Regarding the molecular biology of IFN-alpha's ability to stimulate gene expression, Decker et al. (70) have identified an element, *interferon stimulation response element* (ISRE), which is targeted by IFN-alpha, and which mediates IFN-alpha's ability to regulate various target genes. In order to stimulate the ISRE, IFN-alpha promotes formation of a complex of three proteins (STAT 1, STAT2, and p48), to form the IFN-stimulated gene factor 3 (ISGF3) complex, which travels to the cell nucleus, where it binds to the IFN-stimulated response element (ISRE) sequence in IFN-alpha-stimulated gene promoters (71,72,73,74). To repeat, ISGF3 is a complex of three proteins. ISREs are found near the promoters of most genes that are responsive to IFN-alpha (75). Levy et al. (76) have identified the target sequence, present in the human genome, as follows. This sequence is a consensus sequence. The "Y" means pyrimidine:

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YAGTTTC(A/T)YTTTYCC.
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m. Influence of IFN-alpha on gene expression as measured by microarrays

The following addresses attempts to measure IFN-alpha's induction of IFN-gamma, by measurements of mRNA in PBMCs, using the technique of microarrays. Waddell et al. (77) Lanford et al. (78) Zhu et al. (79) and Ji et al. (80) identified a large number of genes that can be induced by IFN-alpha. The influence of IFN-alpha on expression of IFN-gamma seems not to have been detected by the methods reported in these publications, even though in vivo data do show that IFN-alpha stimulates expression

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