

Test Bank for Clinical Immunology and Serology 5th Miller

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Chapter 02 Innate Immunity

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- ____ 1. Which of the following is an internal defense mechanism?
 - a. Keratin coating epithelial cells
 - b. Lactic acid in sweat
 - c. Surfactant in mucosal secretions
 - d. Phagocytosis

- ____ 2. A pathogen killed by psoriasin was defeated by which of the following defense mechanisms?
 - a. External, adaptive immunity
 - b. External, innate immunity
 - c. Internal, adaptive immunity
 - d. Internal, innate immunity

- ____ 3. A pathogen entering the respiratory tract would encounter which external defense mechanism?
 - a. Phagocytosis
 - b. Movement of cilia
 - c. Hydrochloric acid
 - d. Lactic acid

- ____ 4. A pathogen entering the urinary tract would encounter which external defense mechanism?
 - a. Acidity
 - b. Surfactants
 - c. Keratin
 - d. Lysozyme

- ____ 5. Normal flora is best described by which of the following statements?
 - a. One type of bacteria that is normally present and never causes disease
 - b. A mix of bacteria that are normally present that never cause disease
 - c. A mix of bacteria that are normally present and do not typically cause disease
 - d. One type of bacteria that is normally present and that we constantly are defending against

- ____ 6. Inflammatory bowel syndrome may be better understood by looking at which of the following?
 - a. Interaction between the innate immune system and the gut microbiome
 - b. Interaction between the innate immune system and *Candida albicans*
 - c. Interaction between the adaptive immune system and the gut microbiome
 - d. Interaction between the adaptive immune system and *Candida albicans*

- ____ 7. Which of the following is a pattern-associated molecular pattern (PAMP) found on gram-negative bacteria?
 - a. Peptidoglycan
 - b. Zymosan
 - c. Flagellin
 - d. Lipoproteins

- ____ 8. Which of the following cells are capable of recognizing PAMPs?
 - a. B lymphocytes
 - b. Basophils
 - c. Macrophages
 - d. T lymphocytes

- ____ 9. Which of the following describes the role of PRRs in adaptive immunity?
 - a. Promotes release of cytokines and chemokines
 - b. Activation of phagocytic cells
 - c. Activation of inflammation
 - d. Recruitment of additional phagocytic cells

- ___ 10. Which best describes the process of a neutrophil recognizing zymosan and phagocytosing a pathogen?
- a. An adaptive immune response to a gram-negative bacterial invasion
 - b. An innate immune response to a yeast invasion
 - c. An innate immune response to a gram-negative bacterial invasion
 - d. An adaptive immune response to a gram-positive bacterial invasion
- ___ 11. The highest concentration of Toll-like receptors (TLRs) would be found in which of the following cells?
- a. Dendritic cells
 - b. Neutrophils
 - c. Eosinophils
 - d. Lymphocytes
- ___ 12. Which of the following TLRs is found on cell surfaces?
- a. TLR 3
 - b. TLR 7
 - c. TLR 9
 - d. TLR 2
- ___ 13. Acute phase reactants act by doing which of the following?
- a. Promoting destruction by releasing proteolytic enzymes
 - b. Promoting adherence to pathogens
 - c. Limiting phagocytosis
 - d. Limiting adherence to pathogens
- ___ 14. Acute phase reactants contribute to innate immunity most through their involvement in which of the following processes?
- a. Destruction of blood clots
 - b. Surfactant secretion
 - c. Phagocytosis
 - d. Decreasing Ph
- ___ 15. Which of the following acute phase reactants are capable of opsonization?
- a. C-reactive protein
 - b. Serum amyloid A (SAA)
 - c. Alpha 1- Antitrypsin (AAT)
 - d. Fibrinogen
- ___ 16. Which of the following acute phase reactants can lyse cells?
- a. C-reactive protein
 - b. Complement
 - c. Haptoglobin
 - d. SAA
- ___ 17. Which acute phase reactant rises most significantly in bacterial infections?
- a. Ceruloplasmin
 - b. Haptoglobin
 - c. Fibrinogen
 - d. SAA
- ___ 18. Measurement of C-reactive protein is an established tool in the analysis of which disease?
- a. Cardiovascular disease
 - b. Irritable bowel syndrome
 - c. Crohn's disease
 - d. Coronary artery disease
- ___ 19. Which of the following occurs during an inflammatory response?
- a. Constriction of the blood vessels
 - b. Decreased permeability of fluid through the vessels
 - c. Diapedesis
 - d. Migration of macrophages within 30 mins.

