

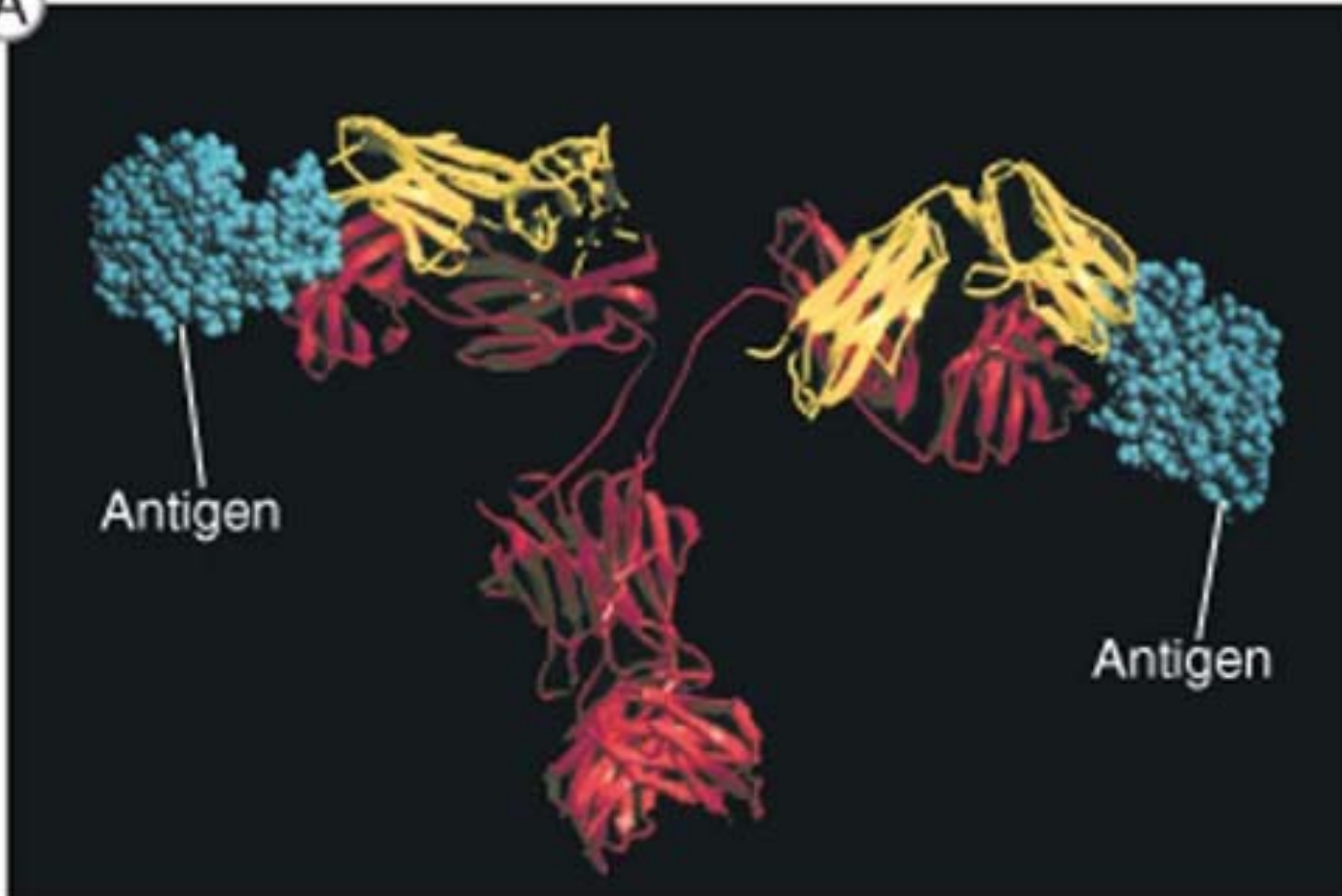
# **Antibodies**

# Antibody

An **antibody (Ab)**, also known as an **immunoglobulin (Ig)**, is a large, Y-shaped **protein** used by the **immune system** to identify and neutralize foreign objects such as **pathogenic bacteria** and **viruses**. The antibody recognizes a unique molecule of the pathogen, called an **antigen**. Each tip of the "Y" of an antibody contains a **paratope** (analogous to a lock) that is specific for one particular **epitope** (analogous to a key) on an antigen, allowing these two structures to bind together with precision.

