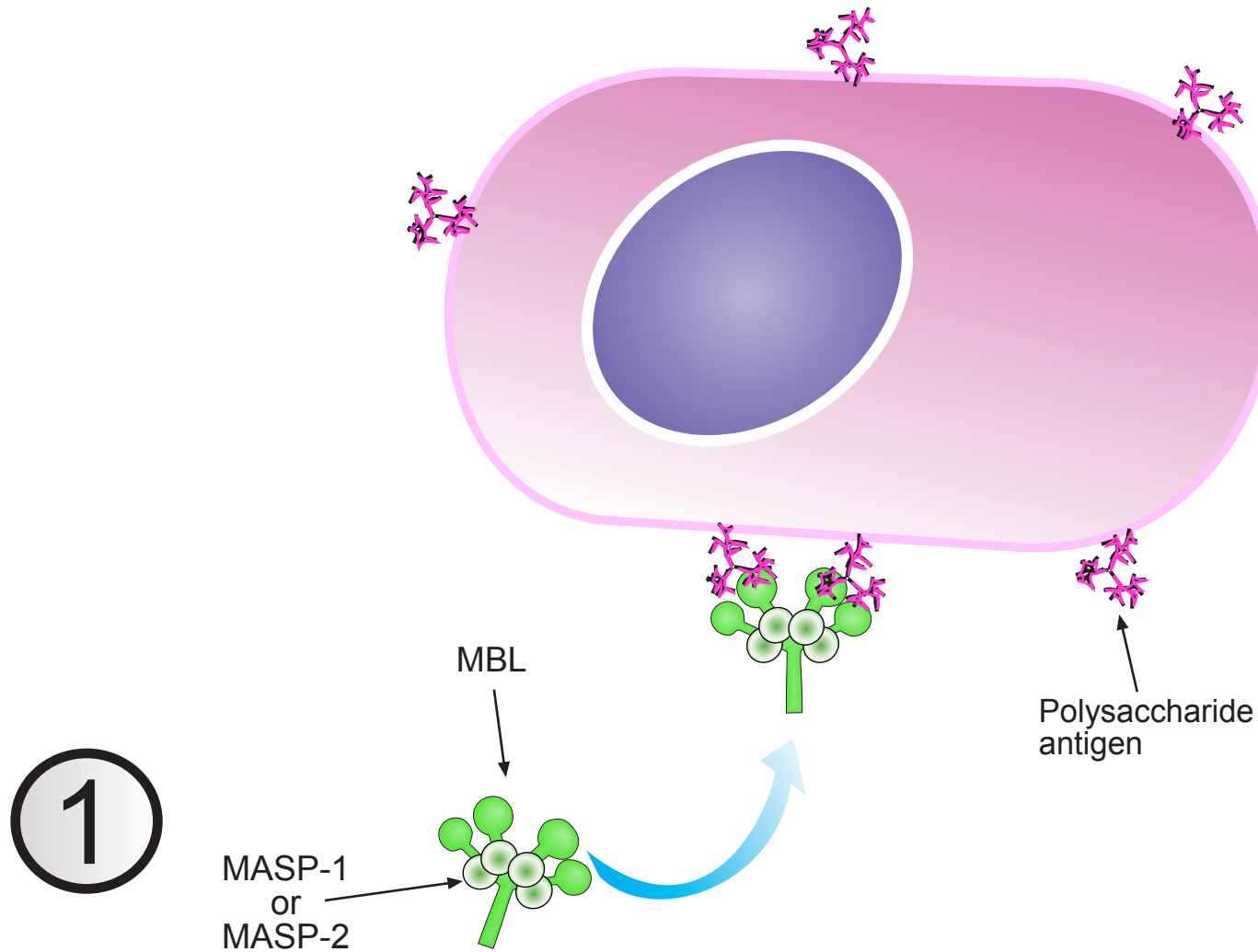


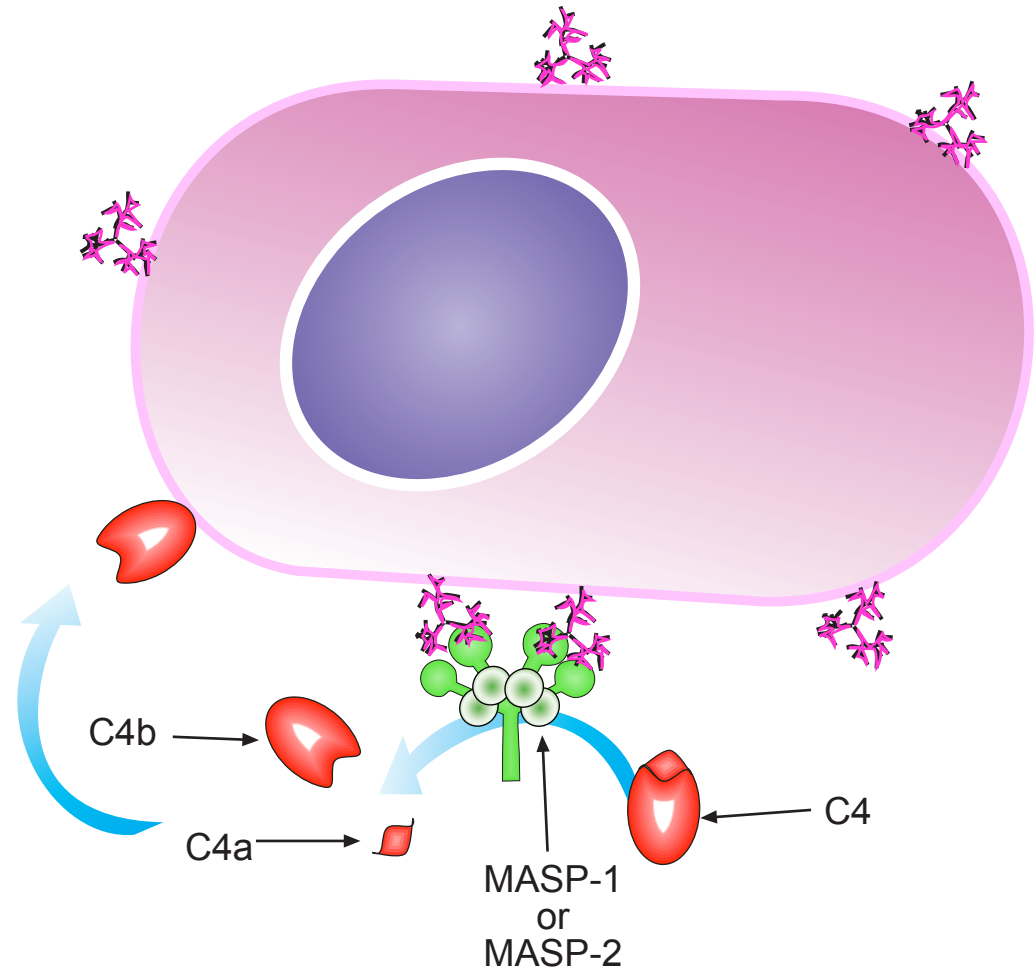
Lectin complement pathway

NEXT 

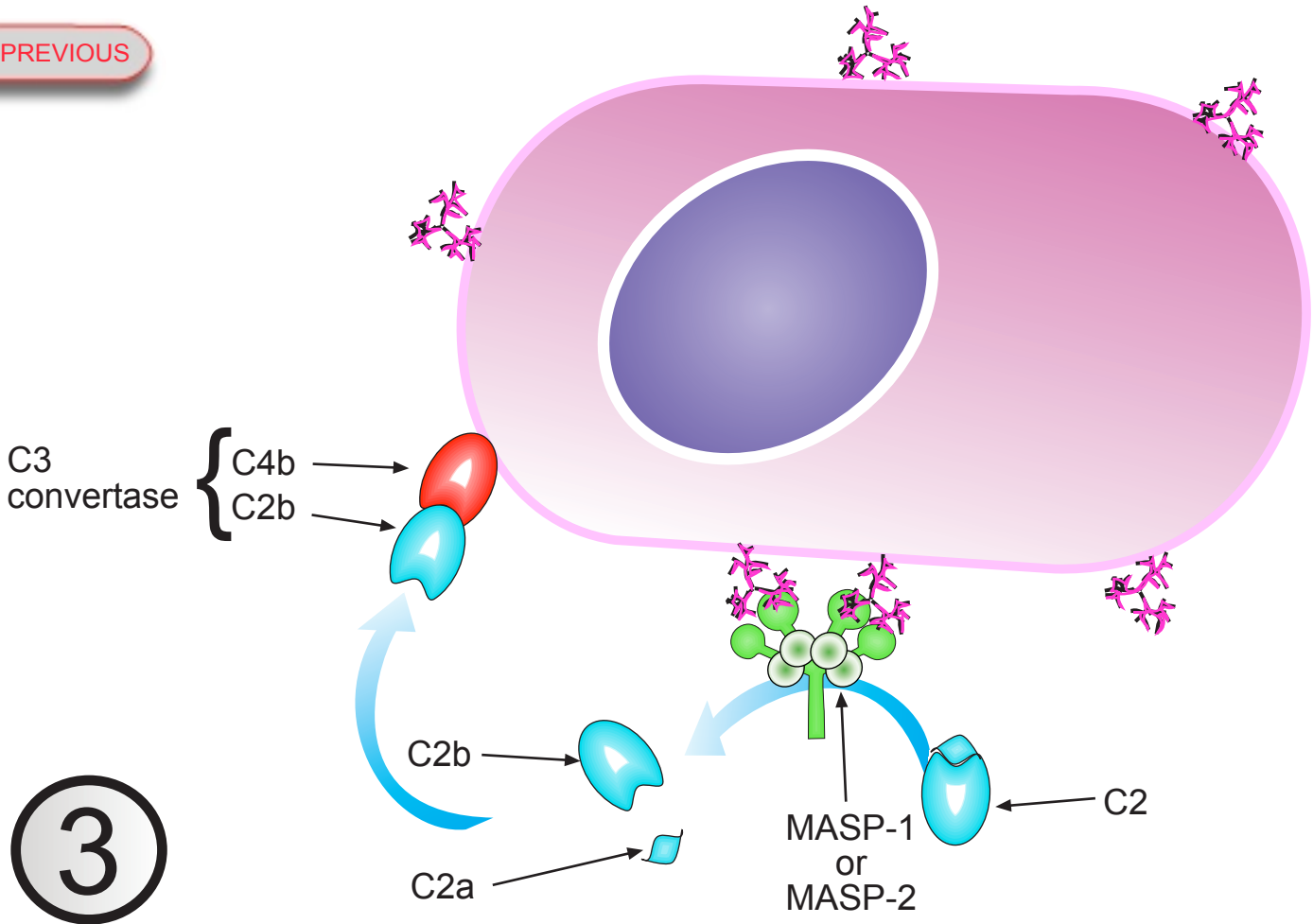


The lectin complement pathway