**Monoclonal antibody therapy: What compatibility testing labs need to know**

**CONTINUING EDUCATION TEST**

**October 2019 (This form may be photocopied. It is no longer valid for CEUs after April 30, 2021.)**

**TEST QUESTIONS**

1. The use of monoclonal antibody (mAb) drugs causes some technical problems in:
   - a. white blood cells and pretransfusion testing.
   - b. red blood cells and pretransfusion testing.
   - c. red blood cells and clotting factors.
   - d. white blood cells and differentials.

2. Cluster of Differentiation cells (CDs) are mostly expressed on:
   - a. leukocytes.
   - b. red blood cells.
   - c. platelets.
   - d. all of the above.

3. The two most-frequent monoclonal antibodies that are encountered in the blood bank are:
   - a. anti-CD20 and anti-CD38.
   - b. anti-CD45 and anti-CD38.
   - c. anti-CD45 and anti-CD47.
   - d. anti-CD47 and anti-CD38.

4. CD38 mAbs are currently used in the treatment of:
   - a. multiple myeloma.
   - b. solid tumors.
   - c. autoimmune disorders.
   - d. all of the above.

5. CD47 mAbs are currently approved for the use of patients with solid tumors and hematologic malignancies.
   - a. True
   - b. False

6. CD38 is highly expressed on:
   - a. platelets.
   - b. plasma cells.
   - c. red blood cells.
   - d. monocytes.

7. Which action is achieved by the binding of anti-CD38 to CD38 in patients with multiple myeloma (MM)?
   - a. inhibits the growth and proliferation of MM
   - b. induces apoptosis
   - c. both a. and b.
   - d. none of the above

8. CD47 is expressed on almost all cell types and tissues.
   - a. True
   - b. False

9. The Rh phenotype that has the highest expression of CD47 is ___________ and the Rh phenotype that has the lowest expression of CD47 is ___________.
   - a. Rh\(^{a}\), Rh\(^{b}\)
   - b. Rh\(^{c}\), Rh\(^{e}\)
   - c. Rh\(^{c}\), Rh\(^{d}\)
   - d. Rh\(^{a}\), Rh\(^{e}\)

10. Which immune action of anti-CD47 therapy is achieved in patients with malignancies?
    - a. Initiates an inhibitory signal that helps the malignance cell escape phagocytosis
    - b. Blocks an inhibitory signal that promotes phagocytosis of malignant cells
    - c. Induces apoptosis by self-recognition
    - d. all of the above

11. Anti-CD38 treatment will exhibit panreactive serologic reactions in all iAT tests and can persist for up to:
    - a. 2 months.
    - b. 6 months.
    - c. 1 year.
    - d. 5 years.

12. Which enzyme is used in blood banking that abolishes the panreactivity from anti-CD38?
    - a. DTT
    - b. ficin
    - c. papain
    - d. all of the above

13. Which clinically significant antibody is destroyed by the action of DTT?
    - a. Fy\(^{a}\)
    - b. Jk\(^{b}\)
    - c. Kell
    - d. E

14. Which type of red blood cells can be used to eliminate panreactivity in iAT testing because they have very little CD38 expressed on the cell surface?
    - a. rabbit red blood cells
    - b. cord red blood cells
    - c. elderly adult red blood cells
    - d. none of the above

15. ABO discrepancies are commonly seen in patients being treated with anti-CD38.
    - a. True
    - b. False

16. Anti-CD47 interferes with which of the following tests?
    - a. DAT
    - b. ABO forward and reverse
    - c. IA1
    - d. all of the above

17. What is the most commonly used reagent that eliminates the interference of anti-CD47 treatment?
    - a. anti-Igg that does not bind to IgG1
    - b. anti-Igg that does not bind to IgG2
    - c. anti-Igg that does not bind to IgG3
    - d. anti-Igg that does not bind to IgG4

18. It is important that clinicians order extended phenotyping tests on their patients before immune therapy begins so the blood bank technologists are able to find the safest donor red blood cells for transfusion.
    - a. True
    - b. False

19. In addition to anti-CD38 and anti-CD47 affecting detection of red cell antibodies, which other types of antibodies do these drugs affect detection of?
    - a. HLA class I antibodies
    - b. HLA class II antibodies
    - c. platelet antibodies
    - d. all of the above

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