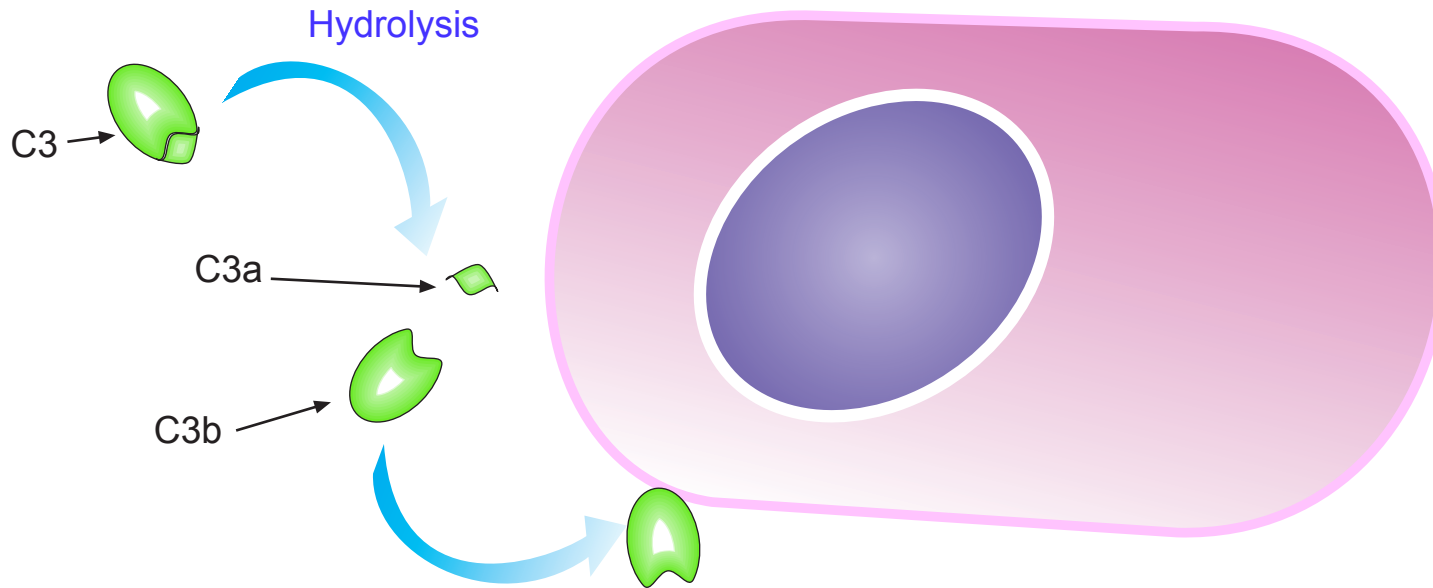


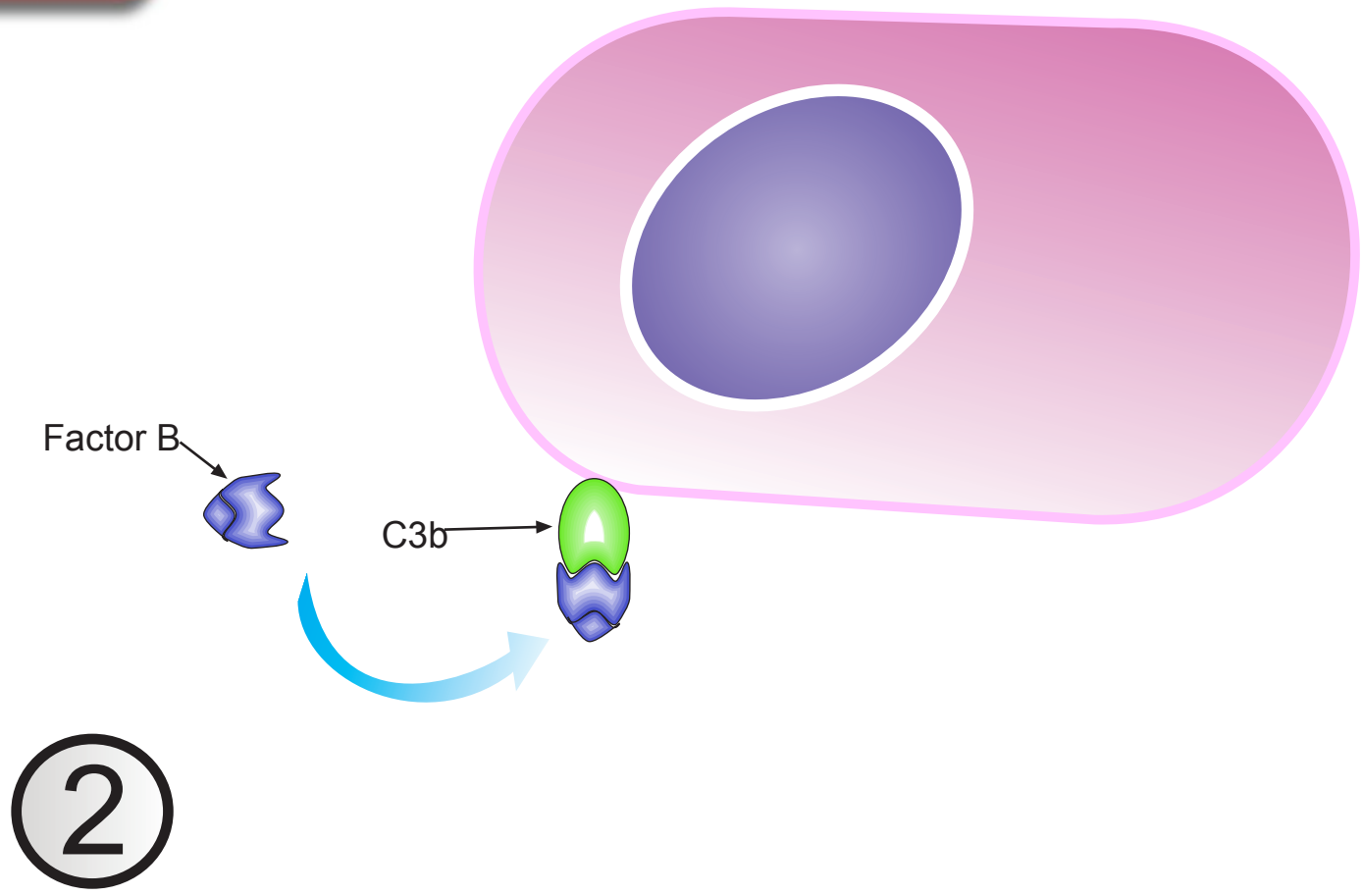
Alternative complement pathway

NEXT 



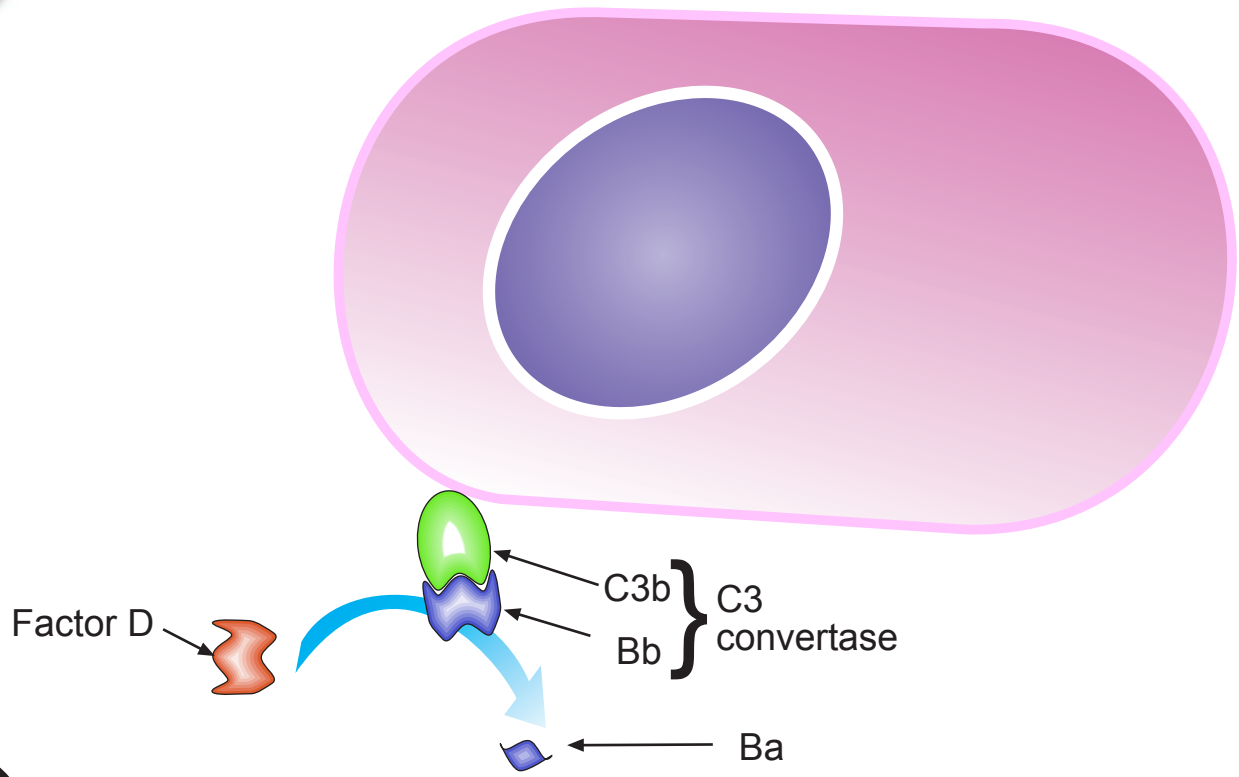
