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IFN-g-Mediated Transcriptional Induction of the IDO (Indolamine 2,3-Dioxygenase) Gene Requires Activity of p68/PKR Protein Kinase

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Abstract: We investigated whether the activity of double-stranded RNA activated kinase (p68/PKR) is necessary for induction of IDO (indolamine 2,3 -dioxygenase) gene by IFN-γ. For this purpose, we planned to abrogate the function of cellular wt-PKR gene. Clones of ME180 cells expressing the dominant negative form of PKR were selected in the presence of neomycin. Then these cells were treated with IFN-γ and accumulation of IDO protein was determined by Western blot analysis. We found that clones expressing the dominant negative form of the PKR gene were not only resistant to IFN-γ-mediated killing, but were also incapable of inducing accumulation of IDO protein after IFN-γ treatment.

Key Words: IFN, p68/PKR, IDO, transcription

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