Anti-Retroviral Activity of Coriolus Versicolor's Polysaccharide Peptide (PSP) in HIV-1 Infected Human Peripheral Blood Mononuclear Cells

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Human Immunodeficiency Virus (HIV) is one of the most studied and challenging diseases, which is characterized by high and rapid replication. HIV treatments are targeted to lower the viral replication, in order to diminish its progression to AIDS. Currently used regimens of Highly Active Antiretroviral Therapy (HAART) are generally expensive and relatively toxic. In addition, rapid development of drug-resistant viral strains makes antiretroviral therapy for HIV-1 infection transiently effective. There is a major need to identify a compound that can prevent and/or alleviate the damaging effects that follow HIV-1 infection. We identified a polysaccharopeptide (PSP) produced by different edible mushrooms that demonstrated anti-HIV-1 activity. Peripheral Blood Mononuclear Cells (PBMC) are infected with HIV-1 and then treated with PSP. RT-PCR is used to measure HIV-1 viral load. We showed that PSP treatment in a concentration of 10 mg/ml suppressed an average of 70% of HIV-1 replication in PBMC. This data suggest that PSP has an anti-HIV-1 response. Further studies are needed to understand the cellular and molecular mechanisms by which PSP exerts HIV-1 inhibition. These studies could lead to the development of a new therapy against HIV/AIDS.

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