is initiated by recognition of specific carbohydrate molecules on the cell surface by mannose-binding lectin (MBL). Binding of MBL activates the enzyme activity of MBL-associated serine protease-1 or -2 (MASP-1 or MASP-2).

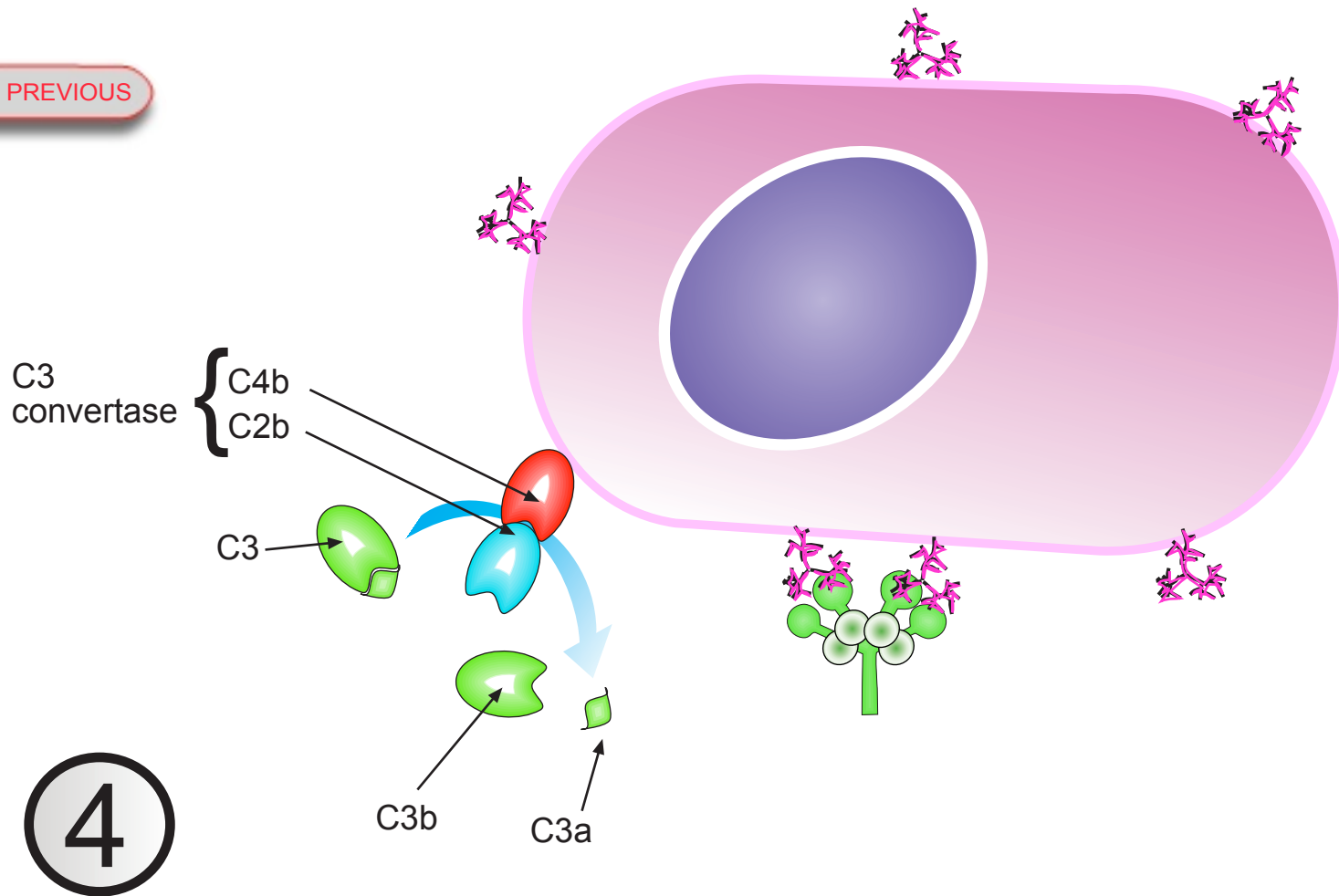
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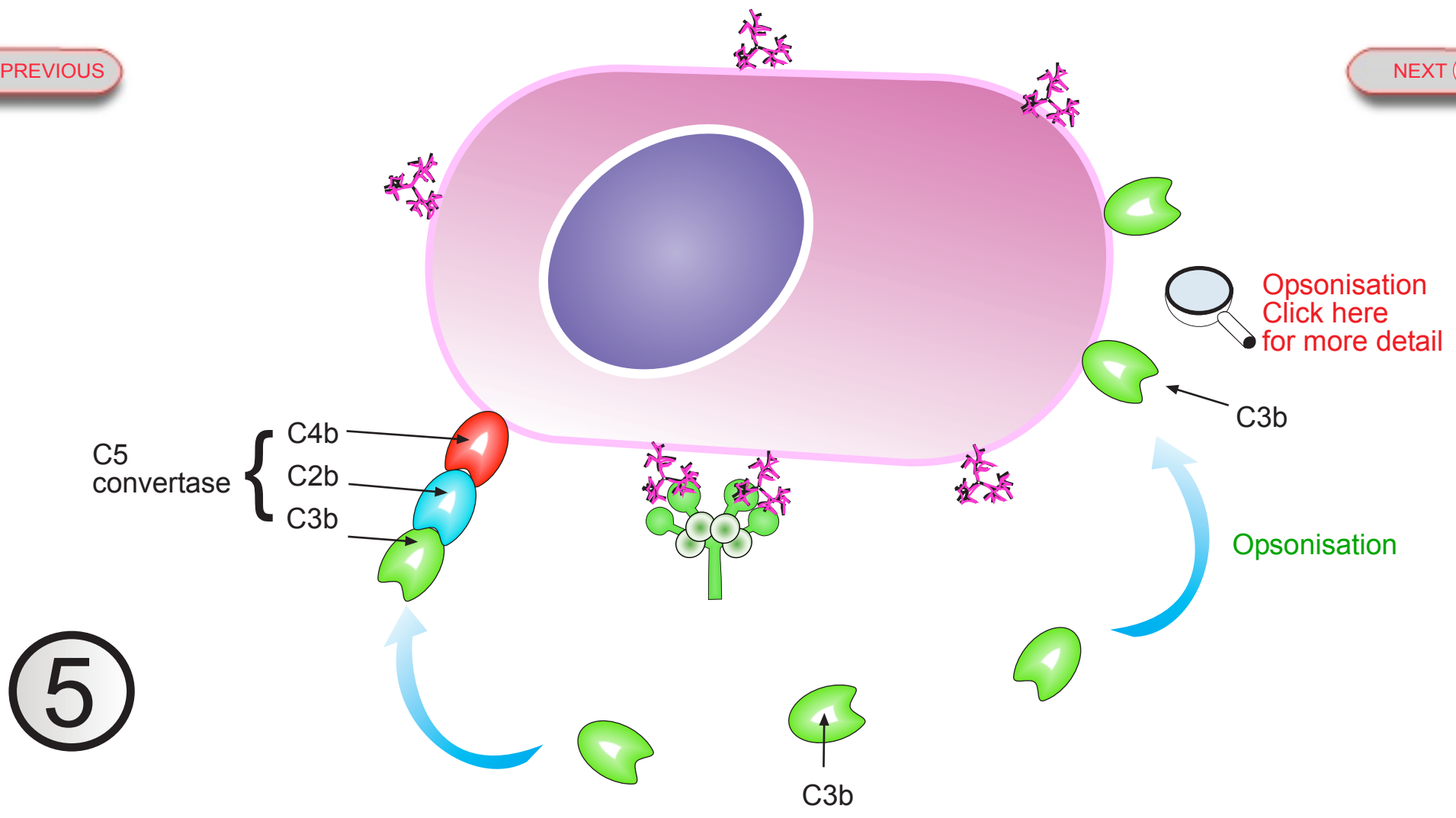
