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Effects of *Psoraleae semen* extract on influenza virus infection

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Influenza causes respiratory infections and poses health risks to humans and animals; its effects are complicated by increasing resistance to existing anti-influenza viral agents. Therefore, novel therapeutic approaches against influenza virus infection are required. *Psoraleae semen* (PS) has been widely used in traditional medicine in Korea, China and Japan for treating and preventing various diseases. In this study, we examined the anti-viral activities and mechanism of action of the PS using MDCK (Madin-Darby canine kidney) and RAW 264.7 (murine macrophage) cells. We found that pre- and post-treatment with 100 μg/mL PS markedly inhibited influenza A virus replication as assessed using a GFP reporter virus, reduced viral protein expression and inhibited NA (neuraminidase) and HA (hemagglutinin) activities. Mechanism studies revealed that PS induced type-I interferon cytokine secretion and subsequent stimulation of an anti-viral state in murine macrophage cells. Further, PS exerted inhibitory effects on neuraminidase in influenza virus strains H1N1 and H3N2. Meanwhile, PS exhibited inhibitory effects on HA hemagglutinin in H3N2 but not in H1N1. Based on these results, PS serves as an immunomodulator and inhibitor of influenza hemagglutinin and neuraminidase. Therefore, PS may be a potential promising source of novel anti-influenza drug candidates.

Biography

Jang-gi Choi has completed his PhD from Wonkwang University and Postdoctoral studies from Texas Tech University Health Sciences Center. He has published more than 50 papers in reputed journals.

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