

Compliment system

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INTRODUCTION



- QR It is named "complement system" because it was first identified as a heat-labile component of serum that "*complemented*" antibodies in the killing of bacteria.
- QR Consists of serum and cell surface proteins involved in defense against pathogens and tissue damage mediated by antibodies
- QR The Complement system is the major effector of humoral branch of immune system.
- QR Plays major role in both innate and adaptive immunity.

HISTORY



- Research in complement started in 1890s when **Jules Bordet** at the Institut Pasteur of Paris conducted experiment using sheep antiserum.
- He named those substances as **Alexins**.
- Paul Ehrlich** coined the term complement.



Complement Pathway

Three pathway of complement activation

1. Classical pathway:-

Is antibody dependent pathway and triggered by formation of soluble antigen-antibody complex or by binding of the antibody to the antigen present on the target cell surface.

2. Alternative pathway:-

Is antibody independent pathway stimulated by antigen directly eg. Bacterial cell surface components.

3. Lectin Pathway:-

Also antibody independent but resembles classical pathway.

The complement system

Four important functions:

- **Lysis**
- **Opsonization**
- **Activation of inflammatory response**
- **Clearance of immune complexes**

LYSIS

OPSONIZATION

ACTIVATION OF INFLAMMATORY RESPONSE

CLEARANCE OF IMMUNE COMPLEXES

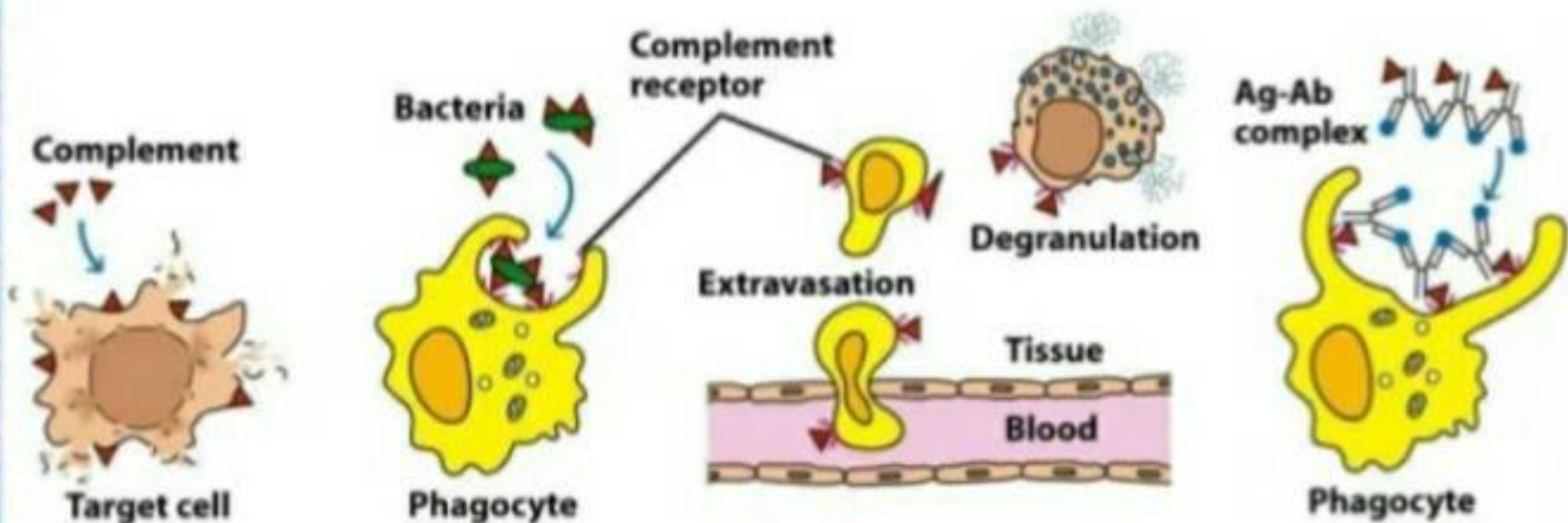


Figure 7-1
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THANK YOU