Activated MASP-1 or MASP-2 cleaves C4 complement protein into C4a that is released and C4b that binds to the cell surface. C4a functions as an anaphylatoxin that stimulates inflammation.



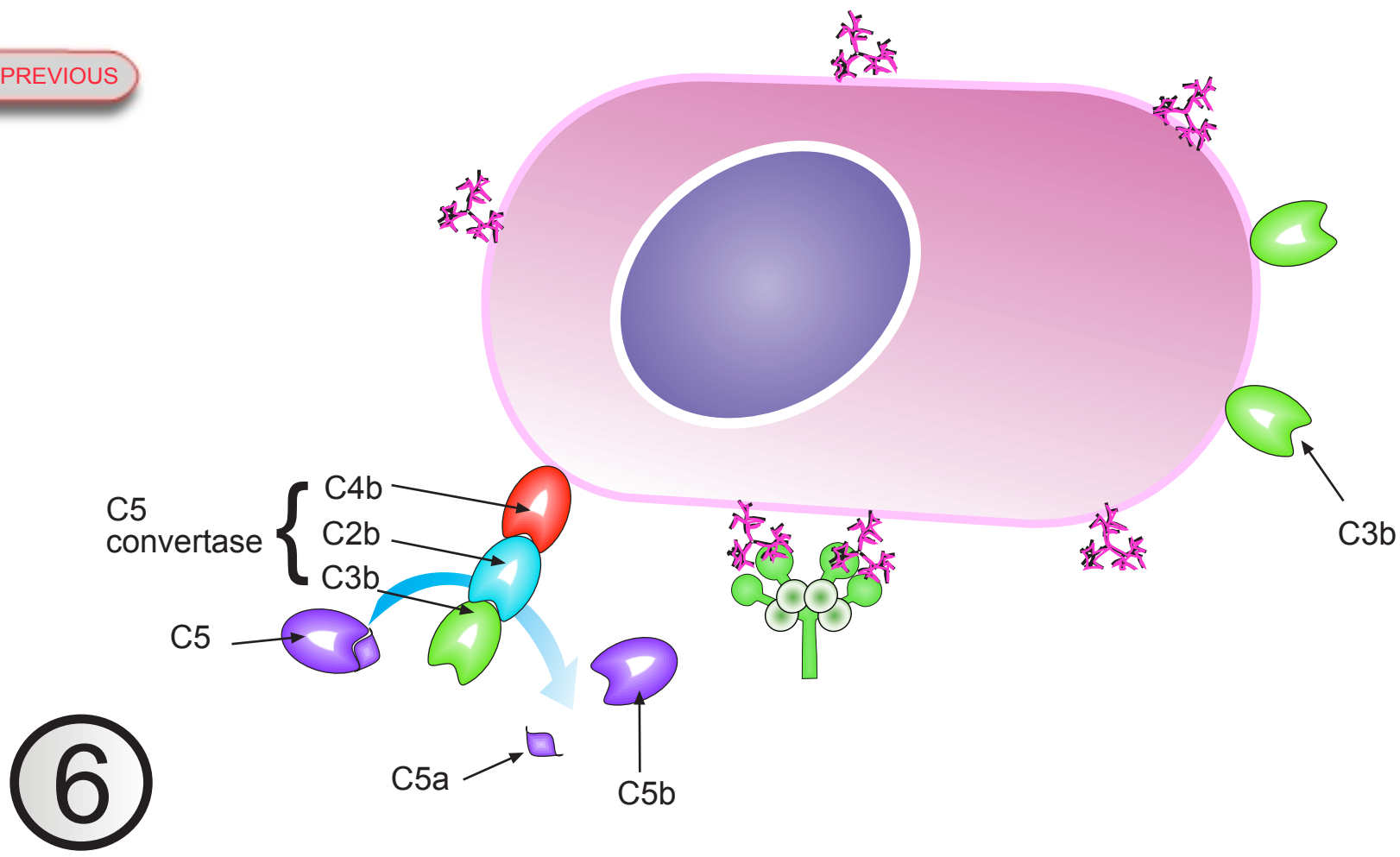
Activated MASP-1 or MASP-2 also cleaves C2 complement protein into C2a that is released and C2b that associates with C4b to constitute the C3 convertase enzyme system.



