Principles of Pharmacology - The Pathophysiologic Basis of Drug Therapy 5th edition Golan Test Bank

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Quiz, Chapter 1, Drug–Receptor Interactions

1. A 45-year-old female shop assistant is treated for heartburn with omeprazole. She notes that the effect of a dose of omeprazole lasts much longer than that of a dose of the antacid drug calcium carbonate she had previously taken. The active metabolite of omeprazole binds covalently and irreversibly to a molecular structure involved in releasing protons into the gastric juice. Drugs that modify their target structures through this mechanism are called:
    A) suicide substrates.
    B) signal transduction molecules.
    C) adhesion receptors.
    D) competitive antagonists.
    E) enantiomers.

2. A 36-year-old male has been diagnosed with chronic myeloid leukemia. His oncologist discusses treatment options with him. The patient is glad to hear that novel anticancer drugs used to treat chronic myeloid leukemia have a much better risk–benefit ratio than older ones, due to their improved selectivity. A major determinant for the selectivity of a given drug is:
    A) its target receptor ligand affinity.
    B) its target receptor cell-type distribution.
    C) its ionic interactions.
    D) its hydrogen bonding.
    E) its intrinsic activity.

3. A 56-year-old man with chest pain is diagnosed with stable angina and treated with several drugs including nitroglycerin. Every day he has to discontinue nitroglycerin for some hours to re-establish reactivity of his body to the drug. The clinical observation of a rapidly decreasing response to nitroglycerin after administration of just a few doses is called:
    A) idiosyncrasy.
    B) tachyphylaxis.
    C) biased agonism.
    D) refractoriness.
    E) receptor downregulation.

4. Prolonged receptor stimulation during chronic drug therapy may induce cells to endocytose and sequester drug receptors in endocytic vesicles. This molecular mechanism is called:
    A) tachyphylaxis.
    B) inactivation.
    C) desensitization.
    D) downregulation.
    E) refractoriness.

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Answer Key

1. A
2. B
3. B
4. D

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