. leptospira infection
- D. staphylococcal infection
- E. legionella infection

50. The drug of choice for the prevention of epidemic cerebrospinal meningitis is

- A. penicillin G
- B. SD
- C. SMZ
- D. ciprofloxacin
- E. chloramphenicol

Type X choice questions (one or more answers are correct)

1. Which of the following would be expected in a severe case of organophosphate poisoning?

- A. salivation
- B. tremor of skeletal muscle
- C. dry skin
- D. bronchoconstriction
- E. coma

2. When you treat a patient with atropine, which of the following side effects would be endure?
- A. dry mouth
 - B. tachycardia
 - C. mydriasis
 - D. urinary retention
 - E. fever
3. Which of the following receptors locate(s) on the vessels?
- A. α -receptor
 - B. N_2 -receptor
 - C. M-receptor
 - D. β_1 -receptor
 - E. β_2 -receptor
4. Which of the following does NOT belong to muscarinic actions caused by M-receptor activation?
- A. heart depression
 - B. vessel dilation
 - C. smooth muscle contraction
 - D. glands secretion increased
 - E. mydriasis
5. Which of the following statements about phenytoin sodium are true
- A. can be used to treat patients with arrhythmia
 - B. can be used for patients with generalized tonic-clonic seizures
 - C. has a sedative effect
 - D. can block voltage-dependent Na^+ -channel
 - E. can cause gingival hyperplasia
6. In all of the following side effects of chlorpromazine, which are the extrapyramidal reactions
- A. akathisia
 - B. parkinsonism
 - C. postural hypotension
 - D. allergic reactions
 - E. acute dystonia
7. Which of the following actions of morphine are true?
- A. antitussive effect
 - B. dilating pupil
 - C. boosting intrabiliary pressure
 - D. inhibition of respiration
 - E. boosting of tension of the bladder sphincte
8. Which of the followings are true about adverse reactions of aspirin?

- A. gastrointestinal reaction
 - B. blood coagulation disorder
 - C. Reye's syndrome
 - D. salicylism reaction
 - E. allergic reaction
9. Which drugs of the followings belong to the first-line drugs therapy for hypertension in current?
- A. A vasodilator such as hydralazine
 - B. A cardiac Glycoside such as digoxin
 - C. A β -receptor blocker such as propranolol
 - D. A thiazide diuretic such as hydrochlorothiazide
 - E. An ACE inhibitor such as captopril
10. Regarding antihypertensive drug, which of the following statements are (is) WRONG answer:
- A. hydrochlorothiazide can increase activity of rennin
 - B. propranolol can decrease secretion of rennin
 - C. Sodium nitroprusside lowers BP rapidly by releasing NO.
 - D. clonidine blockades α_2 -receptor and imidazoline receptor in CNS
 - E. Diuretics decreased BP mainly by increasing water and sodium excretion from the kidneys.
11. Which of the following hypertensive patients is suited for primary therapy with captopril?
- A. patients with CHF
 - B. patients with myocardial infarction
 - C. patients with bilateral renal artery stenosis
 - D. patients with diabetes
 - E. pregnant patients
12. Which of the following statements about amiodarone are (is) true?
- A. it increases APD and ERP
 - B. it blocks α and β -adrenoreceptors
 - C. it can cause pulmonary fibrosis
 - D. it can cause hyper- or hypothyroidism
 - E. it has reverse use-dependence
13. Which of the following drugs can cause leucopenia?
- A. heparin
 - B. ticlopidine
 - C. warfarin
 - D. aspirin
 - E. thioureas
14. Which of the following factors can decrease the absorption of iron?
- A. high calcium

