

Castanospermine a Possible AIDS Treatment.

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Introduction

The HIV virus infects the body in a very sophisticated manner. It uses a chemokine receptor called CCR5 that mis-recognizes it on the surface of specific type of T-helper immune cells called CD4 T-helper cells. The immune system CD8 T-helper cells then systematically attack the infected CD4 cells and demolish them. These cells go to degradation and recycling process by a system called MHC but the virus persists and small peptides of it return to the T-helper cells through the MHC system, in a mechanism essentially designed to improve immunity, and because of the CCR5 receptor malfunction, infect the CD4 T-cells once again. This process leads to a decline in CD4 T-cells count and to the immunodeficiency evident in AIDS, because these cells are necessary for the immune system's function. This chemokine receptor that misrecognizes the virus on the surface of the T-cells, CCR5, has effective drugs meant to block its function, CCR5 antagonists that are already in use in AIDS treatment and have a very positive impact. Another form of treatment is by enhancing the production of new T-cells to restore immune efficiency despite the disease. What this paper suggests is another pathway randomly researched to impact the MHC process, in order to prevent the virus from continuously infecting the CD T-cells. Castanospermine is an indolizidine alkaloid first isolated from the seeds of *Castanospermum australe*. It and substances deriving of it are already in use in medicine [1]. Several studies have shown this substance to inhibit the MHC recycling process and affect its secretion [2-4].

Other studies show castanospermine and substances deriving from it to be decisively effective against AIDS. These studies showed conclusive evidence of lower viral expression, production and infection of CD4 cells, to inhibit HIV depletion and effectively counter the disease [5-7]. Therefore proving the hypothesis that Castanospermine can possibly alter the immunological process by the MHC that enables

the virus to remain in the body and re-infect the CD4 T-helper cells again and again leading to their demolition by the CD8 T-cells. And therefore enable treatment for the disease. According to this understanding of MHC activity and its malfunction regarding HIV infection, and in compliance with the referenced researches regarding Castanospermine as an inhibitor of the MHC system [2-4]. And a substance that shows decisive effectiveness against HIV [5-7], it should be thoroughly examined as a treatment against HIV.

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