1

The alternative complement pathway is initiated by the binding of C3b complement protein to the cell surface. C3b is generated by the spontaneous hydrolysis of C3 complement proteins in plasma.



2

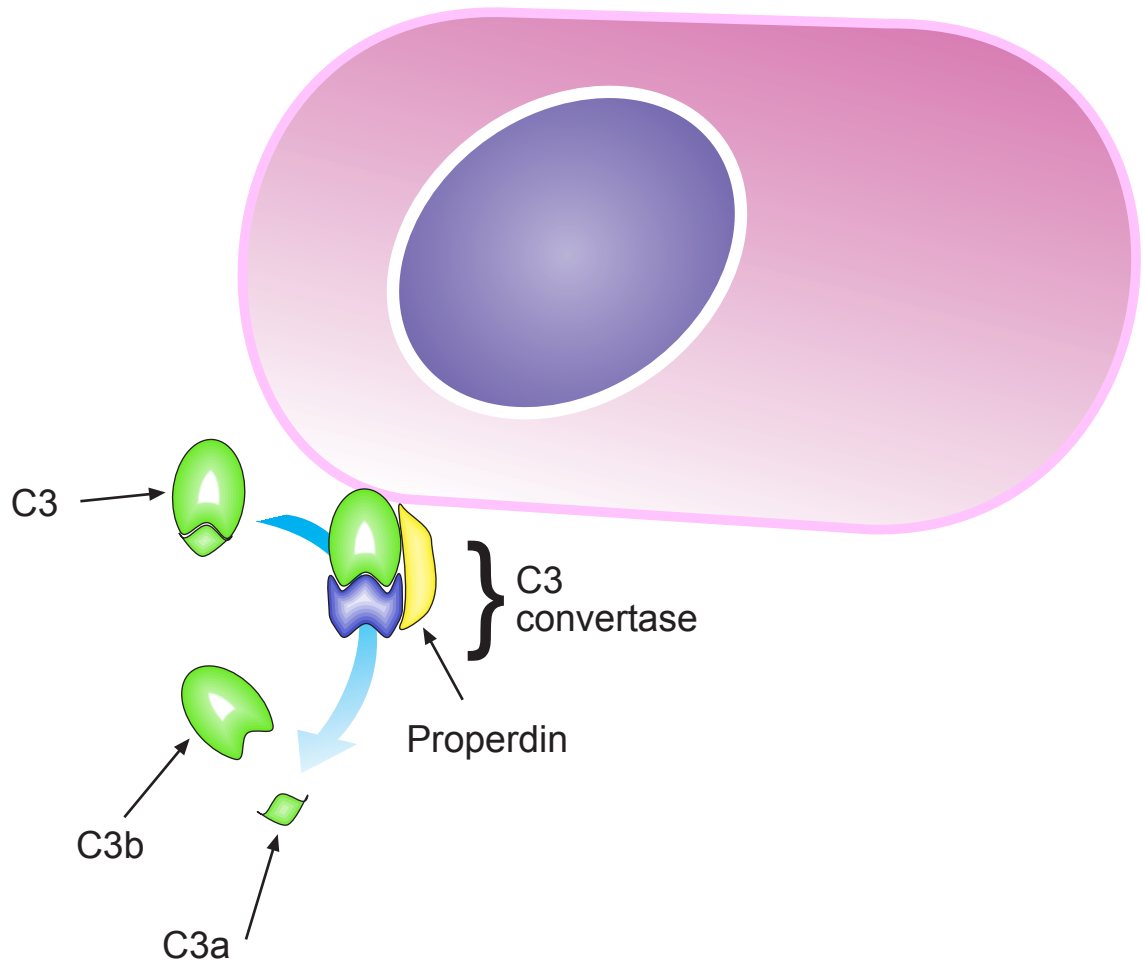
Factor B binds C3b complement protein bound to the cell surface.



