

## **SOVEREIGN IMMUNITY - BASE NEW BIOTECHNOLOGY**

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Recently found that cells of higher mammals, including humans, have specific genes coding for intracellular autonomous functioning protection factors. These proteins are carried out effectively protect cells from viruses, but it does not fit into the classical schemes of the innate and adaptive immune system.

Already it is identified 28 cell protective factors affecting the different stages of the HIV (human immunodeficiency virus) life cycle. Scientists propose to call this first line of defense against viral aggression sovereign immunity.

Researchers can assume that sovereign immunity is not yet identified part of inducible innate immune system, as in some tissues launch gene expression factors sovereign immunity still depends on the modulating effects of type I interferon.

Inhibition of interferon signaling pathways or Toll-receptor activation by cellular factors IRF (interferon-gamma-induced interferon regulatory factor), STAT (signal transducers and activators of transcription) proteins or NFκB (nuclear factor-κB) proteins – this is a common mechanism by which viruses escape from the action of mammalian innate immunity.

In biology, immunity is the state of having sufficient biological defences to avoid infection, disease, or other unwanted biological invasion. It is the capability of the body to resist harmful microbes from entering it.

Immunity involves both specific and non-specific components. The non-specific components act either as barriers or as eliminators of wide range of pathogens irrespective of antigenic specificity. Other components of the immune system adapt themselves to each new disease encountered and are able to generate pathogen-specific immunity.

In recent years opened a new form of immunity, a new branch of innate immunity – sovereign immunity, which is responsible for an autonomous, private cellular immunity, aimed primarily at the protection against retroviruses.

Modulation factors sovereign immunity using biotechnological methods, off viral genes antagonists using antisense and si-RNA (small interfering ribonucleic acid) will develop new approaches to combat viral infections.

New knowledge about the mechanisms of immune protection may be the basis for developing a new generation of biotech products.