

## **Chicken Cytokines Functions as Bioreactors**

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### **Abstract**

Cytokines are proteins excreted by cells that play an important role in the activation and regulation of other cells and tissues during inflammation and immune responses. They act as humeral regulators which modulate the functions of individual cells. Unlike hormones, cytokines are produced by cells which are not organized in specific glands which act to affect biological cases such as inflammations.

The biological activities of cytokines are mediated by specific membrane receptors which can be expressed on substantially all cell types. The mechanism by which receptor occupation by cytokines results in the generation of a signal through the receptor is not completely understood. But it is frequently possible to observe the order of cytokine actions with some early cytokines preactivating cells so that they can then respond to later acting cytokines.

All cytokines act through receptors on the surface of the target cells, which may lead to the activation or down regulation of the cell's activity. The main function of cytokines is in the activation and regulation of the cells of immune system. Cytokines are produced by variety of cell types, depending on the cell's function. For instance, epithelial cells may produce cytokines involved in the generation of inflammation, the so-called proinflammatory cytokines such as interleukin-6 (IL-6) or IL-8, whereas macrophages may produce both proinflammatory cytokines and cytokines involved in the activation and regulation of T helper lymphocytes (Th) in the development of an adaptive immune response. Cytokines have been classified into a number of groups based on their activity and the cells they are produced by or act upon. These groups include interleukins (IL), interferons (IFN), tumour necrosis factors (TNF), transforming growth factors (TGF), migratory inhibitory factors and the smaller chemokines. It is also possible to broadly categorise cytokines on their activity and this may be more beneficial in understanding the nature of their general activity. The use of molecular techniques is enabling the role of cytokines in the pathogenesis of diseases. This will lead to further understanding of the role the immune system, and in particular cytokines.

In this review article the types and functions of chicken cytokines will be accurately displayed.

**Key words:** *Chicken, Cytokines, Inflammations, Cell receptors, Immunity.*