Immunology Test bank

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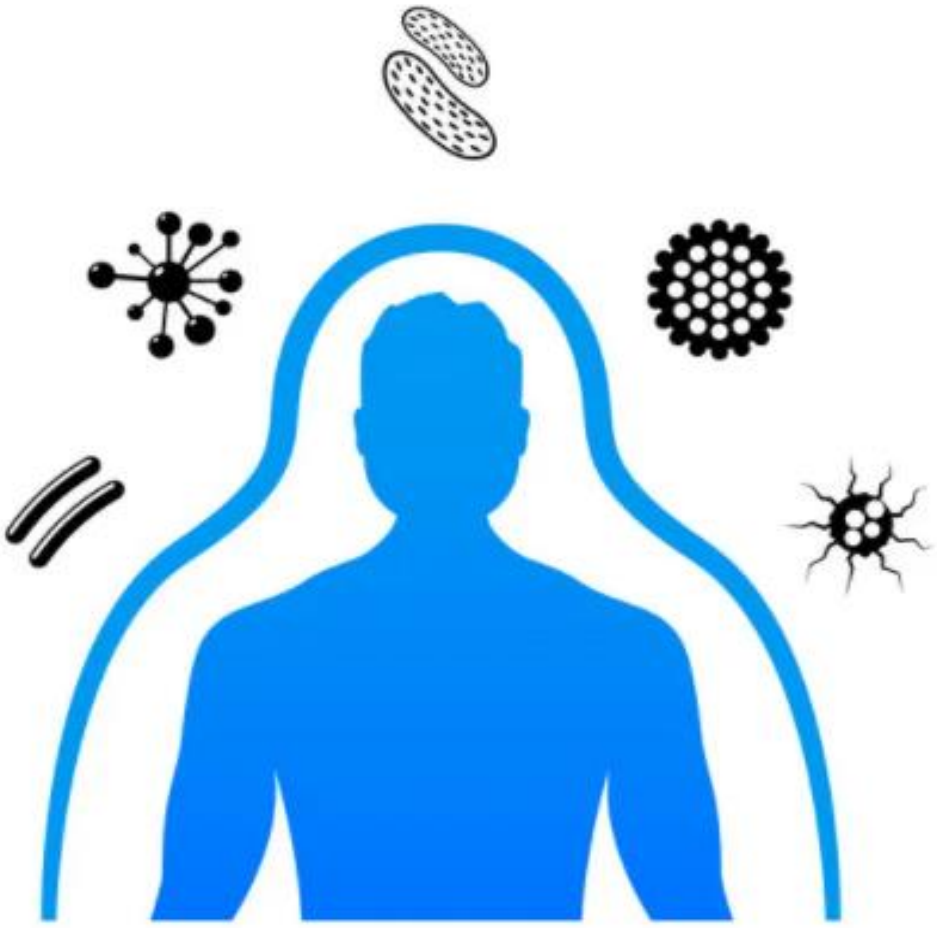


Immunology

1) Which of the following Antibodies occurs as a pentameric structure?

A) IgM

B) IgG

C) IgA

D) IgE

E) A+C

Answer: A

2) Wrong about neutrophils

A) it is stimulated by G-CSF

B) It has short half-life with only few hours

C) it is part of the mononuclear phagocytic system

D) mainly found in the blood and migrate to tissues following inflammation

Answer: C

3) Which of the following best activate NAÏVE CD8 lymphocytes

A) Conventional Dendritic cells

B) Plasmacytoid Dendritic cells

C) Macrophages

D) B cells

Answer: A

4)Which of the following regulators inhibits C3convertase

A) CD14 B) CD59 C) FH D) CD46

D

5) When we inhibit alternative pathway convertase, all of the following would decrease EXCEPT

A) C3a B) C5a C) C4b2b D) C3b E) MAC or TCC

C

6) which of the following is wrong about innate immune system

A) it is existed in Plants

B) Very ancient form of immunity

C) it takes days to weeks to perform its function

C

7) which of the following cells will be the last cell to perform its function in skin pathogen invasion

