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Journal of Hospital Pharmacy

An Official Publication of Bureau for Health & Education Status Upliftment
(Constitutionally Entitled As Health-Education, Bureau)

JOHP

The Role of Interferon in Modern Medicine: Clinical Applications and Therapeutic Potential

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Abstract:

Interferon (IFN) is an antiviral substance that was discovered in 1957. Interferons are multifunctional cytokines widely used in clinical settings as an anti-viral drug. Interferon (IFN)- α and - β are produced by virus-infected cells; IFN- γ is produced as a primary response of T lymphocytes to mitogenic stimulation. Any type of IFN is a (glyco) protein with a molecular weight of about 20,000 kDa. IFNs act by binding to cell surface receptors and triggering activation of IFN-responsive genes, probably via specific base sequences located in the 5' non-coding region of such genes, resulting in changes in cell function. The advance in the basic research of IFN has revealed the action mechanism of its antiviral effect at a molecular level and provided wide clinical applications. IFN is known to have various biological activities including antiviral effects, anti-tumor effect, Hepatitis, Multiple sclerosis and Granulomatous diseases etc. IFN is considered to exert its action by not only directly inhibiting viral proliferation, but also stimulating cytotoxic T cells, natural killer cells, and macrophages.

Key words: Interferon, Types of IFN, Clinical Application

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Website: <http://www.journalofhospitalpharmacy.in> Quick Response Code:



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