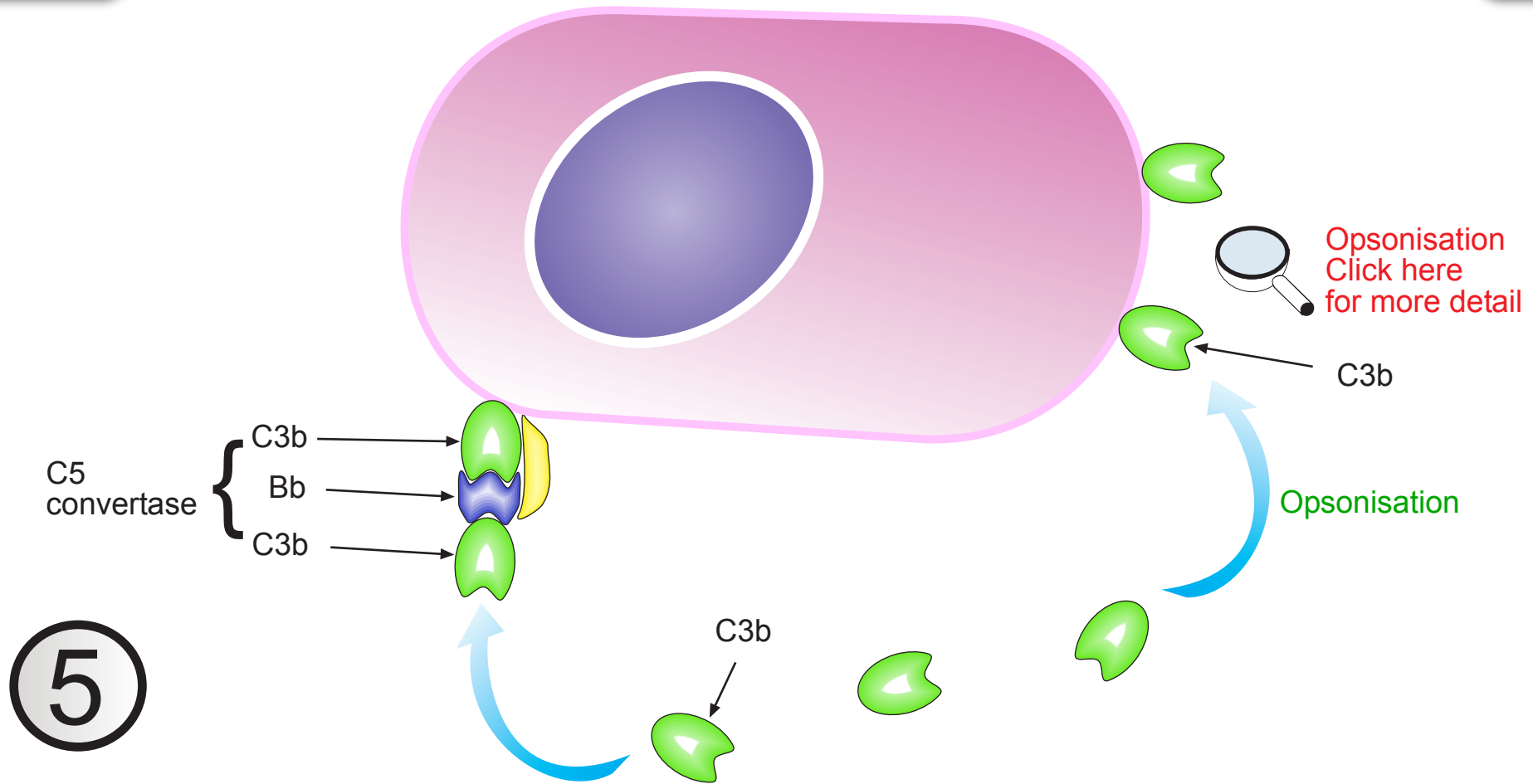
3

Factor D cleaves bound Factor B into Ba that is released and Bb that remains bound to C3b. The C3b and Bb protein complex constitutes the C3 convertase enzyme system.