A) Natural killer cells

B) Naïve CD8 Lymphocytes

C) Interepithelial Lymphocytes

D) Macrophages

B

8) You inject a mouse with an antigen that it has never been exposed to it before, the injection takes place at week 0, at week 4 you inject the same mouse with the same foreign antigen, choose the right statement

A) IgM starts to appear after 2-3 days of week 0

B) IgM starts to appear after 2-3 weeks after week 4

C) IgM starts to appear after 2 weeks of week 0

D) IgG appears before IgM

E) IgM aren't produced in week 4

C

9) which of the following initiates the classical pathway of the complement system

A) C1q B) C1r C) C1s D) C3b

A

10) which of the following Receptors is not found as membrane bound or endothelial bound receptors in MACROPHAGES

A) Toll like receptors 3

B) Toll like receptors 4

C) Nod like receptors

D) Scavenger receptors

E) IL-1 receptor

C

11) Endothelial cells expresses glycoprotein that binds with low affinity to WBCs and helps in their recruitment from blood to tissues

A) E-Selectin

B) Intracellular adhesion molecule

C) Sialyl lewis X

D) leukocyte function associated antigen 1

A

12) large family of molecules that stimulate leukocyte movement and regulate the migration of leukocytes from the blood to tissues and all of which are 8- to 12-kD polypeptides, this definition best describes ?

A) Antimicrobial peptide

B) chemokines

C) Complement system

B

13) CD4 in secondary lymphoid organs that has not been exposed to its antigen yet is called?

A) Naïve immature T helper cell

B) Naïve mature T cytotoxic

C) Naïve Mature T helper cell

D) Activated Mature T helper cell

C

14) Wrong about antigen interaction with lymphocytes

A) Soluble antigens recognized by B lymphocytes

B) Soluble antigens on macrophages are recognized by T cells

C) soluble antigens are recognized by T cells

C

15) Which of the following is a soluble pattern recognition receptor

A) Carbohydrate receptors

B) RIG like receptors

C) Pentraxin 3

D) Toll like receptor 3

C

16) which of the following increases by 1000 fold in inflammation

A) Albumin

B) C-reactive protein

C) Inflammasome

B

17) which of the following is a Pathogen associated molecular pattern

A) Double stranded Viral RNA

B) LPS

C) HMGb1 (High mobility group box 1)

D) peptidoglycan

C

18) the best sequence of inflammasome formation is

A) Inflammasome formation --- cleavage of caspas 1 --- cleavage of Pro IL-1

B) Inflammasome formation--- cleavage of Pro IL-1 --- cleavage of caspas 1

C) Cleavage of Pro IL-1 --- inflammasome formation--- cleavage of caspas1

D) Inflammasome formation --- cleavage of caspas 8 --- cleavage of Pro IL-1

A

19) Which of the following provides antiviral state to cells

A) IL-1

B) IL-6

C) IL-8

D) TNF

E) INF-G

E

20) Which of the following is least important in fighting extracellular pathogen

A) Macrophage

B) B cells

C) CD8 lymphocyte

D) CD4 lymphocyte

C

21)A medical student wants to perform a study on MACROPHAGES type 1, the best way to get these cells is by

A) collect monocytes from the blood and stimulate them with IL-10

B) collect lymphocyte from the blood and stimulate them with IFN and LPS

C) collect monocytes from the blood and stimulate them with IFN and LPS

D) collect hematopoietic cells from bone marrow

C

22) which of the following is a transcriptional factor for immune genes

A) Myd88

B) CD14

C) NF-KB

C

23) which of the following is not in LPS recognition pathway

A) CD14

B) MD2

C) MYD88

D) CD46

D

24)Which of the following clear Viral infected cells that doesn't exhibit MHC-1

A) CD8 lymphocyte

B) Dendritic cells

C) Natural killer cells

D) B cells

C

25) long statements about Kidney transplant that has been rejected within minutes, choose the wrong statement