- ____ 20. Which inflammatory response is responsible for the symptom of swelling?
- a. Phagocytosis
 - b. Increased permeability of fluid through vessels
 - c. Diapedesis
 - d. Increased blood flow to area
- ____ 21. Which of the following phagocytic steps should occur after the others?
- a. Formation of phagosome
 - b. Release of lysosomal contents
 - c. Outflowing of cytoplasm
 - d. Fusion of lysosomal granules
- ____ 22. Which of the following is responsible for digestion of microorganisms through phagocytosis?
- a. Phagosome
 - b. Exocytosis
 - c. Lactic acid
 - d. Hydrolytic enzymes
- ____ 23. What is the importance of lysosomal granules in phagocytic cells?
- a. Proteolytic enzymes are needed for digestion of pathogens
 - b. Myeloperoxidase is needed for the invagination of the pathogen
 - c. Proteolytic enzymes are needed to migrate the phagosome to the center of the cell
 - d. Proteolytic enzymes are needed to fuse granules to the phagosome
- ____ 24. How do phagocytic cells get pathogens inside their cytoplasm?
- a. Adhesion to selectins
 - b. Chemotaxis
 - c. Invagination with pseudopods from the cytoplasm
 - d. Release of proteolytic enzymes from granules
- ____ 25. Phagocytosis is a critical part of which of the following?
- a. Innate, specific, internal defense mechanism
 - b. Innate, non-specific, internal defense mechanism
 - c. Innate, non-specific, external defense mechanism
 - d. Adaptive, specific, internal defense mechanism
- ____ 26. How does phagocytosis contribute to adaptive immunity?
- a. Neutrophils present peptides from pathogens to T cells
 - b. Neutrophils present peptides from pathogens to B cells
 - c. Macrophages present peptides from pathogens to B cells
 - d. Macrophages present peptides from pathogens to T cells
- ____ 27. Which of the following would best describe the role of NK cells in innate immunity?
- a. A school hall monitor
 - b. A school custodian
 - c. A school morning greeter
 - d. A school principal
- ____ 28. NK cells routinely check cells for _____ to determine if they are healthy?
- a. Class II major histocompatibility complex
 - b. Perforins
 - c. Class I major histocompatibility complex
 - d. Granzymes

- ____ 29. Which of the following is a substance released by NK cells and causes channeling into a target cell's membrane?
- a. Granzymes
 - b. Lactic acid
 - c. Myeloperoxidase
 - d. Perforins
- ____ 30. If an NK cell ultimately deems a host cell as unhealthy or infected, the result is:
- a. phagocytosis
 - b. cell lysis
 - c. inflammatory response
 - d. T cell activation
- ____ 31. Innate lymphoid cells (ILCs) are found primarily where in our bodies?
- a. Peripheral blood
 - b. Bone marrow
 - c. Mucosal sites
 - d. Tissues
- ____ 32. The primary function of innate lymphoid cells (ILCs) is:
- a. release of cytokines
 - b. phagocytosis
 - c. cell lysis
 - d. inflammation
- ____ 33. Inhibitory receptors, such as killer cell immunoglobulin-like receptors (KIRs), on the surface of NK cells bind to which of the following molecules?
- a. Toll-like receptors
 - b. MHC Class I
 - c. Defensins
 - d. Immunoglobulins
- ____ 34. All of the following are true of dendritic cells except:
- a. they ingest both whole microorganisms and injured/dead host cells by phagocytosis
 - b. they are capable of presenting pathogen-derived peptide to T cells after phagocytosis
 - c. they express TLRs
 - d. all of the responses are true of dendritic cells
- ____ 35. Which of the following is true of C-type lectin receptors (CLRs)?
- a. CLRs are involved in recognition of intracellular pathogens
 - b. CLRs are expressed predominantly by NK cells
 - c. When bound to mannan or β -glucans on fungal cell walls, CLRs result in the production of cytokines and chemokines
 - d. CLRs are found on both the plasma membrane and in the cytoplasm of innate immune cells