# Antigen/antibody complex

A



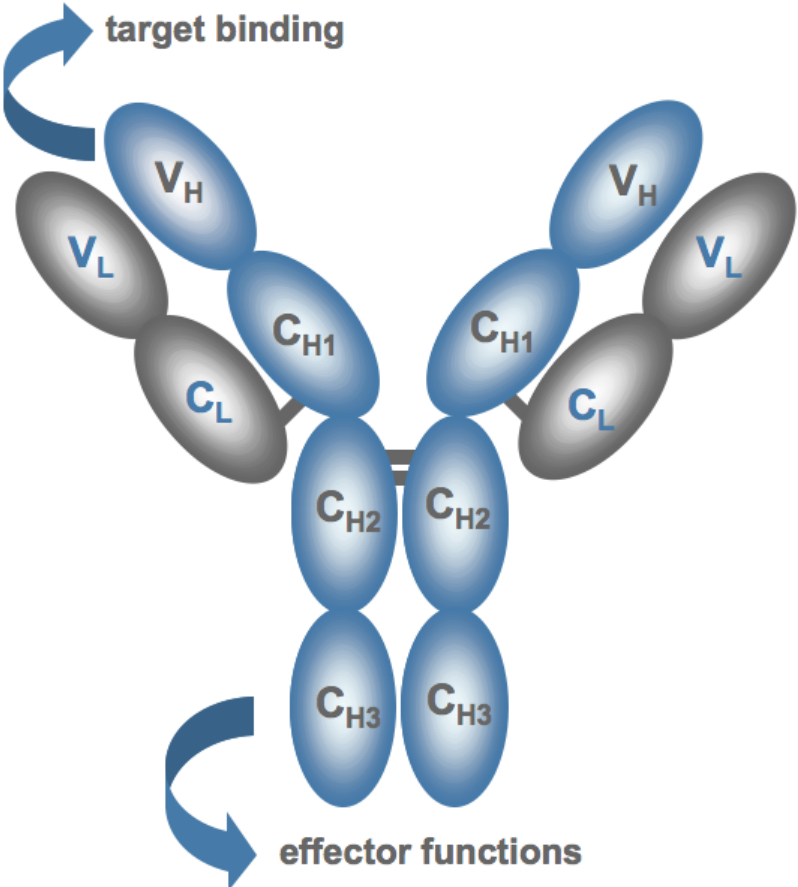
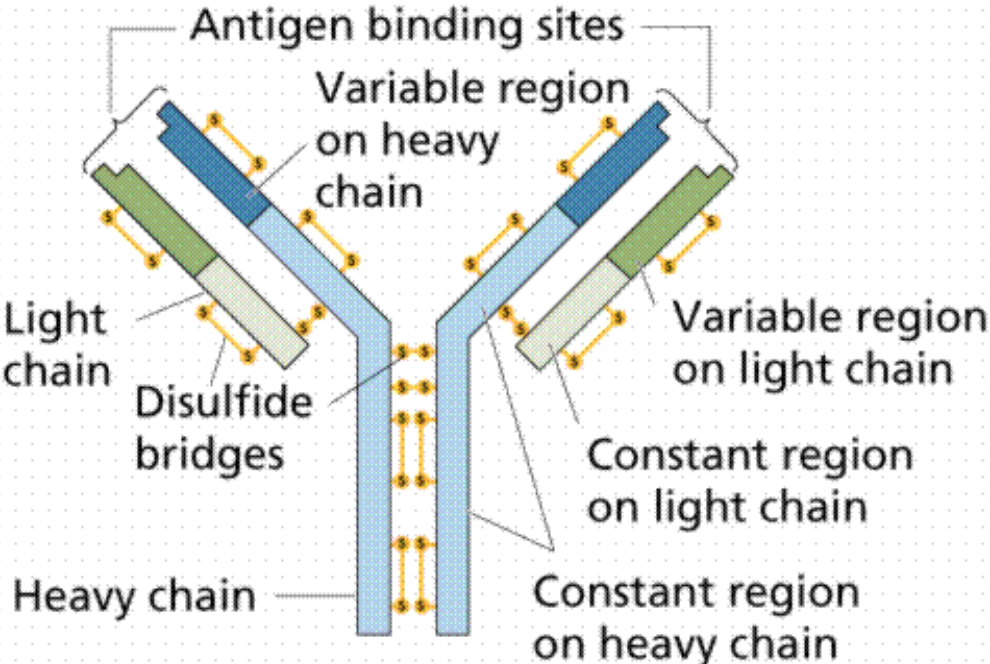
# Antibody

