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## Poxviruses and immune evasion

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### Abstract

Large DNA viruses defend against hostile assault executed by the host immune system by producing an array of gene products that systematically sabotage key components of the inflammatory response. Poxviruses target many of the primary mediators of innate immunity including interferons, tumor necrosis factors, interleukins, complement, and chemokines. Poxviruses also manipulate a variety of intracellular signal transduction pathways such as the apoptotic response. Many of the poxvirus genes that disrupt these pathways have been hijacked directly from the host immune system, while others have demonstrated no clear resemblance to any known host genes. Nonetheless, the immunological targets and the diversity of strategies used by poxviruses to disrupt these host pathways have provided important insights into diverse aspects of immunology, virology, and inflammation. Furthermore, because of their anti-inflammatory nature, many of these poxvirus proteins hold promise as potential therapeutic agents for acute or chronic inflammatory conditions.

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