A) this type of rejection is called hyperacute rejection

B) Complement system activation plays a role here

C) antigen presenting cells of the donor plays a role here

D) preformed Antibodies in the recipient attack transplanted organ

E) blood clots are formed which prevents blood supply from reaching the graft

C

26) Which of the following molecules works as chemokines

A) IL-1

B) IL-6

C) IL-8

D) CD46

E) TNF

C

27) All of the following are actions of IL-1 EXCEPT

A) proliferation of WBCs

B) Migration of WBCs to the site of inflammation

C) inflammatory response

D) Decrease the permeability of the blood vessels

D

28) which of the following is wrong regarding Antimicrobial Peptides

A) work by making pores in the cells

B) Anionic peptides

C) Defincin is an example of antimicrobial peptides

D) part of innate immunity

B

29) True about GVHD

A) common after kidney transplant

B) Doesn't occur in identical twins

C) Female Donor to male increases the risk because MHC1 are on Y chromosome

D) CD4 and CD8 of the recipient initiate the disease

C

30) neonate immunity is mainly by

A) IgM

B) IgA

C) IgG

D) IgE

E) IgD

C

31) which of the following cells is not from a myeloid origin

A) Macrophage

B) Neutrophil

C) Natural killer

D) Mast cell

C

32) Histamine releasing cell and contributes in hypersensitivity

A) Neutrophil

B) CD8 lymphocyte

C) Mast cell

D) Dendritic cell

C

33)Which of the following doesn't Express MHC II

A) Neutrophil

B) Endothelial stimulated cell

C) Macrophage

D) B cell

E) Dendritic cell

A

34) How many binding sites there are between Complementarity Determining Regions (CDR) and an antigen on one Fab

A) 0

B) 2

C) 3

D) 6

D

35) Which of the following isn't true about Allograft rejection

A) Lymphocytes of the recipient recognize DAMPs of the allograft as non self

B) Activate T cells of the recipient by donor non self-antigens

C) Activate T cells of the recipient by donor's self- antigens presented of recipient APC

A

36) Which of the following has hyper gene recombination for its receptors during maturation

A) Alpha-beta T lymphocytes

B) Gamma-delta T lymphocytes

C) Macrophages

D) Mast cells

A

37) Which of the following best describes complementary system

A) A group of carbohydrates and lipids that circulate in the blood and a part of immune system

B) A group of proteins for opsonization and inflammatory response

C) Always activated proteins circulate in blood

B

38) Wrong about MHC molecules

A) Variable between population

B) Variability causes different susceptibility to diseases between population

C) cross presentation presents antigen on MHC II

C

39) Wrong about Macrophages

A) Phagocytosis of opsonized and non-opsonized Antigens

B) They can activate Naïve T cells

C) Could be found as resident cells in different tissues

B

40). B and T cells are produced by stem cells that are in:

a. Bone marrow

b. The liver

c. The circulatory system

d. The spleen

e. The lymph nodes

A

41)Which of the following BEST describes cytokines?

A. Membrane receptors that detect the presence of soluble messengers in the environment

B. Proteins that recruit specific cells to an area

C. Chemical messengers that induce cell differentiation

D. Transcription factors that induce the expression of genes involved in cell adhesion

E. Adhesion molecules that bind to the inside of blood vessels

B

42) Monocytes move from the systemic circulatory system into general connective tissues, where they differentiate into what phagocytic cell type?

A. Macrophage

B. B Cell

C. T Cell

D. Neutrophil

A

43-Which immune cell is responsible for the quickest release of histamine that causes the red itchy welts associated with allergies?

A. Mast cell

B. lymphocyte

C. eosinophil

D. basophil

A

44-Macrophages serve as antigen presenting cells and activate_____:

A. Natural killer cells

B. T lymphocytes

C. B lymphocytes

D. Neutrophils

B

45-Activation of macrophages is best achieved by which cytokine?

A. Interferon gamma (IFN-γ)

B. Granulocyte monocyte colony-stimulating factor (GM-CSF)

C. Interleukin-1

D. Macrophage chemotactic protein (MCP)

E. Transforming growth factor beta (TGF-β)

A

46-A 4-year-old child has atopic dermatitis due to severe allergies to dust, animal dander, and many kinds of pollens. Mediators released from which cell type are responsible for the clinical manifestations immediately following exposure to these substances?