- B. vitamin C
 - C. tetracyclines
 - D. tannic acid
 - E. hydrochloric acid
15. Which of the following are adverse reactions of glucocorticoids?
- A. inducing epileptic attack
 - B. aggravation of infections
 - C. ulcerogenic effects
 - D. hypoglycemia
 - E. hypertension
16. Which of the following drugs can stimulate T_4 to transform to T_3 ?
- A. methylthiouracil
 - B. propylthiouracil
 - C. methimazole
 - D. carbimazole.
 - E. propranolol
17. Metronidazole can be used in the treatment of
- A. amebic dysentery
 - B. anaerobic bacterial infection
 - C. trichomoniasis(滴虫病)
 - D. actinomycosis(放线菌病)
 - E. pseudomonas aeruginosa
18. The drugs that can induce disulfiram-like reaction(双硫仑反应) are
- A. metronidazole
 - B. sulfadiazine
 - C. Cefalexin
 - D. Furazolidone (痢特灵)
 - E. azithromycin
19. Antibiotics that act by interfering with protein synthesis include
- A. tetracycline
 - B. streptomycin
 - C. chloramphenicol
 - D. penicillin G
 - E. azithromycin
20. Which of the following drug have effects on tuberculosis?
- A. streptomycin
 - B. kanamycin
 - C. ofloxacin
 - D. sparfloxacin
 - E. azithromycin

得分	统分人

三. 简答题: (共 30 分)

1. Please describe the mechanisms of epinephrine on the treatment of allergic shock. (8 分)

扣分	评卷人

2. Why are the ACE inhibitors used as regular therapeutic drugs in the treatment of CHF at present? (8 分)

扣分	评卷人

3. Please describe the clinical uses of glucocorticoids. (8 分)

扣分	评卷人

4. What are the shared properties of aminoglycosides? (6)

扣分	评卷人

FINAL EXAM OF PHARMACOLOGY FOR 2003 EM STUDENTS (A)

2007-1-6

标准答案:

一. 名词解释: (每题 2 分, 共 10 分)

1. 受体上调 (up-regulation): 由于受体激动药水平降低或长期应用拮抗药造成的受体数目增加或组织或细胞对激动药的敏感性和反应性增加的现象。
2. 后遗效应(after effect): 指停药后血药浓度降至阈浓度以下时残存的药理效应(2分)。
3. 拮抗参数(PA₂): 使激动剂的浓度乘以 2 才能达到原先作用强度的竞争性拮抗剂浓度的负对数。
4. 生物利用度(bioavailability): 经任何给药途径给予一定剂量的药物后到达全身血循环内药物的百分率称生物利用度。
5. 化疗指数(chemotherapeutic index): 是评价化疗药物安全性及应用价值的指标, 常用化疗药物的 LD₅₀/ED₅₀ 或 LD₅/ED₉₅ 的比值(2分)。

二. 多选题: (A 型每题 0.8 分, X 型每题 1 分, 共 60 分)