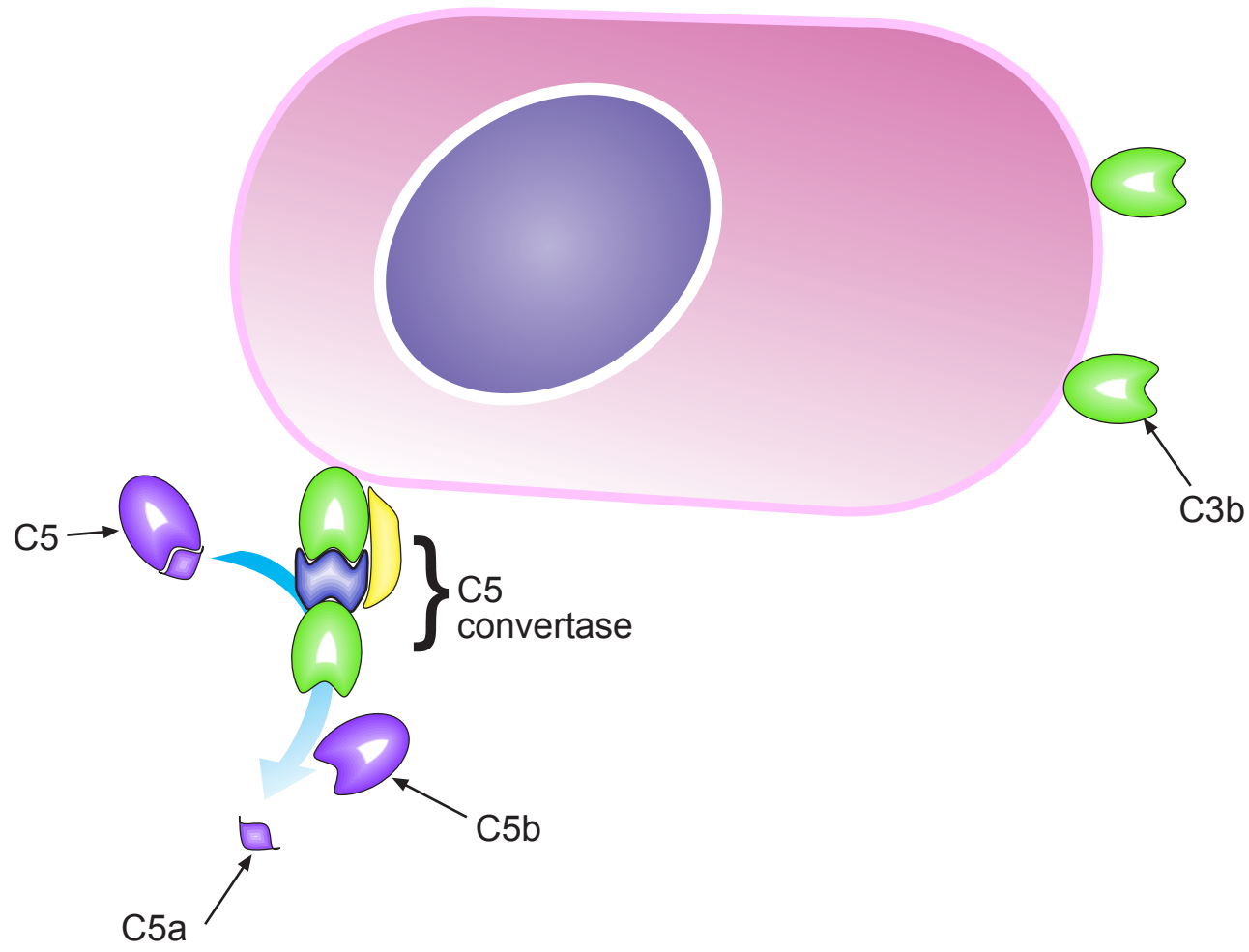
4



The Bb and C3b protein complex is bound by properdin which provides structural stability to the C3 convertase. The C3 convertase generates more C3b complement proteins from C3.