A. B cells

B. Macrophages

C. Mast cells

D. Th1 cells

E.Th2 cells

C

47-A 36-year-old woman with severe allergy to yellow jackets was stung multiple times at a soccer game. Within minutes she developed respiratory distress and became unconscious. Which mediator is primarily responsible for this reaction?

A. Complement

B. IgG

C. Histamine

D. TNF

E. Norepinephrine

C

48-Which one of the following leukocytes is considered a “granulocyte”?

A) Macrophage

B) Neutrophil

C) Dendritic cell

D) Natural killer cell

E) Natural killer T cell

B

49-A 45-year-old female presents with anorexia and some abdominal pain. Fecal smears reveal the presence of Taenia eggs, products of a parasitic tapeworm infection. Which one of the following cells would be most effective in defense against this parasite?

A. Platelets

B. Erythrocytes

C. Neutrophils

D. Eosinophils

E. Monocytes

D

50-. The difference between tolerance and immunity depends upon the maturation status of the antigen presenting dendritic cells. What is the T-cell outcome of an antigen presentation event by a mature dendritic cell?

A. Anergy

B. Apoptosis

C. Activation

D. Ignorance

E. Suppression

C

51-Pattern recognition receptors (PRR) can be found on

(A) B cells

(B) T cells

(C) Dendritic cells

(D) Defensins

C

52-Depressed levels of MHC class I molecules on virus infected host cells can be detected by

(A) T cytotoxic cells

(B) T suppressor cells

(C) Activated macrophages

(D) NK cells

D

53- Pathogen-associated molecular patterns

(A) Are found on many microorganisms

(B) Are restricted to Gram-positive bacteria

(C) Are restricted to Gram-negative bacteria

(D) Are restricted to toxin-secreting bacteria

A

54-Cytokines

A) Are specific, each with a single activity

(B) Can be blocked by extra-cytoplasmic portions of their cellular receptor

(C) Release is restricted to lymphocytes

(D) Enter cells by a glucose transport system

B

55-The adaptive immune system develops from stem cells originating in the

(A) Fetal thymus

(B) Fetal liver and bone marrow

(C) Placenta

(D) Germinal centers of the spleen

B

56-. Toll like receptors

(A) Recognize PAMPS on selective microorganisms

(B) Link to IgM on B-cell surfaces

(C) Link to the antigen receptor on T cells

(D) Down-regulate inflammation

A

57-Which one of the following cells is the source of TNF -a IL-1 , IL-12 ?

A) B cells

B) macrophage

C) mast cells

D) TH1 cells

B

58-Macrophages recognize microorganisms through the Interaction of their substances with what receptor?

A) antigen receptor

B) complement receptor

C) membrane IG

D) PRR

D

59-a person developed an extracellular bacterial infection With the subsequent release of IGM , what is the most What is the most important function of IGM in this infection

A) antigen receptor

B) complement receptor

C) fc receptor

D) membrane Immunoglobulin

E) pattern recognition receptor

E

60- Activation of the complement system directly causes?

A) enhanced phagocytosis

B) expression of TLR on phagocyte cell surface

C) enhancement of immune mediated neutralization

D) proliferation of T cells

A

61-In the classical pathway, the antibody activated the C1 complex consisting of C1q, C1r & C1s subunit. Which of the following subunit binds to the antibody

a) C1q

b) C1r

c) C1s

d) All of the above

A

62- Which of the following C1 subunit has the catalytic activity that cleaves C4 and C2 complement proteins?

a) C1q

b) C1r

c) C1s

d) None of the above

c

63-In the classical pathway, which of the following complement complex serve as C3 convertase 13.

a) C4aC2a

b) C4bC2b

c) C4bC2a

d) C4aC2b

B

64-In the classical pathway, after the proteolysis of C3 complement pathway, which component is cleaved by C4bC2aC3b and initiate the formation of membrane attack complex

a) C5

b) C6

c) C7

d) C8

A

65-The deficiency of the complement component factor D and properdin lead to the recurrent bacterial infection. Which of the following pathway is affected in this condition?

