Which statement BEST distinguishes macrophages from neutrophils?

Check all that apply

- Macrophages persist longer in tissues
- Macrophages can act as antigen-presenting cells
- Neutrophils are the principal long-lived resident phagocytes
- Only neutrophils can perform phagocytosis

Submit

28



* macrophages are long lived cells

* lung tissues have pigments because of macrophages accumulating dust particles inside their cytoplasm as residual bodies

* neutrophils are short lived

A histological section of chronic inflammation contains multinucleated giant cells. These most commonly form through:

- ▲ Fusion of neutrophils
- ◆ Differentiation of plasma cells
- ● Fusion of activated macrophages
- ■ Repeated nuclear division of lymphocytes

* To perform their extensive functions

* Helper T cells stimulates macrophages to fuse by releasing cytokines

Which lymphocyte recognizes extracellular bacterial proteins through its surface receptor?

- ▲ Natural killer cell
- ◆ CD8+ cytotoxic T lymphocyte
- ● Naive B lymphocyte
- ■ CD4+ helper T lymphocyte

* Extracellular = free antigen

* T cells only recognise antigens presented on MHC

A virus-infected cell markedly reduces its surface MHC class I expression. Which immune cell detects this change?

- ▲ Natural killer cell
- ◆ CD8+ cytotoxic T lymphocyte
- ● CD4+ helper T lymphocyte
- ■ Naive B lymphocyte

* Cytotoxic cells recognise virus peptides presented on MHC-1 So reduction of MHC → unable to recognize them

Myelogenous leukemias are caused by cancerous production of innate immune cells, in which tissue such production occurs

- ▲ Spleen
- ◆ Thymus
- ● Bone marrow
- ■ Lymph nodes

* granulocytes and monocytes

Which mechanism is shared by cytotoxic T lymphocytes and natural killer cells?

▲ Perforin- and granzyme-mediated killing

◆ Recognition of antigen exclusively through B-cell receptors

● Secretion of antigen-specific anti-bodies

■ Phagocytosis as the primary killing mechanism

MHC II molecules present

- ▲ antibodies
- ◆ processed foreign antigens from phagolysosomes
- ● T cell receptors
- ■ processed self-antigens from proteasomes



To what does the TCR of a helper T cell bind in healthy individuals?

- ▲ free antigens in a soluble form
- ◆ self antigens presented with MHC II molecules
- ● foreign antigens presented with MHC II molecules
- ■ foreign antigens presented with MHC I molecules

autoimmune disease

B cell

MHC-I doesn't represent foriegn antigens

B cells will bind with their BCR to which of the following in healthy individuals?

- ▲ self antigens presented with MHC I molecules
- ◆ foreign antigens presented with MHC I molecules
- ● foreign antigens presented with MHC II molecules
- ■ free antigen in a soluble form

Which feature best distinguishes a plasma cell from a resting B lymphocyte?

- ▲ Abundant rough ER and eccentric nucleus
- ◆ Numerous cytotoxic granules
- ● Segmented nucleus and pale cytoplasm
- ■ Large central nucleus with condensed chromatin

* The nucleus of plasma cells is peripheral not central, RER produces the antibodies

→ not segmented and pale isn't indication for activity

→ The Heterochromatin in plasma cells looks like car wheel (أسنان)
(condensed at the peripheral part of the nuclear membrane)

To what does the TCR of a cytotoxic T cell bind in autoimmune diseases?

- ▲ foreign antigens presented with MHC I molecules
- ◆ self antigens presented with MHC I molecule
- ● self antigens presented with MHC II molecules
- ■ foreign antigens presented with MHC II molecules

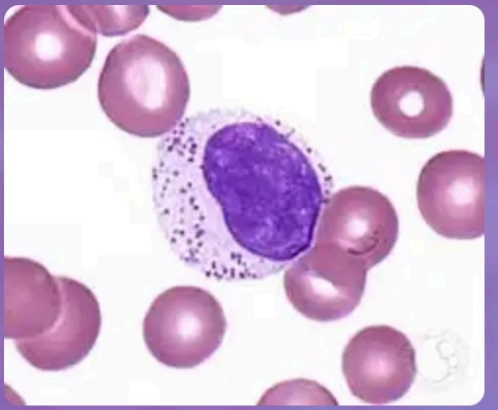
Most circulating lymphocytes are small inactive B cells

True

False

19

~~T~~ cells
not B cells



Identify the cell

Natural killer

* large
* nuclear

① natural killer
② monocyte

Two options

Nucleus shape
→ monocyte → C-shaped
→ oval → NK (rounded)

A resting small lymphocyte has a high nucleus-to-cytoplasm ratio and densely packed chromatin.

True

False

17

X Morphological features of a small lymphocyte

Reduced MHC class I expression may protect cells from CD8+ T cells but increase susceptibility to NK-cell killing.

True

False

B-cell antigen processing, Arrange the steps from first to last

Drag the tiles to arrange them in the correct order.

- ▲ Antigen degraded into peptides =
- ◆ Peptide–MHC II displayed =
- ● Receptor-mediated endocytosis =
- ■ Native antigen binds BCR =

Submit