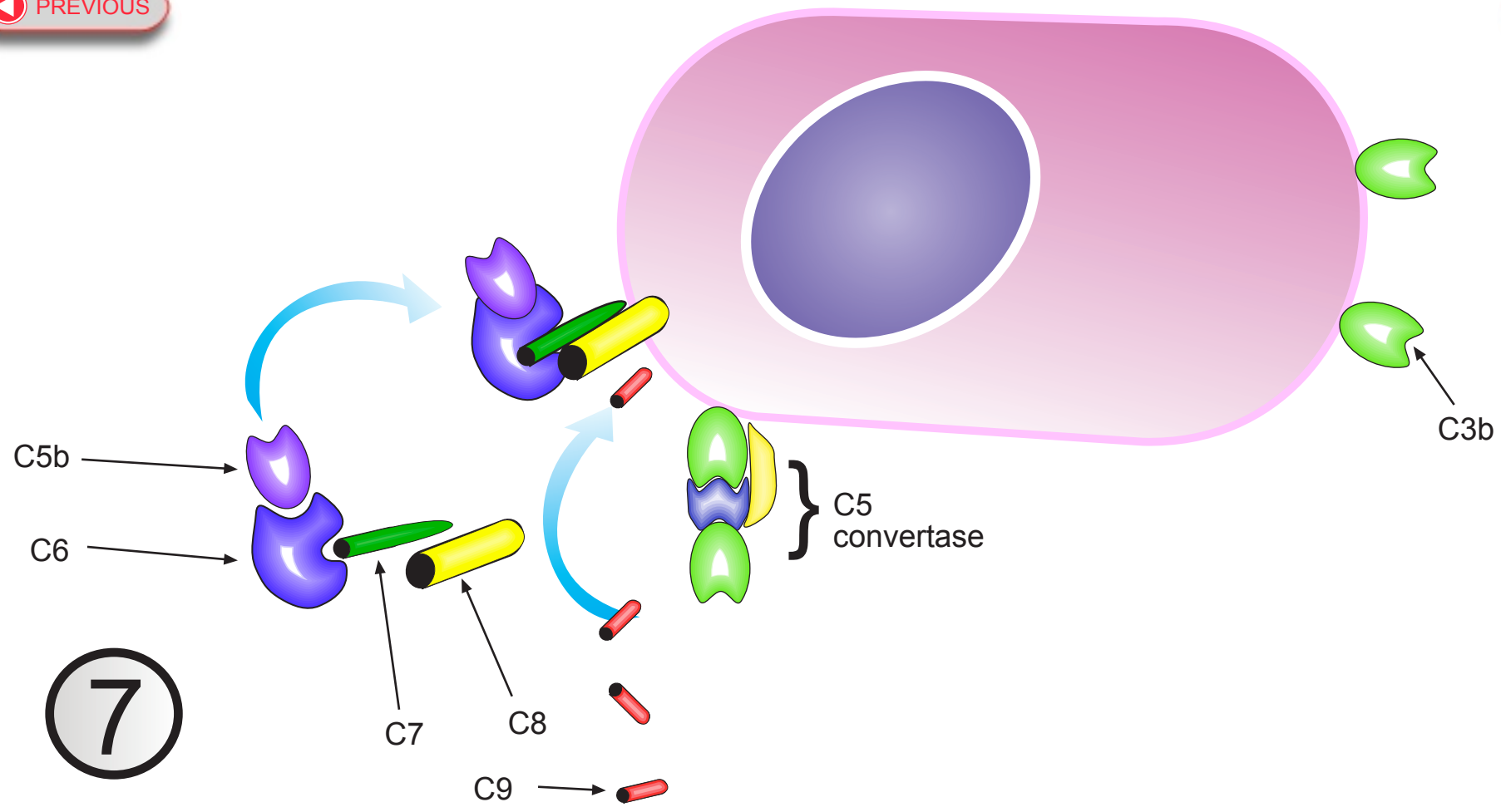


A second C3b complement protein binds to the C3 convertase to constitute the C5 convertase enzyme system. C3b also functions as an opsonin and binds to the surface of the target cell enhanced detection by phagocytes expressing complement receptors. Follicular dendritic cells in germinal centres also express complement receptors which enhances capture of immune complexes for presentation to B lymphocytes.

