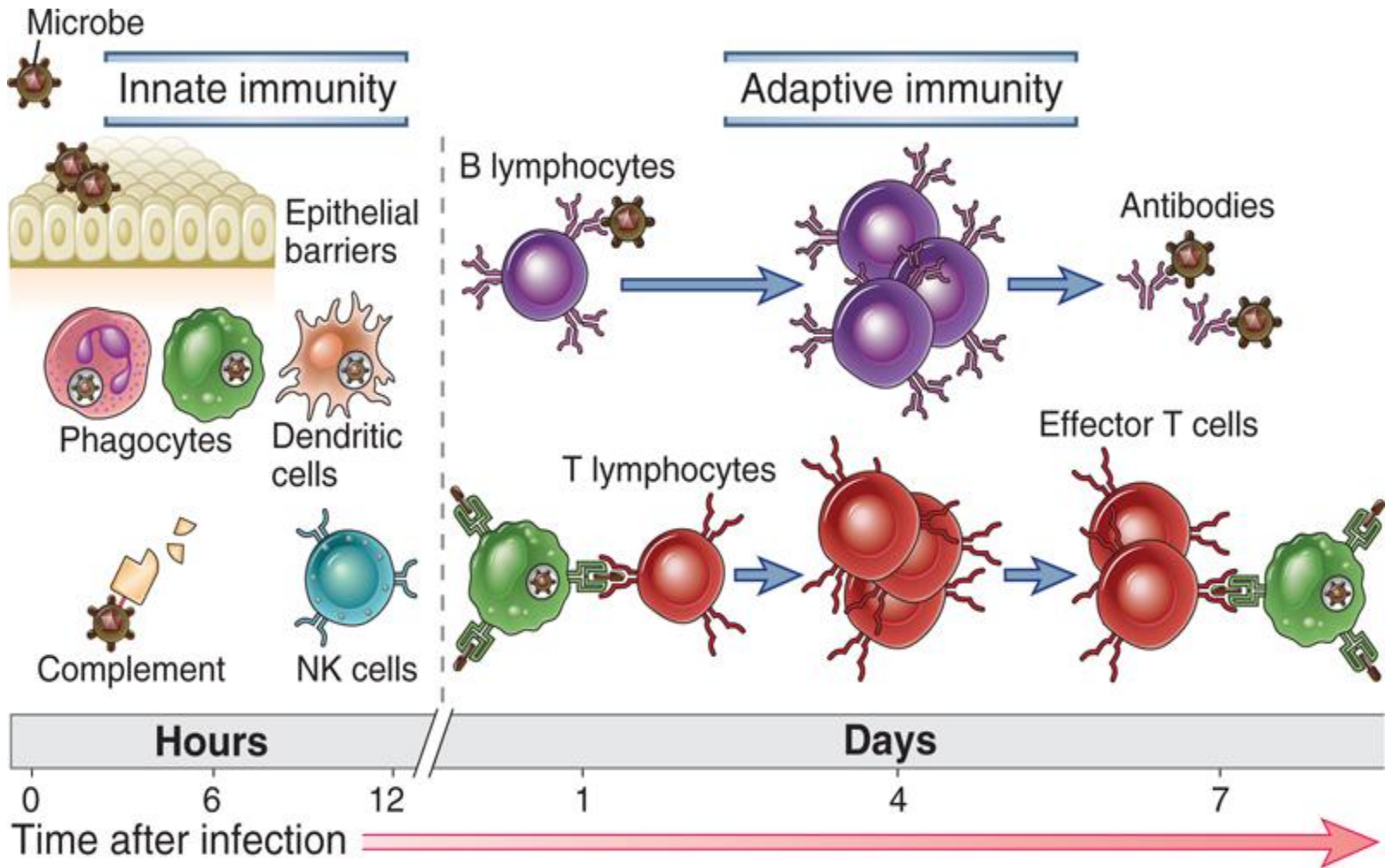



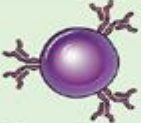


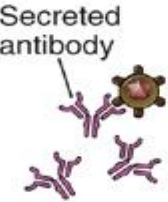
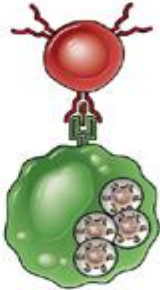