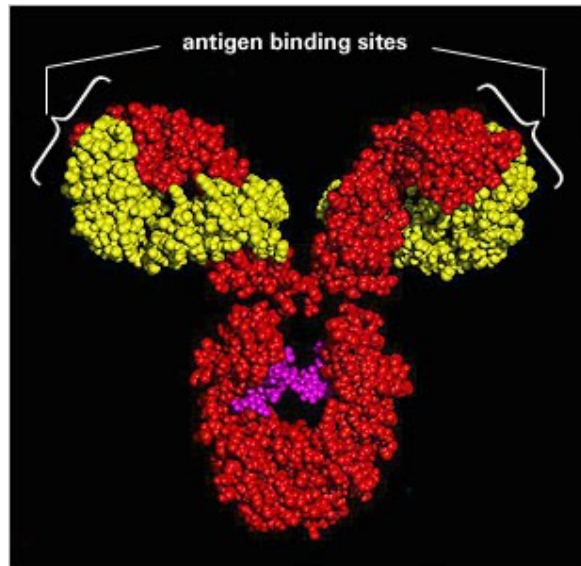
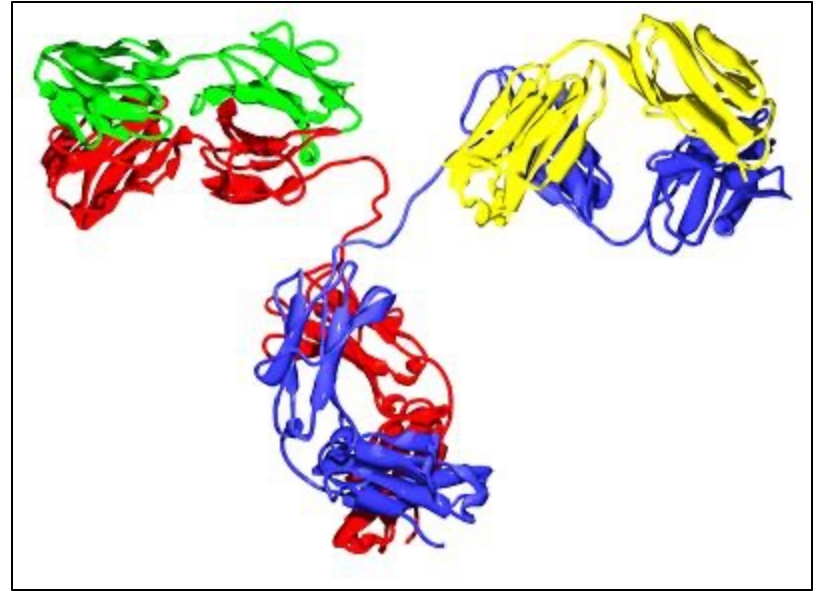
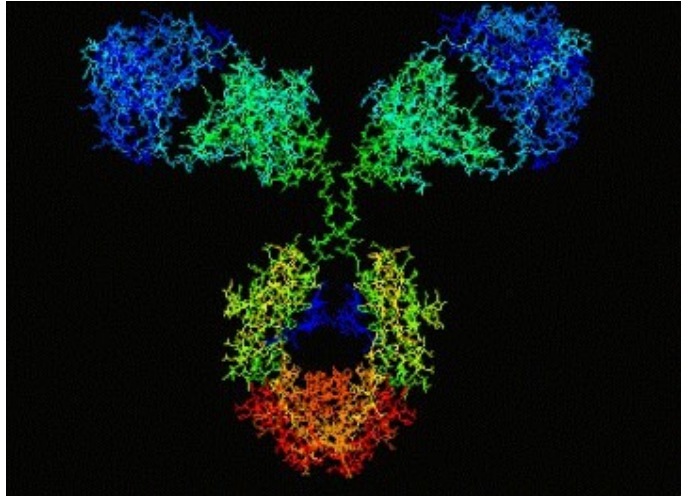
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# Antibody