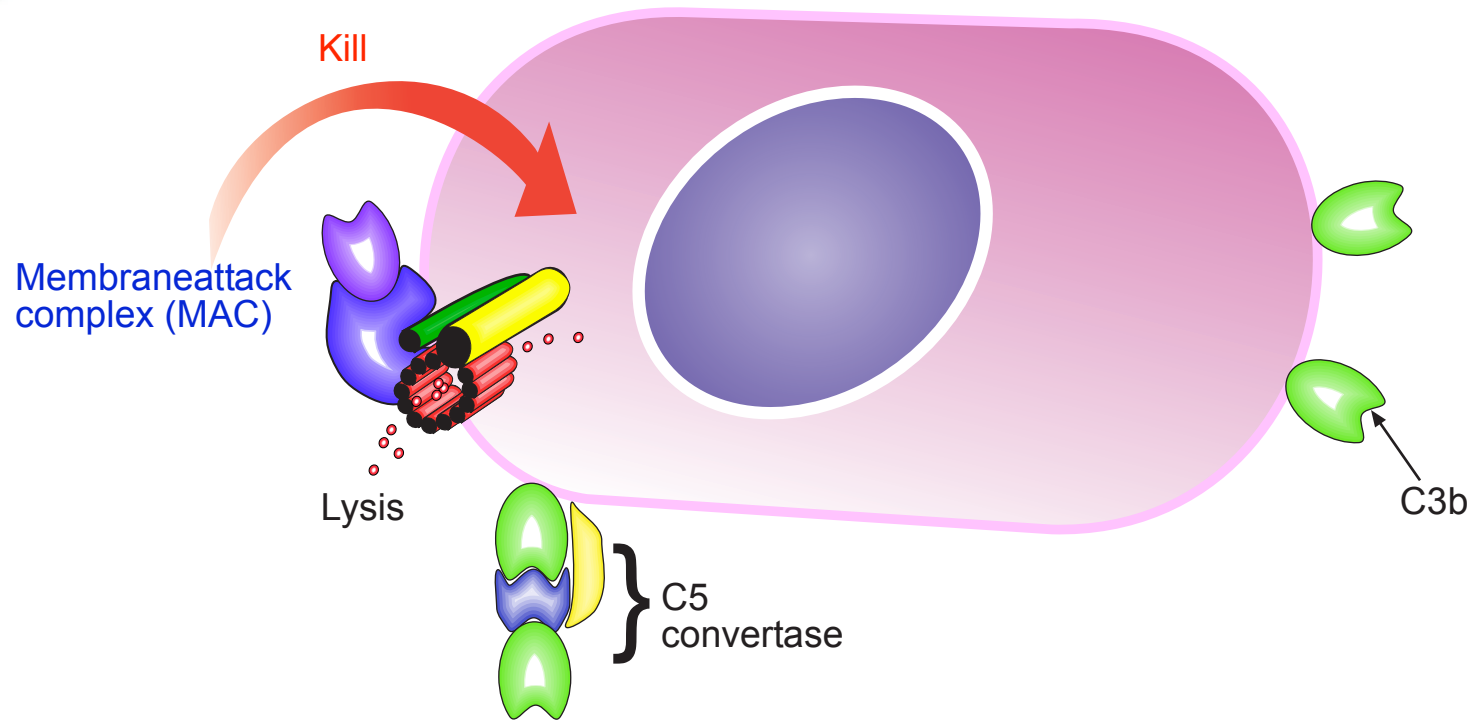


6

The C5 convertase cleaves C5 complement protein into C5b that recruits additional complement proteins involved in the formation of the membrane attack complex. C5a functions as an anaphylatoxin that stimulates inflammation.