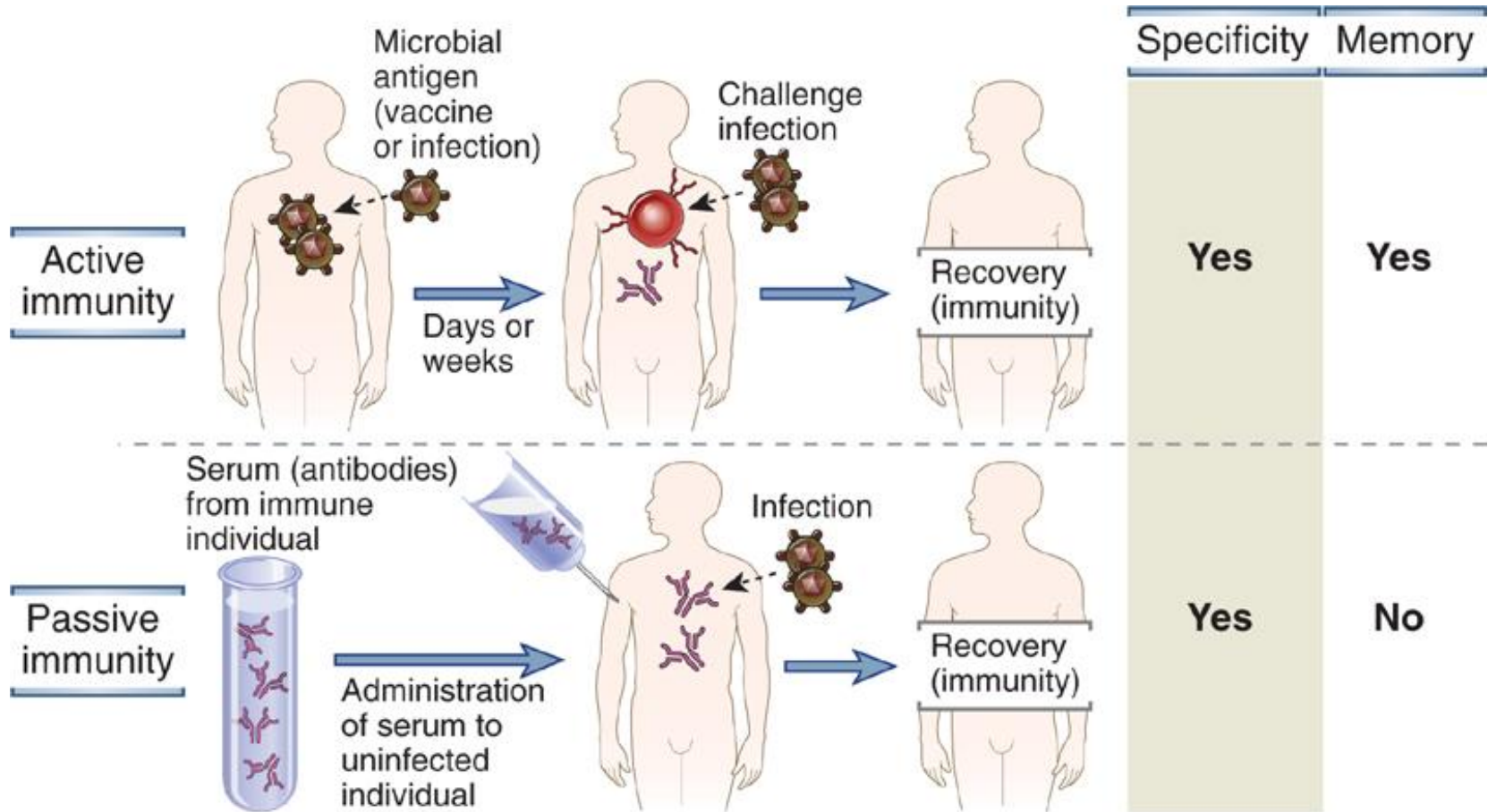
Classification of immunity (Abbas Chapter 1)