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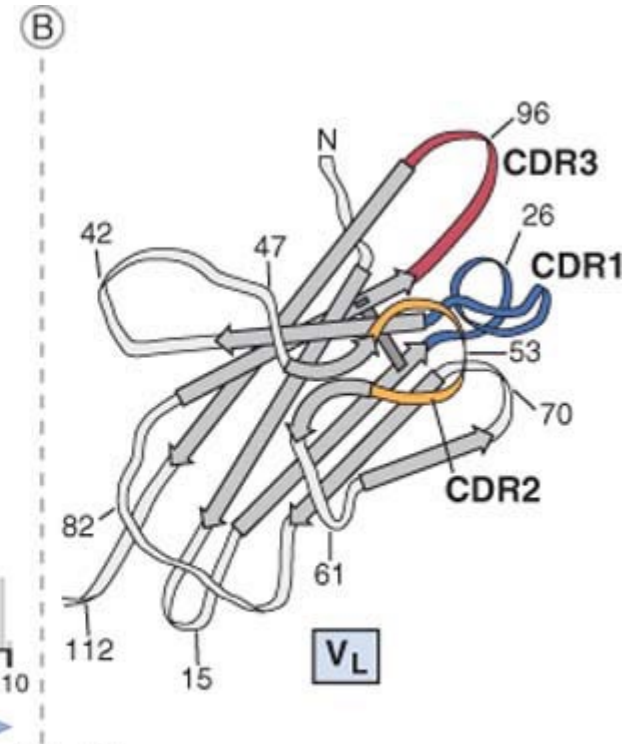
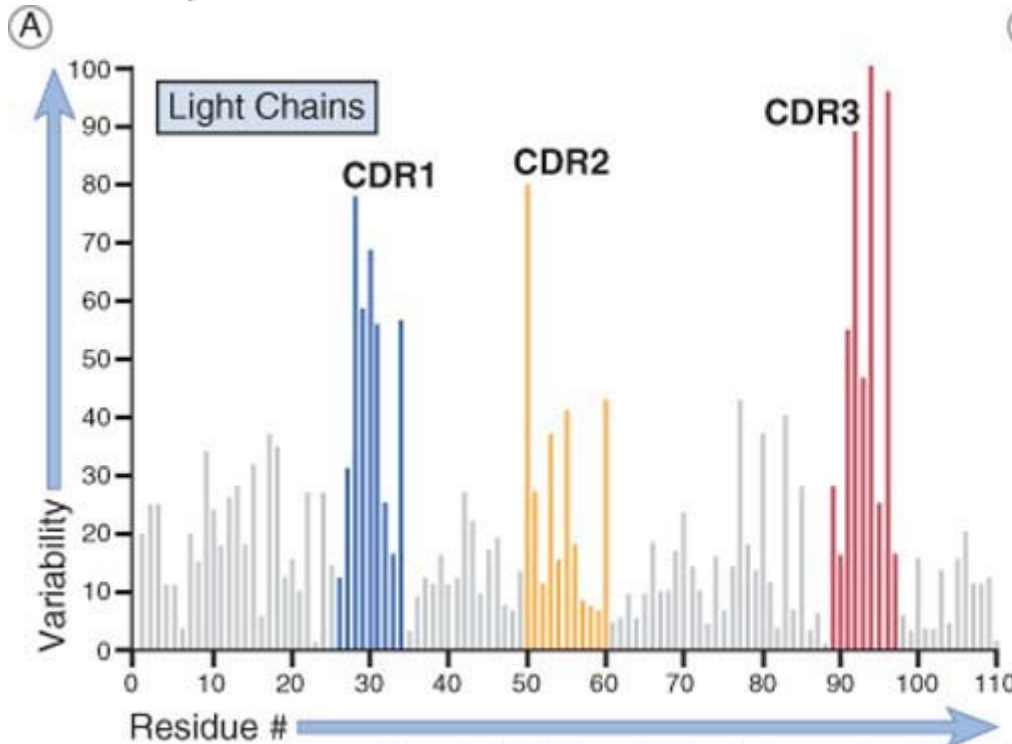
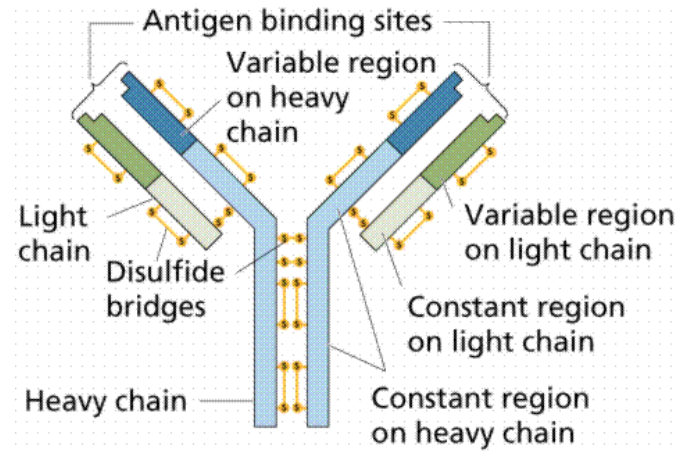
# Antibodies