a) Alternative pathway

b) Classical pathway

c) Lectin binding pathway

d) None of the above

A

66- The deficiency of the complement proteins (C1q, C1q, C1s) or the complement receptors lead to the accumulation of immune complexes resulting in SLE or vasculitis .The deficiency affects the following complement pathway

a) Alternative pathway

b) Classical pathway

c) Lectin binding pathway

d) None of the above

B

67-The membrane attack complex consists of five different complement proteins C5, C6, C7, C8, and C9. Which of the following subunits bind to the surface and provide a binding site for a subsequent component?

a) C5a

b) C5b

c) Both of the above

d) None of the above

B

68. The classical and alternative pathways meet at complement component:

A. C3

B. C4

C. C4b

D. C5

E. Factor D

A

69)A T cell located at the epithelial barrier of the gut is a

(A) (γδ) T cell

(B) Helper T cell

(C) Cytotoxic T cell

(D) Regulatory T cell

(E) Natural killer T cell

A

70)A cell found in the circulation that secretes INFα and INFβ is a

(A) Neutrophil

(B) Basophil

(C) Eosinophil

(D) Plasmacytoid cell

(E) Mast cell

D

71)An anti-inflammatory cytokine is a

(A) INF-γ

(B) IL-4

(C) IL-6

(D) IL-10

(E) IL-17

D

72)Which one of the following is NOT a primary function of phagocytes?

(A) Engulfing and killing invading microbes

(B) Expression of proinflammatory cytokines and chemokines

(C) Attacking cells with perforins and granzymes

(D) Production of free oxidative radicals

(E) Presentation of antigen peptides in complex with MHC to T cells

C

73)Regarding chemokines, which one of the following is the most accurate?

(A) Chemokines penetrate the membranes of target cells during attack by cytotoxic T cells.

(B) Chemokines bind to the T-cell receptor outside of the antigen- binding site and activate many T cells

(C) Chemokines attract neutrophils to the site of bacterial infection, thereby playing a role in the inflammatory response.

(D) Chemokines induce gene switching in B cells, which increases the amount of IgE synthesized, thereby predisposing to allergies.

C

74) A workup on an ill child revealed low levels of complement C3 in her blood. Which one of the following presentations did this child most likely manifest?

(A) Chronic eczema

(B) Immune hemolytic anemia

(C) Incomplete recovery from viral infections

(D) Poor response to vaccination

(E) Recurrent infections with extracellular bacteria

E

75) The interaction of which molecule on the membrane of cells with its ligand signals apoptosis?

(A) B7 (CD80/86)

(B) CD40

(C) CTLA-4 (CD152)

(D) Fas (CD95)

(E) Fc receptor (CD16)

D

76) Which one of the following cytokines plays the most important role in protection against intracellular growth (reactivation) of Mycobacterium tuberculosis?

(A) Interferon-γ

(B) Interleukin-2

(C) Interleukin-5

(D) Interleukin-10

(E) Tumor necrosis factor

A

77) Neutrophils are attracted to the sites of extracellular bacterial infections by which two important chemotactic substances?

(A) Bacterial mannose and lipopolysaccharide

(B) Complement C5a and interleukin-8 (CXCL-8)

(C) Histamine and complement C3b

(D) Interleukin-7 and interleukin-16

(E) Leukotriene B4 and granulocyte colonystimulating factor (G-CSF)

B

78) A 66-year-old man with advanced pancreatic cancer develops cachexia (loss of mass) Which cytokine is primarily responsible for the cachexia seen in certain patients with cancer or debilitating infections?

(A) Interferon-α

(B) Interleukin-7

(C) Interleukin-17

(D) Transforming growth factor-β

(E) Tumor necrosis factor-

E

79-A person develops a viral infection and both T and B cells become activated to fight the infection. In which way is antigen recognition by B cells different from antigen recognition by T cells?

(A) B cells home to the paracortex of lymph nodes where they recognize the antigens trapped by helper T cells

(B) B cells recognize the antigens that have been processed and presented by follicular dendritic cells

(C) B cells undergo receptor editing to change receptors that fail to bind to an antigen

(D) B cells utilize membrane immunoglobulin molecules to bind to antigen in its natural state

(E) The antigen receptors on a single B cell have a broad specificity, and are able to recognize several chemically unrelated antigens

D

80-The person in the above question is experiencing a primary infection with the virus. B cells activated in a primary infection secrete which class of antibody first?