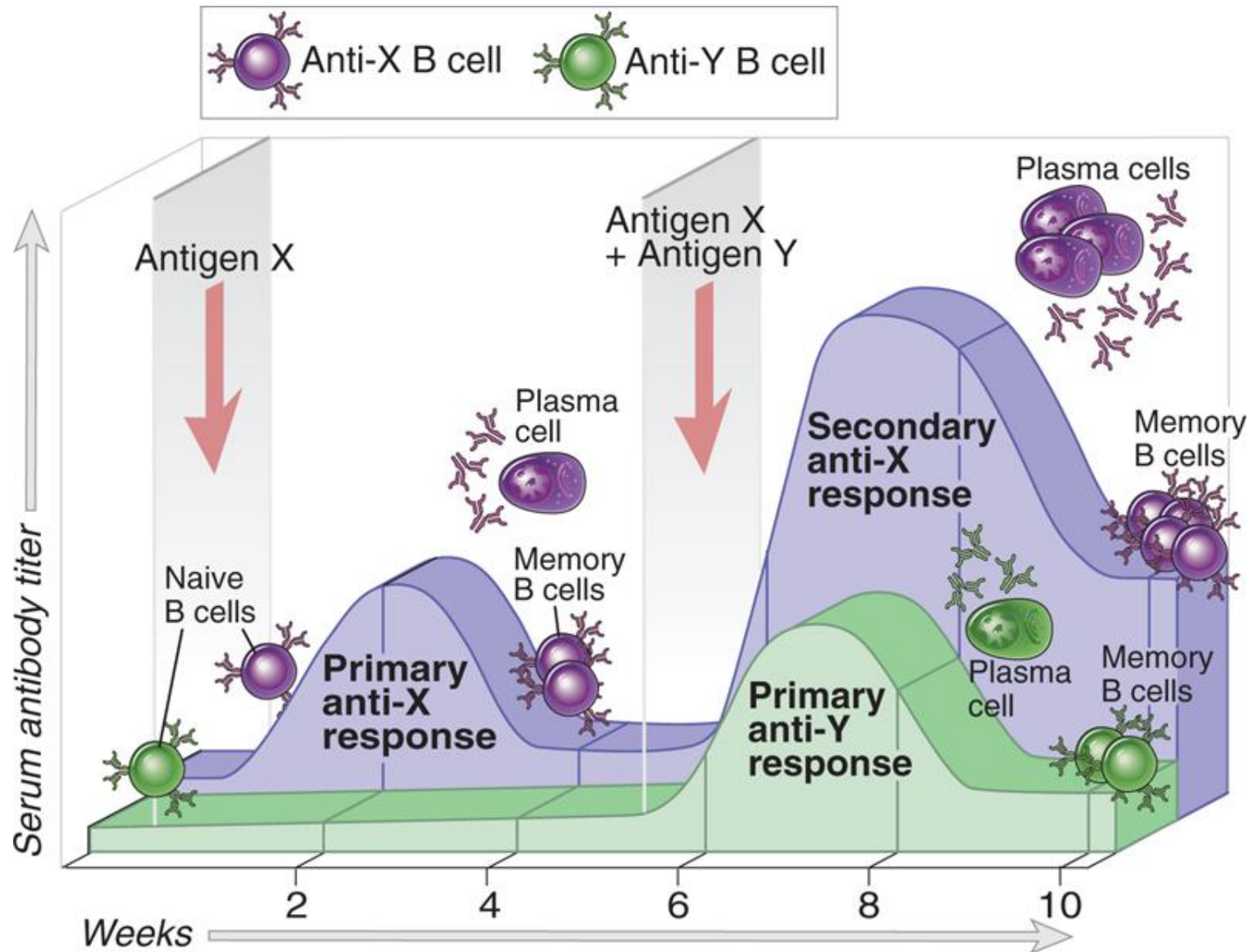
Classification of immunity (Abbas Chapter 1)

