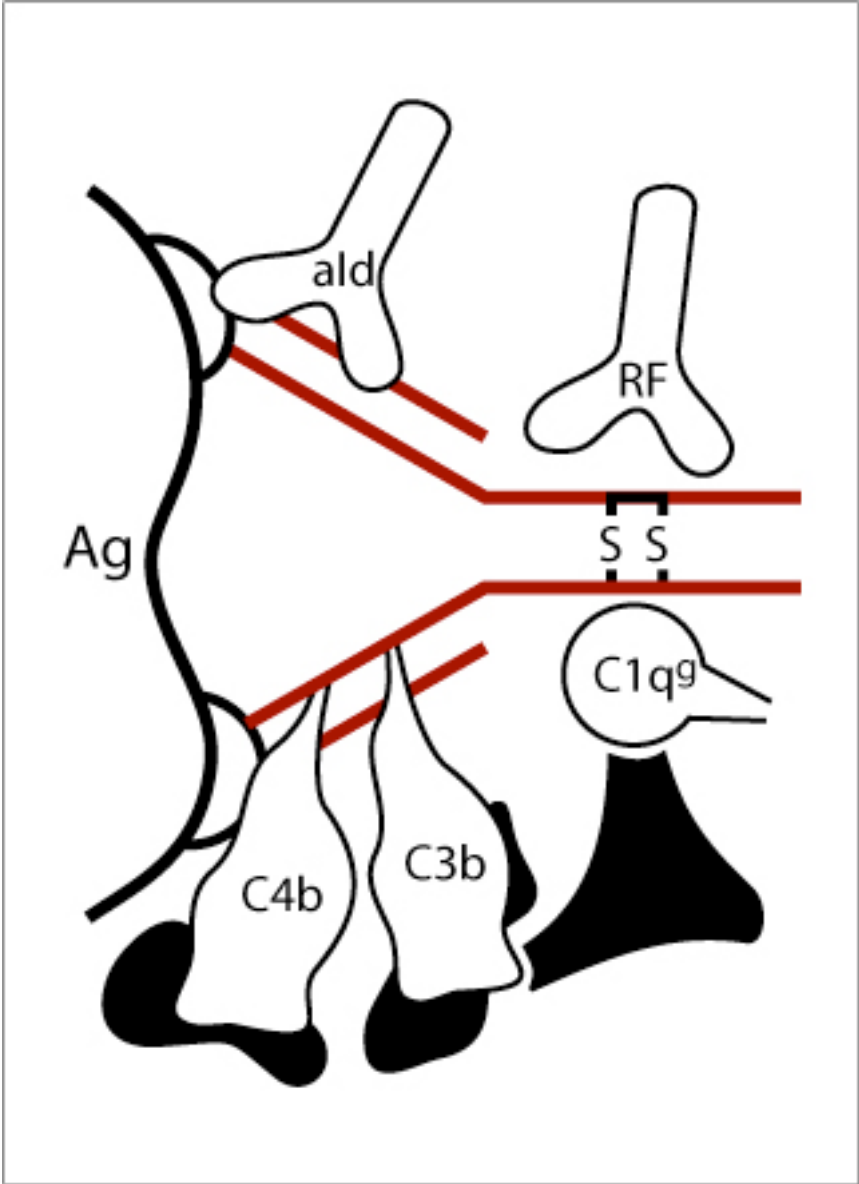


## **Antibody**

The IgM class of Immunoglobulin is important for antigen defense in an early phase of antigen removal. Naturally occurring antibodies, many of them preformed IgM, are vanguards of humoral immune defense. Hence, in chronic immune complex diseases, IgM do play a minor role the major part being taken over by IgG with their four subclasses IgG1, IgG2, IgG3 & IgG4. Depending on the type of the antigen, our immune system synthesizes the highly specific sustained type of antibody which now will deal with antigenic invasion as appropriate. In this game, the epitope specificity is not the only criterion, but also the way it is presented to the antigen-recognizing apparatus: the surrounding of the epitope. The epitope might be small, low-molecular weight, soluble thus without surrounding, or is fixed to a cell surface with an environment, a so called paratope. Antigenic enhancers exist, termed adjuvants and one must be mindful to see the responding apparatus as a multifaceted system including the cellular immunity with monocytes/macrophages, dendritic cells, as well as T- and B-cells. In contrast to T-cell independent antigens, B-lymphocytes use for their response instruction by T—helpercells (CD4 cells) to achieve their fabulous antibody synthesis rate achieving if necessary 2000 antibody molecules per second per cell. This performance is rewarded by the longest half-life of a serum protein known: IgG molecules if they are not suicidally used for immediate antigen removal live 21 days (subclass IgG3: 7 days), which is even longer than the 19 days half-life time of albumin.



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