(A) IgA

(B) IgD

(C) IgE

(D) IgG

(E) IgM

E

81-The viral infection in the above question began in the respiratory tract. Which antibody class would best protect respiratory epithelial cells from viral infection?

(A) IgA

B) IgD

(C) IgE

(D) IgG

(E) IgM

A

82-The virus in the above question spreads from the res- piratory tract and causes viremia. Which antibody class would be most important in fighting the virus as it spreads through the body?

(A) IgA

(B) IgD

(C) IgE

(D) IgG

(E) IgM

D

83-Antigen receptors on T and B cells share which similar feature?

(A) Affinity maturation occurs following antigen recognition for both receptor types

(B) Interaction with MHC molecules is required for antigen recognition by both receptor types

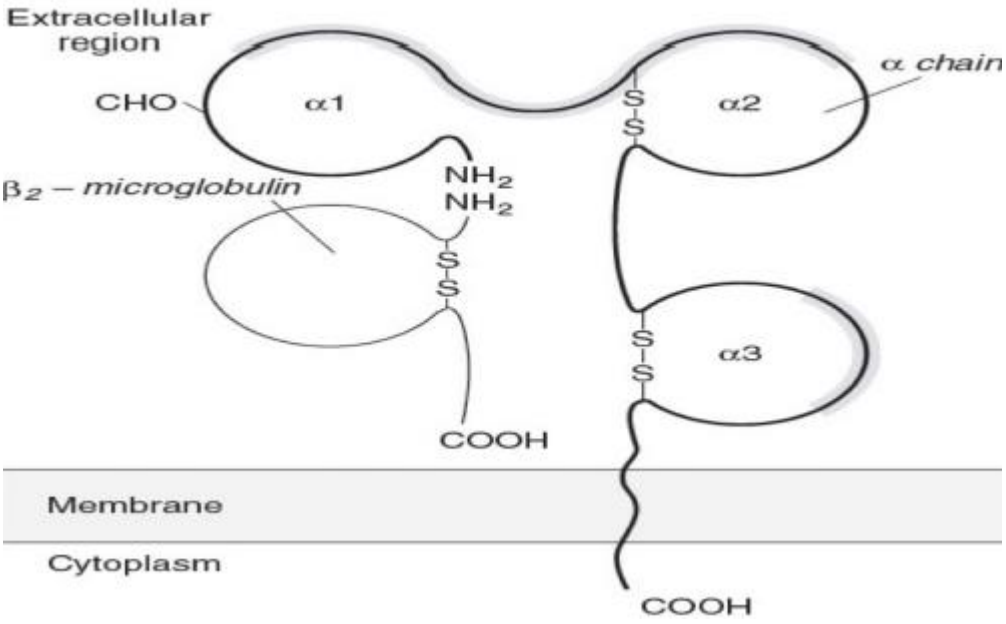
(C) The constant regions of both receptor types are identical

(D) The specificity of both receptor types is determined following exposure of mature cells to antigen

(E) The variable portions of both receptor types are generated by random recombination of genes

E

84-Which of the following statements best applies to the following diagram?



a. Depicts the cell-membrane MHC product associated with narcolepsy

b. Essential for the transplacental passage of antibody

c. Found on T and B lymphocytes and all nucleated cells

d. Present on macrophages but not neutrophils

e. Represents the secretory component associated with IgA

f. Required for recognition of processed antigen by TH1 and TH2 lymphocytes

C

85- 19-year-old college student develops a rash. She works part-time in a pediatric AIDS clinic. Her blood is drawn and tested for specific antibody to the chicken pox virus (varicella-zoster). Which of the following antibody classes would you expect to find if she is immune to chicken pox?

a. IgG

b. IgA

c. IgM

d. IgD

e. IgE

A

86-The complement system plays a key role in the host defense process. Which of the following components of this system is the most important in chemotaxis?

