Immune responses to synthetic peptides of RSV F protein

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The fusion (F) protein of respiratory syncytial virus (RSV) is an important antigen in including cross-protective immunity with neutralizing activity. Two peptides homologous to amino acid 205-225 (F/205-225) and 255-278 (F/255-278) of the F glycoprotein of RSV containing B cell and T cell epitope were synthesized and then conjugated with KLH. To evaluate the immunological activities of the two conjugated vaccines, the vaccines were administrated into BALB/c mice for times by the intranasal route in the presence of cholera toxin (CTB) as a mucosal adjuvant. Each the peptides specific serum IgG responses and saliva IgA were detected after a second immunization, and a third immunization, respectively. Combined immunization of F/205-225 and F/255-278 also had the similar immunological response in the IgG and IgA levels with that of F/205-225 or F/255-278 alone. These results indicate that the two peptide-conjugate vaccines could be candidates for the development of RSV vaccines.

Anti-/pro-apoptotic regulatory potentials of LPS/IFN-\gamma in the malnutrition induced macrophage

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Macrophage activated by LPS/IFN-\gamma play a important role in inflammation, innate immunity and tumor immunity. The recent report has indicated that LPS treated bone marrow macrophages were induced apoptosis, but IFN-\gamma protects from apoptosis induced by several stimuli in complete medium condition (Jordi et al., Immunity, Vol.11, 103-113, 1999). Since relationship between LPS or IFN-\gamma and apoptosis in malnutrition (conditional medium condition: without amino acid, serum) is unknown, we investigated the anti- or pro-apoptotic potentials of LPS or IFN-\gamma to the malnutrition induced macrophage. Peritoneal macrophages were isolated from mouse, purified macrophages were treated with LPS or IFN-\gamma in complete medium condition. After treatment, cells were further incubated in conditional medium condition to induce apoptosis. Apoptotic cells were determined by MTT assay, Annexin V assay, PI staining and DNA fragmentation assay. Apoptotic cells of LPS treated macrophage were increased as compared with those of untreated macrophage. However, treatment of cells with IFN-\gamma resulted in the enhancement of apoptosis. These data demonstrate that LPS or IFN-\gamma regulates apoptosis of macrophage by different mechanism in malnutrition. Moreover, these results suggest that apoptotic pathway of LPS or IFN-\gamma treated macrophage is regulated differently in manutrition and complete medium condition.

TheProduction of IFN-\gamma by 3LL/TNF-\alpha-Activated Macrophages Requires p38, JAK-2 Signalling and is Enhanced by New Protein Synthesis.

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Macrophages have been known to play an essential role in tumor angiogenesis and produce a number of growth stimulators and inhibitors. Thus macrophages appear to influence every stage of angiogenesis. In this report, TNF-\alpha was able to induce the production of IFN-\gamma in cancer cell-contacted macrophage. TNF-\alpha alone released relatively little IFN-\gamma whereas live tumor cells (3LL) alone released IFN-\gamma markedly from macrophage. However, TNF-\alpha and 3LL together enhanced IFN-\gamma release synergistically. The effects of TNF-\alpha on