A 型

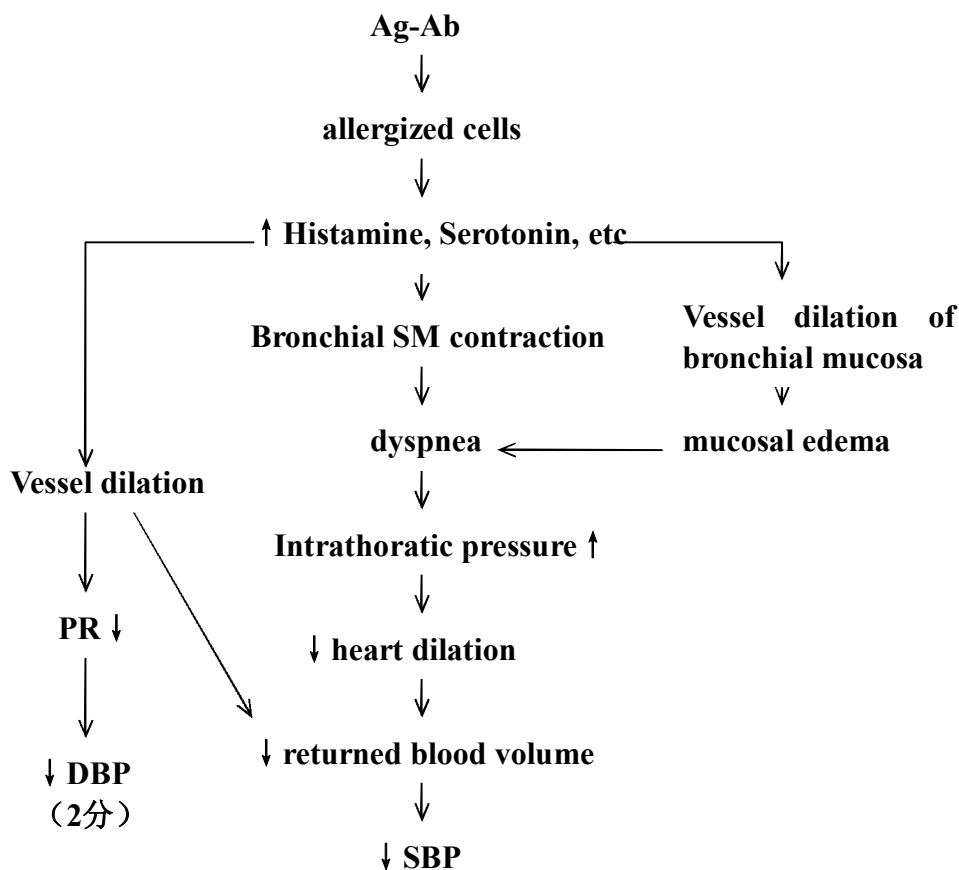
- 1.B 2.D 3.E 4.A 5.B 6.A 7.D 8.E 9.B 10.B 11.C 12.C 13.D 14.C 15.E 16.C 17.D 18.A
19.C 20.B 21.E 22.B 23.E 24.A 25.C 26.B 27.B 28.C 29.E 30.C 31.B 32.B 33.C 34.A
35.B 36.B 37.A 38.B 39.B 40.D 41.E 42.B 43.D 44.D 45.D 46.C 47.D
48.D 49.E 50.B

X 型

51. ABDE 52. ABCDE 53. ACE 54. ABCD 55. ABDE 56. ABE 57. ACDE
58. ABCDE 59. CDE 60. DE 61. ABD 62. ABCD 63. BE 64. ACD 65. ABCE
66. BE 67. ABC 68. ACD 69. ABCE 70. ABCD

三. 简答题: (共 30 分)

1. (8分)



2. (8分)

CHF时 RAS 被激活，促进心衰的恶化与发展，ACE 抑制药通过抑制 ACE，抑制激活的 RAS，既能缓解或消除 CHF 临床症状，提高运动耐力和生活质量，又能防止和逆转心肌肥厚，降低病死率，是目前 CHF 治疗的一线用药。(3分)

抗 CHF 作用机制: ACE 抑制药通过抑制 ACE 活性，降低体循环及局部组织中 Ang II 和醛固酮含量(1分)以及抑制缓激肽降解(1分)，促进扩血管物质 NO 和 PGI₂ 生成而发挥作用。①扩张血管，改善血流动力学;(1分)②防止和逆转心肌与血管重构，改善心功能。(1分)③抑制 CHF 时被激活的交感神经活性。(1分)

临床应用: 常与利尿药、地高辛合用。

3. (8分)

1. replacement therapy: acute or chronic hypofunction of adrenal cortex (1分)

2. Severe infection and inflammation

(1) Severe infection(1分)

(2) Prevent some inflammatory sequela (1分)

3. Allergic and autoimmune diseases (2分)

4. Shock: especially infectious-toxic shock (1分)

5. Other uses

(1)Blood disorders(1分)

(2)Use of local therapy (topical uses) (1分) some skin diseases and eye disease

4. (6分)

(1) 水溶液性质稳定，在碱性环境中作用强；(1分)

(2) 对 G-杆菌抗菌作用强大，对厌氧菌无效；(1分)

(3) 抗菌机制—抑制细菌蛋白质合成的多个环节 (1分)

(4) 主要用于敏感的需氧 G-杆菌感染 (1分)

(5) 不良反应：耳、肾毒性、神经肌肉阻断作用及过敏反应 (2分)。