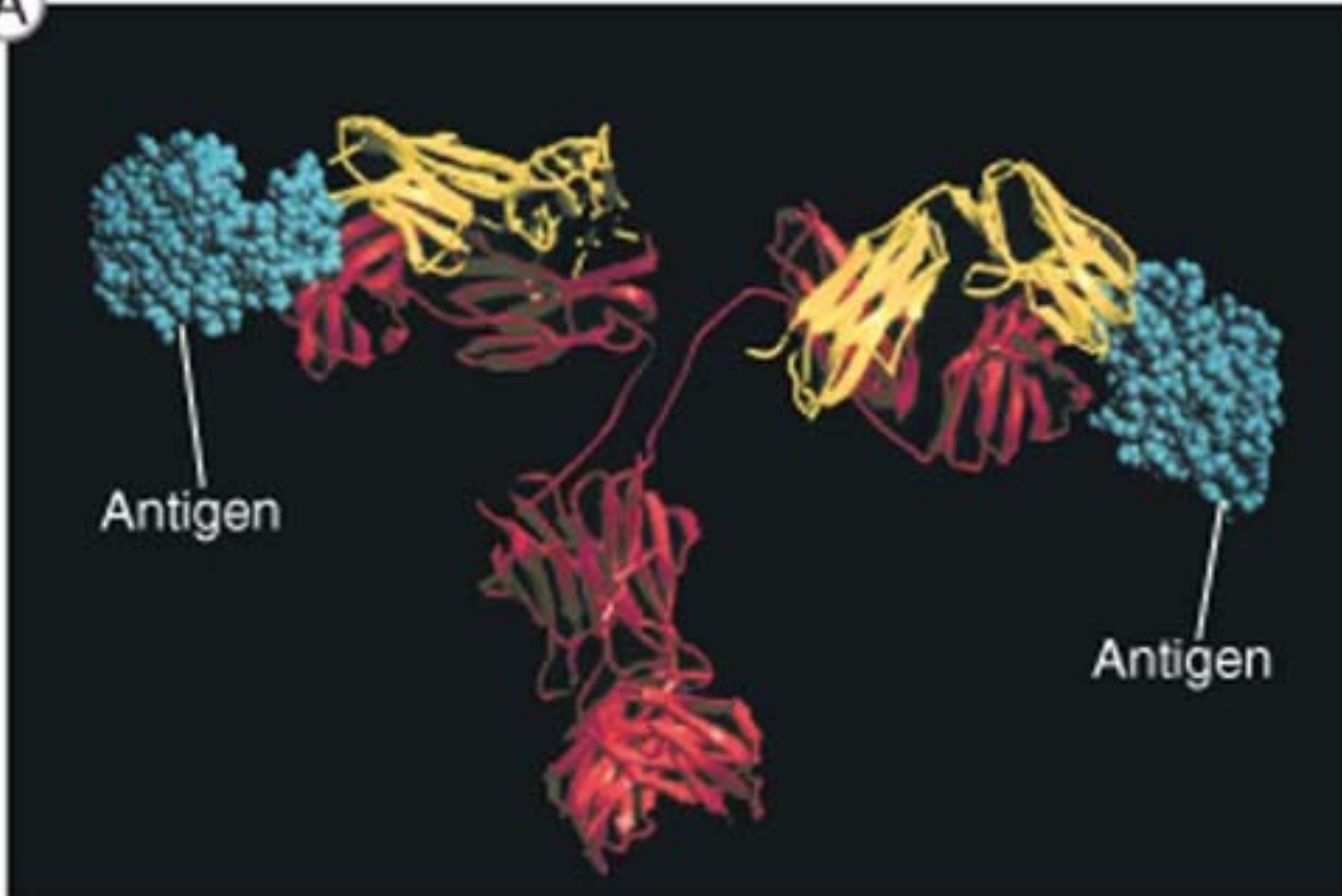
# Amino acid variability in antibody sequence



