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ANTIVIRAL AND IMMUNOMODULATING ACTIVITIES OF POLYSACCHRIDES EXTRACTED FROM MEDICINAL FUNGI AND HERBS Hongshan Chen, Zhuang Li, Jian-dong Jiang, Jinghe Li, Fang Zhang, Xiaoshan Tang, Xinquan Zhang. Institute of Medicinal Biotechnology, Chinese Academy of Medical Sciences, Beijing, China

Chinese medicinal fungi and herbs have been used in clinic as folk remedies for treatment of cancer or infectious diseases.The polysacchride extracted from medicinal fungi Polystictus versicolor (L) Fr.(Chinese name Yuenzhi YZ), Polyporus umbellatus (pers) Fr.(Chinese name Zhuling, ZL) and Lentinus edodes (Berk.) Sing.(Chinese name Xianggu, XG) and Chinese herbs: roots of Bupleurum chinensis(BC) and Actinidia chinensis Planch(ACP) were studied. The polysaccharides extracted from cultured mycelia of Polystictus versicolor (L) Fr.(YZPS) were found to have protective activity on influenza virus intoxication in mice, YZPS given by oral or ip to mice which were injected iv with influenza virus A3 H3N2 decreased the mortality and liver lesions. It also protected the mice from CCl4 intoxication and induced interferon, activated peritoneal macrophage and Kupferl cell phagocytosis and NK cell activities in mice and also promoted mice T-cell subsets to increase Lyt1/Lyt2 ratio. YZPS was now used in clinic for treatment of liver diseases and respiratory infections in China. The polysaccharides extracted from medicinal fungi ZL, XG and Chinese herbs BC and ACP were revealed with the similar effects on protection of influenza virus intoxication and immunomodulating activies.

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Protective Immune Responses in Animals Vaccinated With the FHN Subunit Vaccine for Control of Human Parainfluenza-3 Virus. RJ Brideau, NL Oien, DR Thomsen, FL Homa, DJ Lehman, LL Roof, and MW Wathen. Infectious Diseases and Molecular Biology Research, The Upjohn Company, Kalamazoo, MI USA 49001

Infants and young children experience a variety of viral respiratory infections. The paramyxovirus, parainfluenza-3 (PIV-3) is in part responsible for the "croup syndrome". A safe and effective vaccine does not exist for PIV-3. The present studies address the use of subunit vaccines for control of PIV-3. The fusion (F) and hemagglutinin/neuraminidase (HN) proteins of PIV-3 were targeted as potential candidates for a subunit vaccine and were expressed as a chimeric FHN glycoprotein using a baculovirus vector system. Individual PIV-3 glycoproteins were purified to >90% following immunoaffinity chromatography. We report here the induction of antibody and cell mediated immune responses following FHN vaccination. The level of serum (ELISA) and neutralizing (anti-PIV-3) antibody induced was dependent on the dosage of FHN administered. FHN vaccination also resulted in 100% protection from PIV-3 challenge when given at levels of 200 ng or higher and was also highly correlated with the presence of immune-precipitating (anti-PIV-3 antigens) antibodies in cotton rats. Purified F glycoprotein was only partially protective at comparable doses. Both F and FHN induced lympho-proliferative responses in mice. These preliminary results suggest that the FHN chimeric glycoprotein may be suitable for use as a subunit vaccine for control of human PIV-3 infections.