	Humoral immunity	Cell-mediated immunity	
Microbe	 <p>Extracellular microbes</p>	 <p>Phagocytosed microbes in macrophage</p>	 <p>Intracellular microbes (e.g., viruses) replicating within infected cell</p>
Responding lymphocytes	 <p>B lymphocyte</p>	 <p>Helper T lymphocyte</p>	 <p>Cytotoxic T lymphocyte</p>
Effector mechanism	 <p>Secreted antibody</p>		
Transferred by	Serum (antibodies)	Cells (T lymphocytes)	Cells (T lymphocytes)
Functions	Block infections and eliminate extracellular microbes	Activate macrophages to kill phagocytosed microbes	Kill infected cells and eliminate reservoirs of infection

Classification of immunity (Abbas Chapter 1)



Course of humoral responses (Abbas Chapter 1)

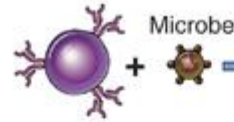


Lymphocytes and their effector functions

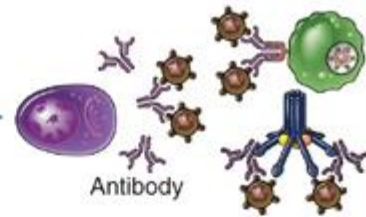
(Abbas Chapter 1)

B lymphocyte

Antigen recognition

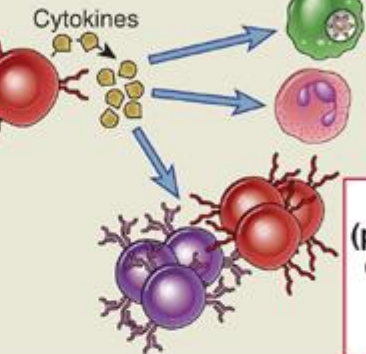
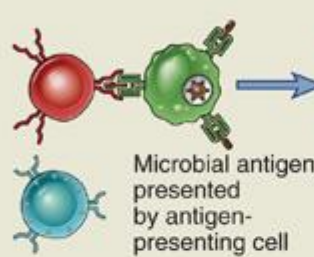


Effector functions



Neutralization of microbe, phagocytosis, complement activation

Helper T lymphocyte



Activation of macrophages

Inflammation

Activation (proliferation and differentiation) of T and B lymphocytes

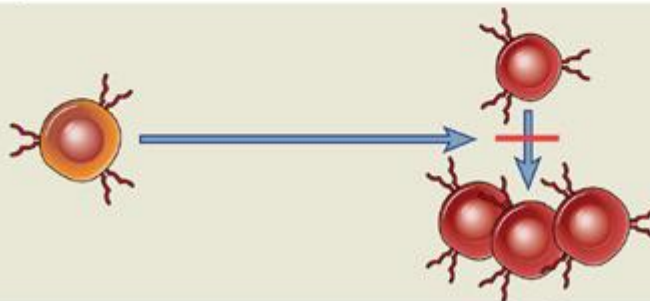
Cytotoxic T lymphocyte (CTL)

