Globulins Encyclopedia Article

Globulins

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Globulins

Globulins are immune molecules that are produced by the **immune system** in response to invasion of the body of agents that are perceived by the system as being foreign. Some immune globulins are also known as antibodies. Examples of **microorganisms** that stimulate globulin production are **bacteria**, **viruses**, molds, and **parasites**.

The production of globulins is triggered by the presence of the foreign material (antigen). Through an intricately coordinated series of events, the immune system responds to the presence of an antigen by the production of a corresponding globulin. There are three divisions of globulins, based on the movement of the molecules through a gel under the influence of an electric current (in other words, based on their size and their charge character). The three types are alpha, beta, and gamma globulins.

Alpha globulins are manufactured mainly in the liver. There are a number of so-called alpha-1 and alpha-2 globulins. The functions of these globulins includes the inhibition of an enzyme that digests protein, an inhibitor of two compounds vital in the clumping (coagulation) of blood, and a protein that can transport the element copper.

Alpha and beta globulins function as **enzymes** and proteins that transport compounds in the body. Gamma globulins act as the **antibody** defense against antigen invasion.

Beta globulins are also manufactured predominantly in the liver. Akin to the alpha type globulins, there are beta-1 and beta-2 globulins. Examples of beta globulins include a protein that binds iron in the body, factors involved with the immune targeting of foreign material for immune destruction, and a species of immunoglobulin antibody termed IgM.

Gamma globulins are manufactured in cells of the immune system known as lymphocytes and plasma cells. These globulins, which are known as IgM, IgA, and IgG, represent antibodies. Depending on the nature of the invading antigen, a specific immun globulin will be produced in great numbers by a specific lymphocyte or plasma cell. Infection with a different antigen will stimulate the production of a different immune globulin. As the infection eases, the production of the immun globulin will decrease.

The quantities of the various globulins in the blood can be diagnostic of malfunctions in the body or specific diseases. Examples of maladies that affect the globulin levels are chronic microbial infections, liver disease, **autoimmune disorders**, leukemias, and rheumatoid arthritis.