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Recombinant Human Interferon–γ (IFN–γ)

Publication Number MAN0003600 **Revision Date** 03 May 2011

Catalog Number:	PHC4031	PHC4033
Quantity:	100 µg	1 mg
Lot Number:	See product label.	
Molecular Weight:	16.9 kDa	
Purity:	>95% as determined by SDS–PAGE analysis.	
Amino Acid Sequence:	QDPYVKEAEN LKKYFNAGHS DVADNGTLFL GILKNWKEES DRKIMQSQIV SFYFKLFKNF KDDQSIQKSV ETIKEDMNVK FFNSNKKKRD DFEKLTNYSV TDLNVQRKAI HELIQVMAEL SPAAKTGKRK RSQMLFQGRR ASQ	
Biological Activity:	ED_{50} range = 0.5–3.0 ng/mL (Specific Activity: 2.0×10^6–3.3×10^5 units/mg), determined by the dose dependent cytostasis of human WiDr cells. Optimal concentration for individual application should be determined by a dose response assay.	
Formulation:	Purified protein in 40 mM Tris pH 7.4, carrier free.	
Sterility:	Filtered prior to packaging through a 0.22 micron sterile filter.	
Endotoxin:	<0.1 ng/µg	
Production:	Recombinant human IFN–γ is produced in *E. coli* and purified via sequential chromatography.	
Suggested Working Dilutions:	The optimal concentration should be determined for each specific application.	
Storage:	Store at –80°C. Upon initial thawing, we recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. The contents should then be apportioned into working aliquots and stored at –80°C. Avoid repeated freeze/thaw cycles. Further dilutions should be made in low endotoxin medium or buffered solution with FBS or tissue culture grade BSA. Recombinant human IFN-γ should be kept as a solution in order to maintain full activity.	
Expiration Date:	Expires one year from date of receipt when stored as instructed.	
References:	Alderson, M.R., R.J. Armitage, T.W. Tough, and S.F. Ziegler (1994) Synergistic effects of IL-4 and either GM-CSF or IL-3 on the induction of CD23 expression by human monocytes: regulatory effects of IFN-alpha and IFN-gamma. Cytokine 6(4):407–413. Cao, H.J., H.S. Wang, Y. Zhang, H.Y. Lin, R.P. Phipps, and T.J. Smith (1998) Activation of human orbital fibroblasts through CD40 engagement results in a dramatic induction of hyaluronan synthesis and prostaglandin endoperoxide H synthase–2 expression. Insights into potential pathogenic mechanisms of thyroid-associated ophthalmopathy. J. Biol. Chem. 273 (45):29615–29625. Dovhey, S.E., N.S. Ghosh, and K.L. Wright (2000) Loss of interferon-γ inducibility of TAP1 and LMP2 in a renal cell carcinoma cell line. Cancer Research 60:5789–5796. Francisco, J.A., S.L. Gawlak, and C.B. Siegall (1997) Construction, expression, and characterization of BD1–G28–5 sFv, a single-chain anti-CD40 immunotoxin containing the ribosome-inactivating protein bryodin 1. J. Biol. Chem. 272(39):24165–24169. Jelinek, D.F., K.M. Aagaard-Tillery, B.K. Arendt, T. Arora, R.C. Tschumper, and J.J. Westendorf (1997) Differential human multiple myeloma cell line responsiveness to interferon-alpha. Analysis of transcription factor activation and interleukin 6 receptor expression J. Clin. Invest. 99(3):447–456. Kahlert, H., E. Grage-Griebenow, H. T. Stuwe, O. Cromwell, and H. Fiebig (2000) T cell reactivity with allergoids: Influence of the type of APC. J. Immunol. 165(4):1807–1815. Karanikas, V., L.A. Hwang, J. Pearson, C.S. Ong, V. Apostolopoulos, H. Vaughan, P.X. Xing, G. Jamieson, G. Pietersz, B. Tait, R. Broadbent, G. Thynne, and I.F. McKenzie (1997) Antibody and T cell responses of patients with adenocarcinoma immunized with mannan-MUC1 fusion protein. J. Clin. Invest. 100(11):2783–2792. Lin, H.Y., L.J. Martino, B.D. Wilcox, F.B. Davis, J.K. Gordinier, and P.J. Davis (1998) Potentiation by thyroid hormone of human IFN-gamma-induced HLA-DR expression. J. Immunol. 161(2):843–849.	