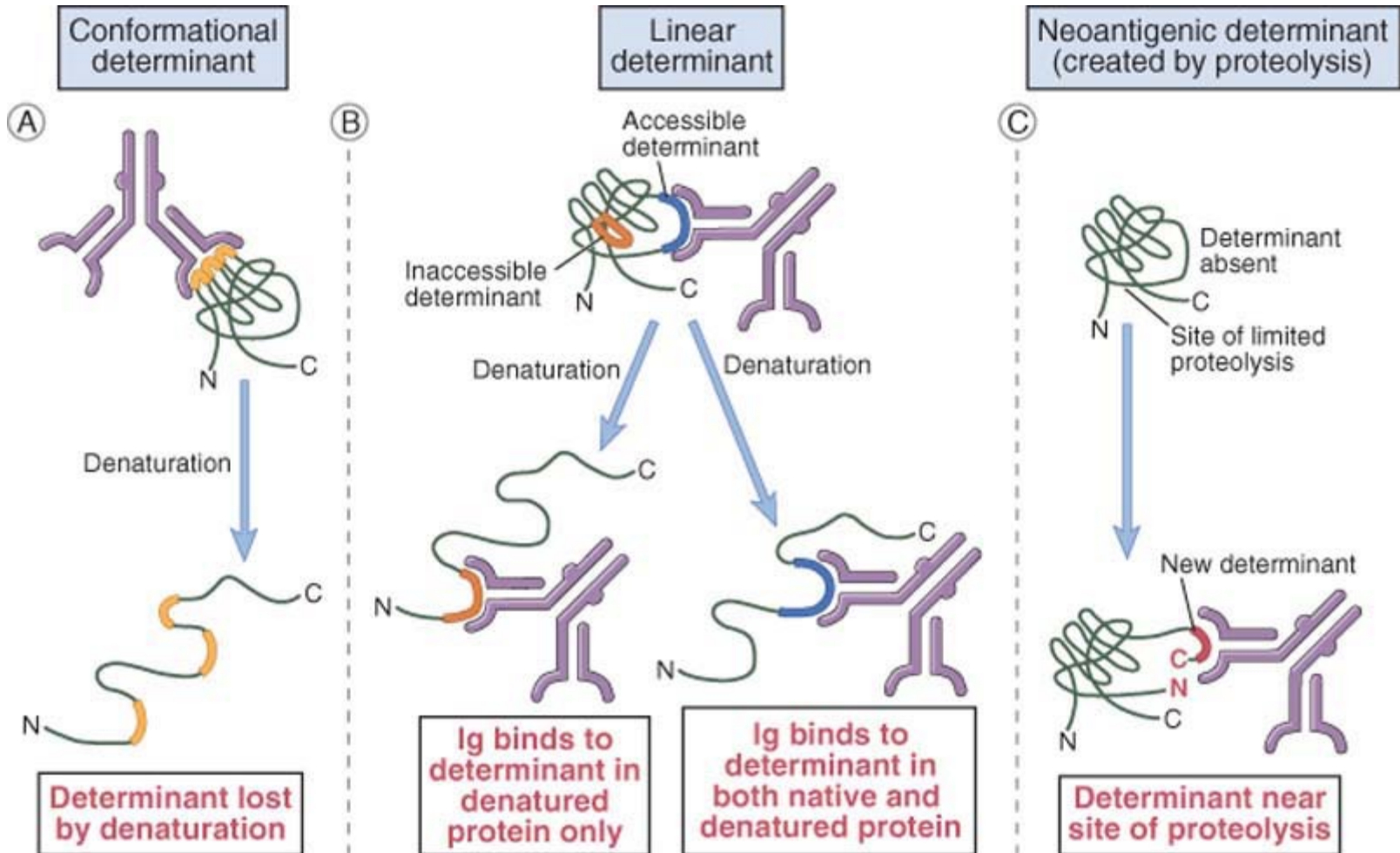


# Antigen/antibody complex

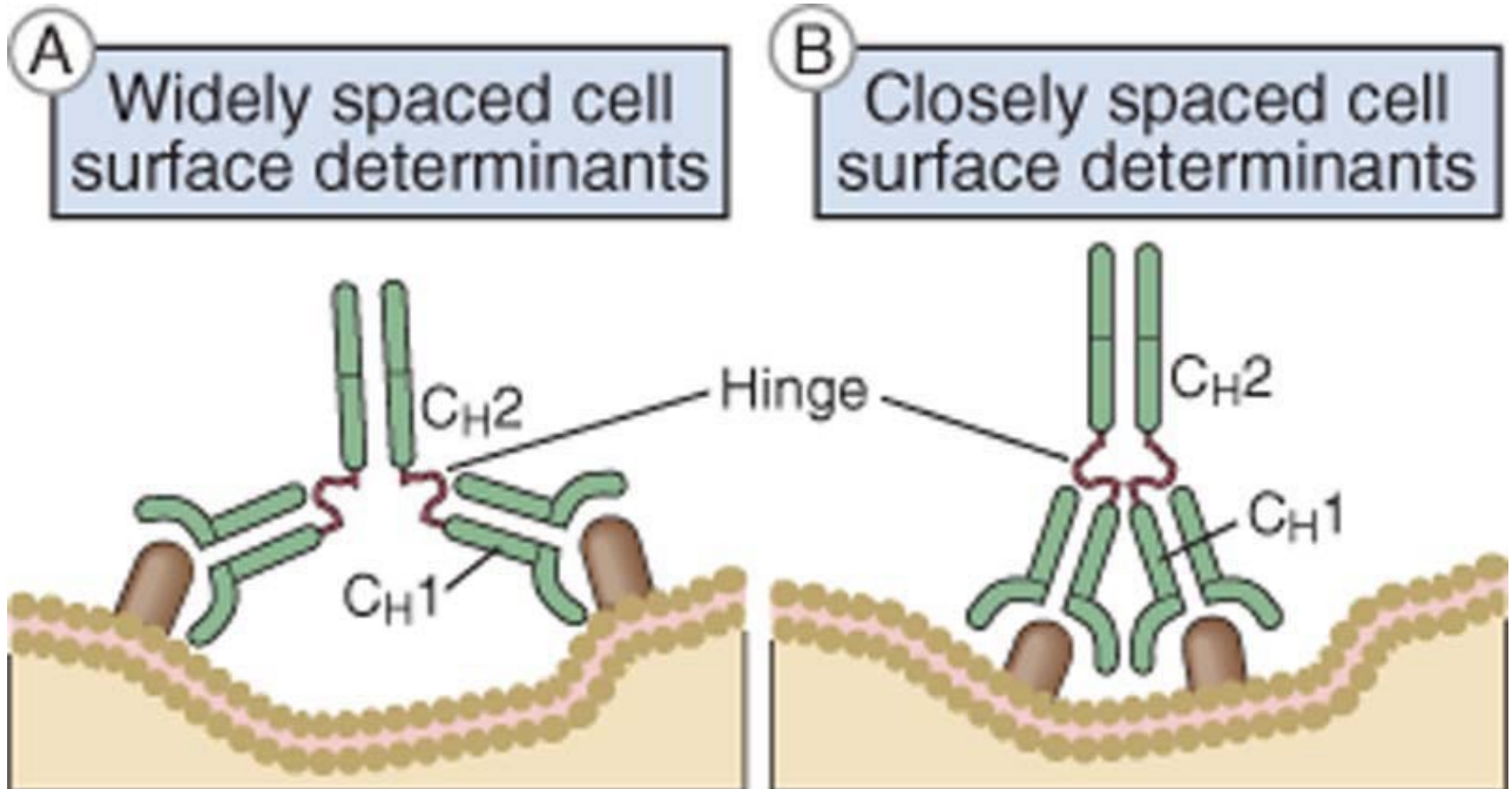
A



# Antigenic determinant (epitope)



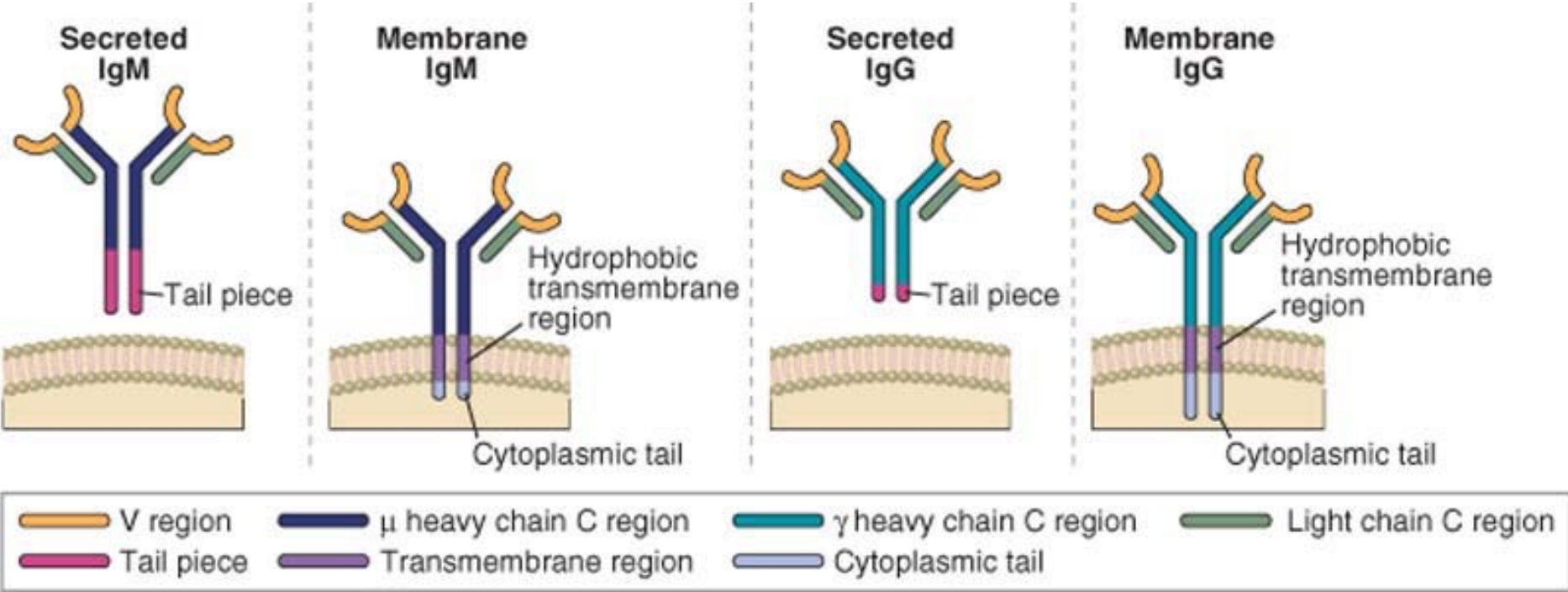
# Antigen/antibody complex on cell membrane



Abbas et al: Cellular and Molecular Immunology, Updated 6th Edition.  
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Type	Subtype	Serum concentration (mg/ml)	Serum Half-life (days)	Secreted form
IgA	1,2	3,5	6	<p>IgA (dimer) Monomer, dimer, trimer</p> <p>The diagram illustrates the structure of IgA. It shows a dimeric form consisting of two heavy chains (Cα1 and Cα2) and one J chain. The chains are connected by disulfide bonds. The J chain is shown as a single chain connecting the two heavy chains.</p>
IgD	-	-	3	-
IgE	-	0,05	2	<p>IgE Monomer</p> <p>The diagram illustrates the structure of IgE. It shows a monomeric form consisting of four heavy chains (Cε1, Cε2, Cε3, Cε4) and two light chains. The chains are connected by disulfide bonds.</p>
IgG	1-4	13,5	23	<p>IgG1 Monomer</p> <p>The diagram illustrates the structure of IgG1. It shows a monomeric form consisting of two heavy chains (Cγ1, Cγ2, Cγ3) and two light chains (VH, VL, CH, CL). The chains are connected by disulfide bonds.</p>
IgM	-	1,5	5	<p>IgM Pentamers, hexamers</p> <p>The diagram illustrates the structure of IgM. It shows a pentameric form consisting of five heavy chains (Cμ1, Cμ2, Cμ3, Cμ4) and one J chain. The chains are connected by disulfide bonds.</p>

# secreted and membrane antibodies



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