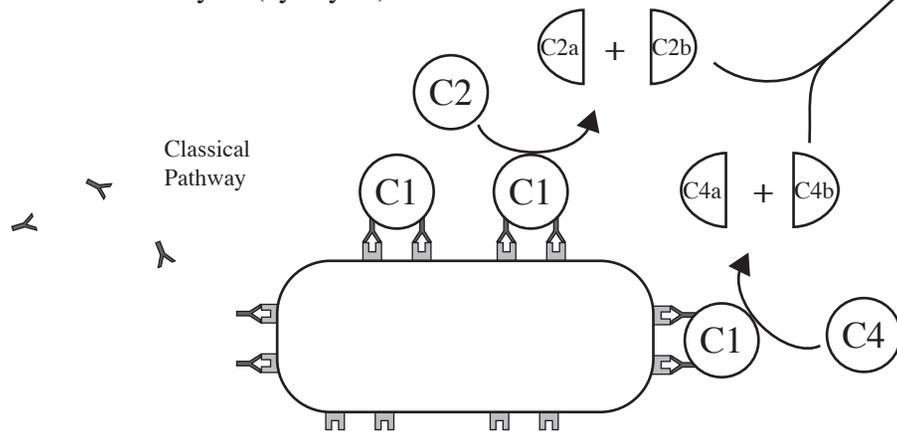


Complement System

Classical Pathways

1. Antibodies () bind to antigens ()
2. C1 binds to antigen-antibody complex ()
3. C1 splits C2 into C2a and C2b
4. C1 also splits C4 into C4a and C4b
5. C4b and C2b bond
6. C4b-C2b complex splits C3 into C3a and C3b
7. C3b does the following
 - a. C3b binds to bacteria and enhance phagocytosis
 - b. C3b splits C5 into C5a and C5b
8. Both C5b and C3a bind to mast cells ().
9. Mast cells secrete histamine (), enhance inflammation
10. C5b triggers formation of membrane attack complex (MAC) by C5, C6, C7, C8, and C9 ()
11. Bacterial lysis (cytolysis) occurs.



Alternate Pathways

1. Polysaccharides () on some bacteria interact with specific protein factors (not shown) and C3b to split C3 into C3a and C3b
2. Cascade of complement interactions continue as above
3. Note that C1, C2, and C4 are not needed and bypassed