a. C1q

b. C3a

c. C3b

d. C4a

e. C5a

E

87- The T-cell antigenic receptor

(A) Is a monomeric IgM molecule

(B) Is a monomeric IgG molecule

(C) Will respond only to epitopes processed class I HLA molecules

(D) Does not interact directly with circulating antigens

D

88. A cell expressing CD3pos, CD25 pos, is a:

(A) (γδ) T cell

(B) Helper T cell

(C) Cytotoxic T cell

(D) Regulatory T cell

(E) Natural killer cell

D

89.A CD3pos cell that secretes perforin and granzyme is a:

(A) (γδ) T cell

(B) Helper T cell

(C) Cytotoxic T cell

(D) Regulatory T cell (E)Natural killer cell

C

90. Antibodies in our body are produced by:

(A) B-lymphocytes

(B) T-lymphocytes

(C) Monocytes

(D) RBC's

ANSWER: A

91.Plasma cells are the end cells of

(a) T-cells

(b) β-cells

(c) Killer cells

(d) NL

b

92.Dendritic cells, macrophages, and what other cell types are considered "professional antigen presenting cells," capable of antigen presentation to T helper cells?

(A) B cells

(B) Basophils

(C) Eosinophils

(D) Mast cells

(E) Neutrophils

A

93.If a person had a genetic defect affecting perforin production, which cells and immune function would be affected?

(A) Cytotoxic T cells and natural killer cells/cell killing

(B) Dendritic cells/antigen presentation

(C) Eosinophils and basophils/granule production

(D) Macrophages and neutrophils/phagocytosis

(E) Mast cells/fusion of granules to cell membrane

A

94.Antigen receptors on T and B cells share which similar feature?

(A) Affinity maturation occurs following antigen recognition for both receptor types

(B) Interaction with MHC molecules is required for antigen recognition by both receptor types

(C) The constant regions of both receptor types are identical

(D) The specific city of both receptor types is determined following exposure of mature cells to antigen

(E) The variable portions of both receptor types are generated by random recombination of genes

E

95.Which immune system cells recognize body cells with reduced expression of MHC class I molecules? (A) Cytotoxic T cells

(B) Dendritic cells

(C) Macrophages

(D) Natural killer cells

(E) Neutrophils

D

96.Antigen presenting cells (APCs) are required for T-cell recognition of specific antigen and activation. APCs accomplish this task by presenting antigen in the con-text of which of the following molecules?

(A) T-cell receptor (TCR)

(B) Toll-like receptor (TLR)

(C) Major histocompatibility complex (MHC)

(D) Killer inhibitory receptor (KIR) (E) FCR

C

97.The difference between tolerance and immunity depends upon the maturation status of the antigen presenting dendritic cells. What is the T-cell outcome of an antigen presentation event by a mature dendritic cell?

(A) Anergy

(B) Apoptosis

(C) Activation

(D) Ignorance

(E) Suppression

C

98.Digeorge syndrome is known to increase likelihood of infection of some microbes, why is that? (Mentioned in meeting)

A) due to a mutation in one of the proteosome genes

B) due to the underdeveloped pharyngeal pouches that make up the thymus

C) due to a absent MHC receptor in certain cells

D) more than one of the above is correct

B

99.If a virus snuck into the body , which of the following would you expect to be the last killer?

A) the humoral response initiated by FDC

B) cytotoxic T cells through caspase cascade apoptosis

C) helper T cells through cytokines that help the macrophages fight it

D) through the many epithelial barriers throughout the body

C

100.Which of the following describes the hematopoietic centers in Gestation?

A) blood island =) liver =) bone marrow

B) bone marrow =) blood islands =) liver =) bone marrow

C) liver =) blood islands =) bone marrow

D) they never change from bone marrow

A

101-Which of the following peripheral immune tissues is likely to be different from teen through life to old age?

A) spleen

B) MALTs

C) thymus

D) lymph nodes

C

102.which of the following is needed to ensure a healthy T cell army that doesn't attack our own cells?

A) MALTs

B) TMECs

C) APCs

D) all the above are needed

B

103-.Which of the following molecules triggers the caspase cascade And through which cells

A) perforins/granzymes through CD8 cells

B) isozymes through CD4 cells

C) isozymes through CD8 cells

D) perforins/granzymes through CD4 cells

A

اللهم صلِّ وسلِّم وبارك على نبينا محمد وعلى آله وصحبه أجمعين