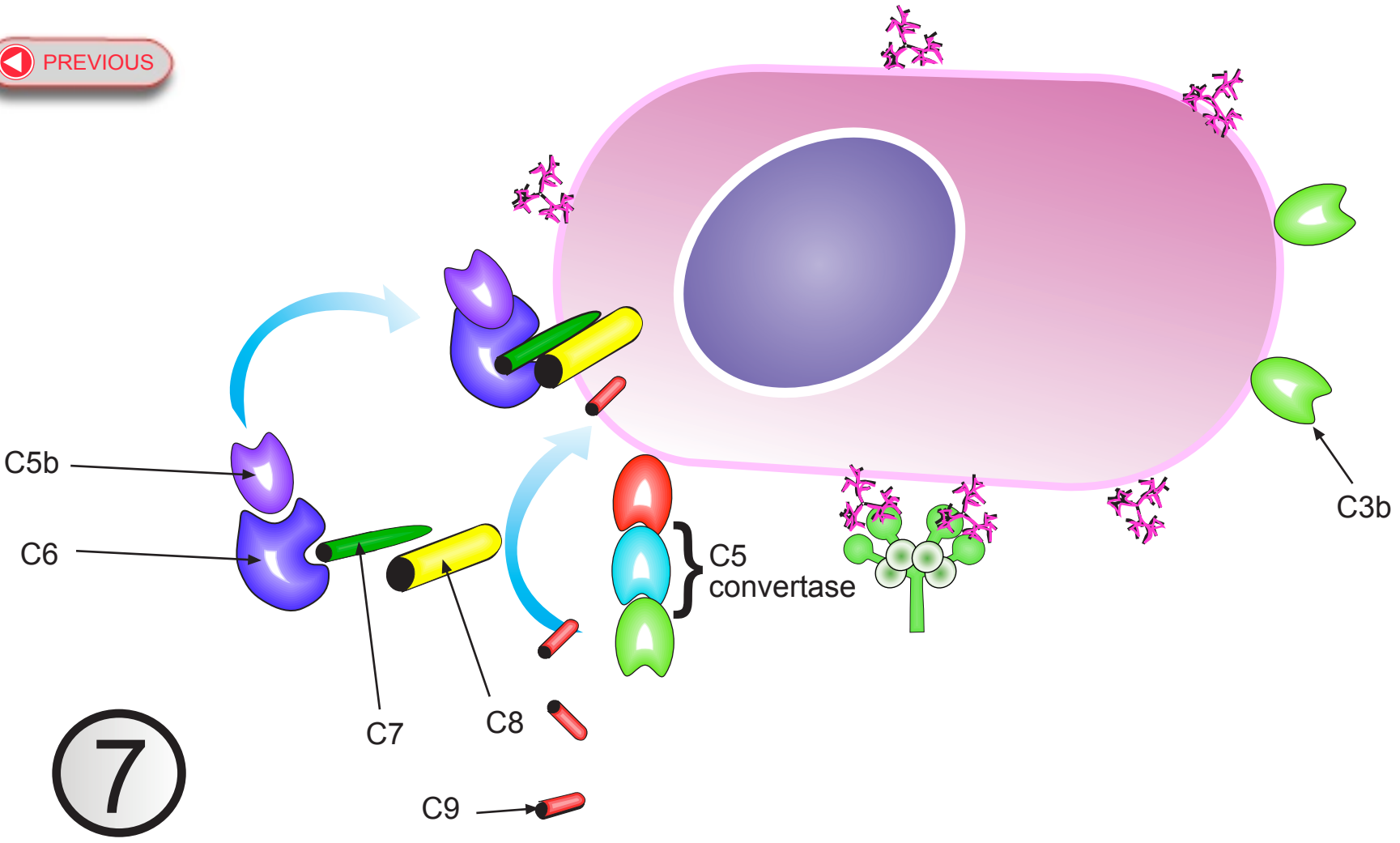
The C3 convertase cleaves C3 complement protein into C3a that is released and C3b that is required to constitute the C5 convertase enzyme system and also functions as an opsonin.