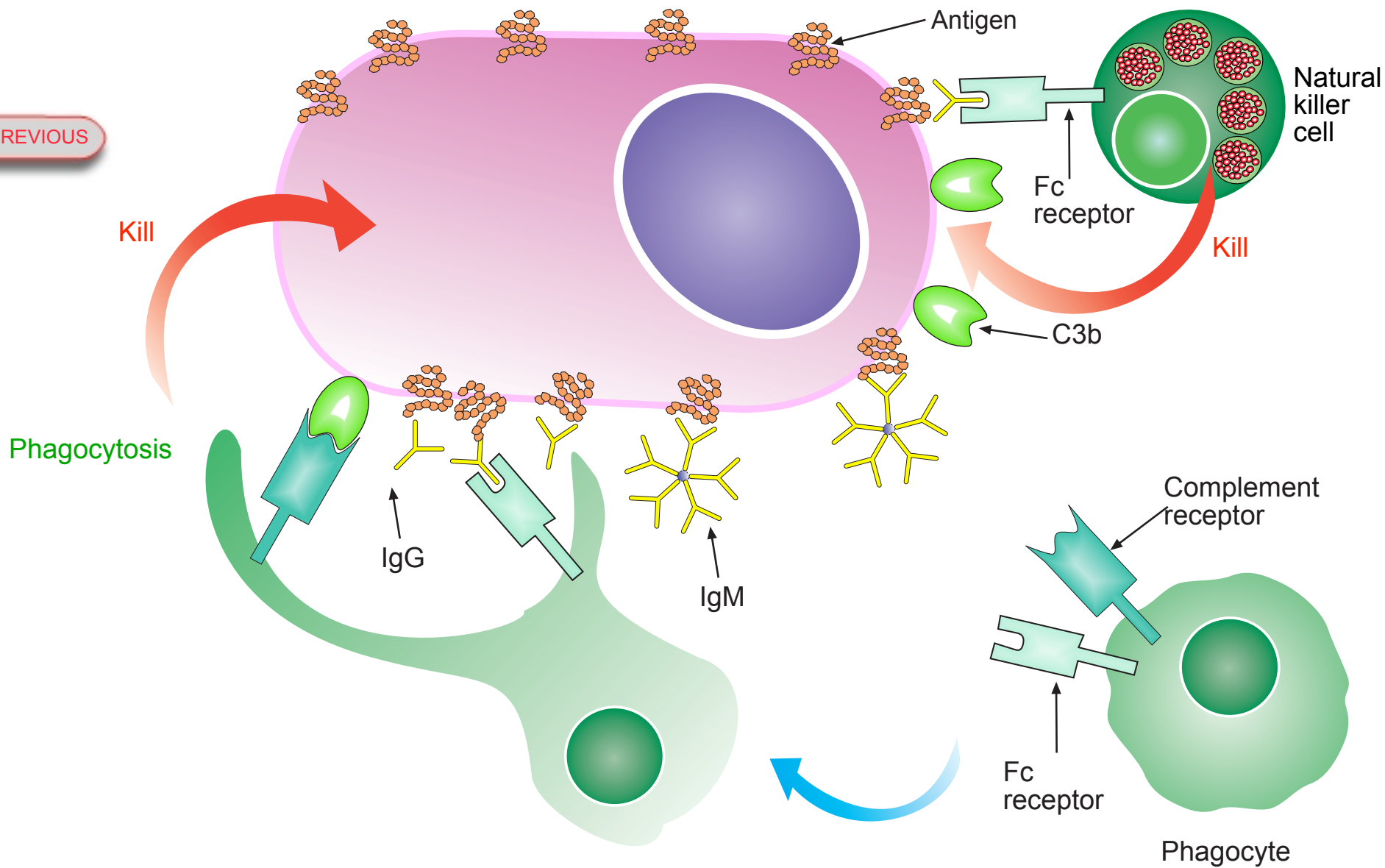


C5b recruits C6 and C7 complement proteins and the complex inserts into the cell membrane. Further recruitment of C8 and C9 complement proteins then follows.



8

C8 and C9 complement proteins constitute a membrane-bound pore that mediates cell lysis. The complement proteins C5b-C9 is known as the membrane attack complex (MAC).



Enhanced phagocytosis of the target cell is mediated by surface-bound C3b complement protein that functions as an opsonin and is detected by complement receptors expressed by phagocytes. Opsonisation of the target cell by IgG is also detectable by phagocytes and Natural killer cells expressing Fc receptors. Phagocytes primarily include macrophages, neutrophils and dendritic cells and to a lesser extent basophils and eosinophils. Follicular dendritic cells in germinal centres also express complement and Fc receptors which enhances capture of immune complexes for presentation to B lymphocytes.