References, continued:	Liuzzo, G., A.N. Vallejo, S.L. Kopecky, R.L. Frye, D.R. Holmes, J.J. Goronzy, and C.M. Weyand (2001) Molecular fingerprint of interferon-gamma signaling in unstable angina. Circulation 103 (11):1509–1514. Loparev, V., J. Parsons, J. Knight, J. Fanelli Panus, C. Ray, R. Buller, D. Pickup, and J. Esposito (1998) A third distinct tumor necrosis factor receptor of orthopoxviruses. Proc. Nat'l. Acad. Sci. 95(7):3786–3791. Mazanet, M.M., K. Neote, and C.C.W. Hughs (2000) Expression of IFN-inducible T cell chemoattractant by human endothelial cells is cyclosporin A-resistant and promotes T cells adhesion: implications for cyclosporin A-resistant immune inflammation. J. Immunol. 164:5383–5388. Pfizenmaier, K., H. Bartsch, P. Scheurich, B. Seliger, U. Ucer, K. Vehmeyer, and G.A. Nagel (1985) Differential gamma-interferon response of human colon carcinoma cells: inhibition of proliferation and modulation of immunogenicity as independent effects of gamma-interferon on tumor cell growth. Cancer Res. 45(8):3503–3509. Rodriguez, P., M. Heyman, C. Candalh, M.A. Blaton, and C. Bouchaud (1995) Tumour necrosis factor-alpha induces morphological and functional alterations of intestinal HT29 cl.19A cell monolayers. Cytokine 7(5): 441–448. Stephens, J.M., S.J. Lumpkin, and J.B. Fishman (1998) Activation of Signal Transducers and Activators of Transcription 1 and 3 by leukemia inhibitory factor, oncostatin-M, and interferon-γ in adipocytes. J. Biol. Chem. 273:31408–31416. Subramaniam, P.S., M.G. Mujtaba, M.R. Paddy, and H.M. Johnson (1999) The carboxyl terminus of interferon-gamma contains a functional polybasic nuclear localization sequence. J. Biol. Chem. 274(1):403–407. Subramaniam, P., J. Larkin III, M.G. Mujtaba, M.R. Walter, and H.M. Johnson (2000) The COOH-terminal nuclear localization sequence of interferon γ regulates STAT1α nuclear translocation at an intracellular site. J. Cell Sci. 113:2771–2781. Zhai, Y., R. Guo, T.L. Hsu, G.L. Yu, J. Ni, B.S. Kwon, G.W. Jiang, J. Lu, J. Tan, M. Ugustus, K. Carter, L. Rojas, F. Zhu, C. Lincoln, G. Endress, L. Xing, S. Wang, K.O. Oh, R. Gentz, S. Ruben, M.E. Lippman, S.L. Hsieh, and D. Yang (1998) LIGHT, a novel ligand for lymphotoxin beta receptor and TR2/HVEM induces apoptosis and suppresses in vivo tumor formation via gene transfer. J. Clin. Invest. 102(6):1142–1151.

Explanation of Symbols

The symbols present on the product label are explained below:

Symbol	Description
REF	Catalog Number
RUO	Research Use Only
	Use by
	Manufacturer
[–]	Without, does not contain
	Protect from light
	Directs the user to consult instructions for use (IFU), accompanying the product.

Symbol	Description
LOT	Batch code
IVD	In vitro diagnostic medical device
	Temperature limitation
EC REP	European Community authorized representative
[+]	With, contains
⚠	Consult accompanying documents

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