

## IFI16 Protein, Human (His, Strep)

Cat. No.:	HY-P701997
Synonyms:	IFI16; Gamma-interferon-inducible protein 16; Ili-16; Interferon-inducible myeloid differentiation transcriptional activator
Species:	Human
Source:	E. coli
Accession:	Q16666 (M1-F729)
Gene ID:	3428
Molecular Weight:	

### PROPERTIES

Appearance	Solution.
Formulation	Supplied as a 0.22 µm filtered solution of 50 mM Tris-HCl, pH7.5, 200 mM NaCl, 20% glycerol.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	Please use rapid thawing with running water to thaw the protein.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

### DESCRIPTION

#### Background

The IFI16 Protein showcases a wide range of functions, binding preferentially to supercoiled DNA and cruciform DNA structures. Its involvement in transcriptional regulation, potentially as a transcriptional repressor, hints at a role in regulating hematopoietic differentiation through the activation of unknown target genes. IFI16 exerts control over cellular proliferation by modulating the functions of key cell cycle regulatory factors such as p53/TP53 and the retinoblastoma protein. Furthermore, it plays a role in TP53-mediated transcriptional activation by enhancing TP53 sequence-specific DNA binding and influencing TP53 phosphorylation status. The protein is implicated in the energy-level-dependent activation of the ATM/AMPK/TP53 pathway, linked to the regulation of autophagy. IFI16's involvement in TP53-mediated cell death, senescence of prostate epithelial cells, and innate immune responses against viral dsDNA in the cytosol and, likely, the nucleus, is noteworthy. In the cytoplasm, it recruits TMEM173/STING, inducing IFN-beta production and demonstrating anti-inflammatory activity. An isoform of IFI16 specifically inhibits the AIM2 inflammasome, preventing dsDNA detection by AIM2 and interfering with AIM2-PYCARD/ASC interaction, thereby suppressing inflammasome assembly. This isoform also weakly induces type I interferon-beta (IFNβ) production via interaction with STING1. Additionally, IFI16 participates in the epigenetic regulation of ESR1 expression in breast cancer and interferes with the replication of herpesviruses, such as human cytomegalovirus (HCMV), by disrupting the recruitment of Sp1 family transcription factors to the promoter region. During human herpes simplex virus 1 (HHV-1) infection, IFI16 is necessary to activate the IRF3 signaling cascade, promoting the assembly of heterochromatin on herpesviral DNA and inhibiting viral immediate-early gene expression and replication.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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