Chapter 02 Innate Immunity
Answer Section

MULTIPLE CHOICE

1. ANS: D	PTS: 1	OBJ: 1	MSC: Taxonomy 1
2. ANS: B	PTS: 1	OBJ: 1	MSC: Taxonomy 3
3. ANS: B	PTS: 1	OBJ: 2	MSC: Taxonomy 2
4. ANS: A	PTS: 1	OBJ: 2	MSC: Taxonomy 2
5. ANS: C	PTS: 1	OBJ: 3	MSC: Taxonomy 2
6. ANS: A	PTS: 1	OBJ: 3	MSC: Taxonomy 3
7. ANS: D	PTS: 1	OBJ: 4	MSC: Taxonomy 1
8. ANS: C	PTS: 1	OBJ: 3	MSC: Taxonomy 1
9. ANS: A	PTS: 1	OBJ: 5	MSC: Taxonomy 1
10. ANS: B	PTS: 1	OBJ: 4 & 5	MSC: Taxonomy 3
11. ANS: A	PTS: 1	OBJ: 6	MSC: Taxonomy 1
12. ANS: D	PTS: 1	OBJ: 6	MSC: Taxonomy 1
13. ANS: B	PTS: 1	OBJ: 7	MSC: Taxonomy 1
14. ANS: C	PTS: 1	OBJ: 7	MSC: Taxonomy 2
15. ANS: A	PTS: 1	OBJ: 7 & 8	MSC: Taxonomy 2
16. ANS: B	PTS: 1	OBJ: 8	MSC: Taxonomy 2
17. ANS: D	PTS: 1	OBJ: 9	MSC: Taxonomy 2
18. ANS: A	PTS: 1	OBJ: 9	MSC: Taxonomy 1
19. ANS: C	PTS: 1	OBJ: 10	MSC: Taxonomy 2
20. ANS: B	PTS: 1	OBJ: 10	MSC: Taxonomy 3
21. ANS: B	PTS: 1	OBJ: 11	MSC: Taxonomy 2
22. ANS: D	PTS: 1	OBJ: 11	MSC: Taxonomy 1
23. ANS: A	PTS: 1	OBJ: 12	MSC: Taxonomy 2
24. ANS: C	PTS: 1	OBJ: 12	MSC: Taxonomy 2
25. ANS: B	PTS: 1	OBJ: 13	MSC: Taxonomy 2
26. ANS: D	PTS: 1	OBJ: 13	MSC: Taxonomy 2
27. ANS: A	PTS: 1	OBJ: 14	MSC: Taxonomy 3
28. ANS: C	PTS: 1	OBJ: 14	MSC: Taxonomy 2
29. ANS: D	PTS: 1	OBJ: 15	MSC: Taxonomy 1
30. ANS: B	PTS: 1	OBJ: 15	MSC: Taxonomy 1
31. ANS: C	PTS: 1	OBJ: 16	MSC: Taxonomy 1
32. ANS: A	PTS: 1	OBJ: 16	MSC: Taxonomy 1
33. ANS: B	PTS: 1	OBJ: 14	MSC: Taxonomy 1
34. ANS: D	PTS: 1	OBJ: 6 & 13	MSC: Taxonomy 2
35. ANS: C	PTS: 1	OBJ: 5	MSC: Taxonomy 2