Infected cell expressing microbial antigen



Killing of infected cell

Regulatory T lymphocyte



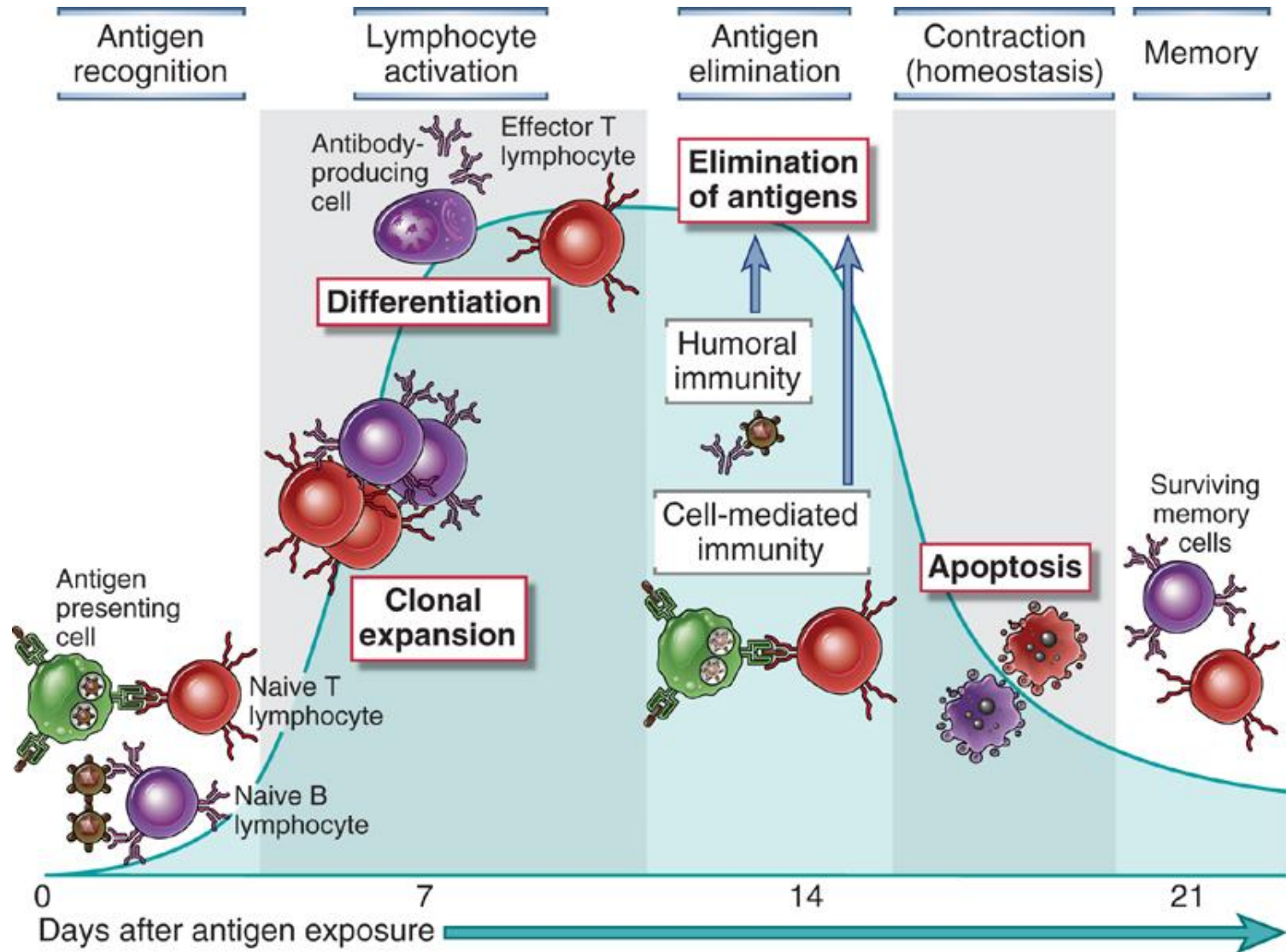
Suppression of immune response

Natural killer (NK) cell



Killing of infected cell

Phases of adaptive immune responses (Abbas Chapter 1)



Clonal selection hypothesis (Abbas Chapter 1)

Lymphocyte clones mature in generative lymphoid organs, in the absence of antigens

Clones of mature lymphocytes specific for diverse antigens enter lymphoid tissues

Antigen-specific clones are activated ("selected") by antigens

Antigen-specific immune responses occur