C3b associates with 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 for 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.

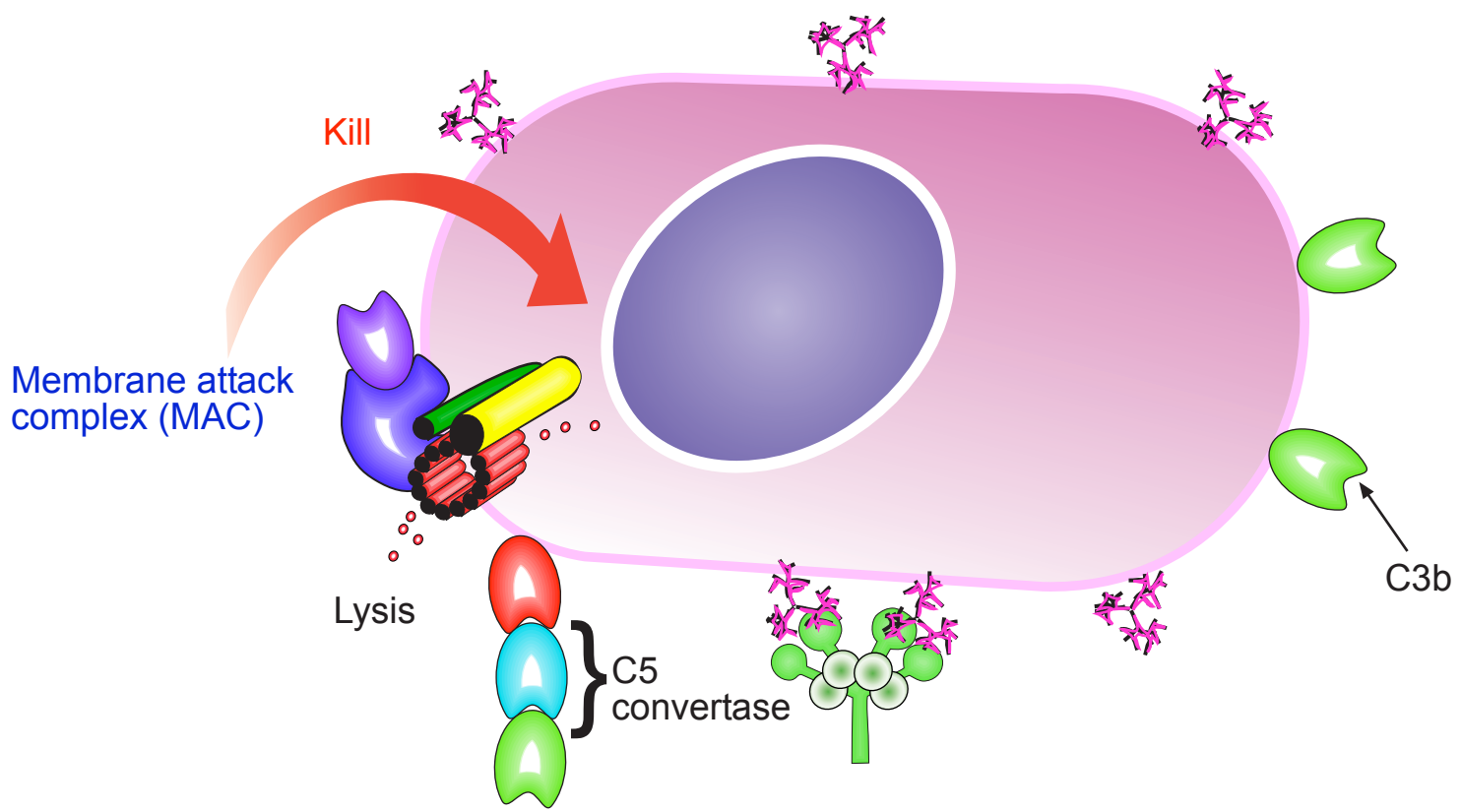


The C5 convertase cleaves C5 complement protein into C5a that is released and C5b that recruits additional complement proteins involved in the formation of the membrane attack complex (MAC). C5a functions as anaphylatoxin that stimulates inflammation.



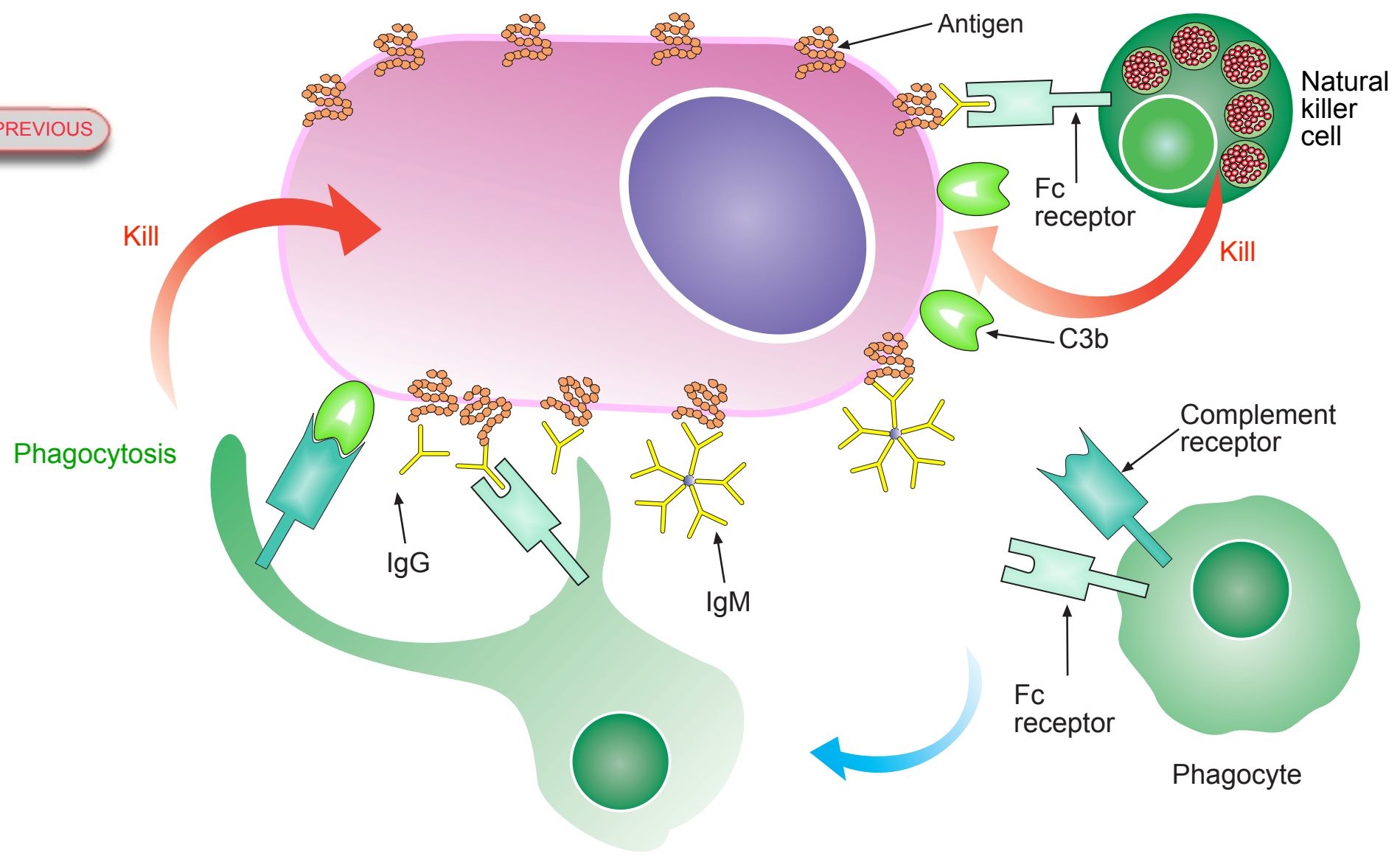
7

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 group of complement proteins C5b-C9 is known as the membrane attack complex (MAC). In addition, cell surface bound C3b enhances detection by phagocytes expressing complement receptors.



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.