Novel Cellular Targets to Treat HIV Infection

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Technology description

Summary

Human Genes with Anti-HIV Function

Description

Human immunodeficiency virus type-1 (HIV-1) is the etiologic agent for AIDS. Current medical treatments for HIV infections include combinations of drugs that inhibit the action of the essential virus encoded enzymes reverse transcriptase and protease, however significant problems of drug-failure persist. Thus, in the absence of effective AIDS vaccines, the range of anti-HIV drugs needs to be expanded. As with all viruses, HIV-1 growth and replication requires the concerted action of viral as well as cellular factors. University of Pennsylvania researchers have identified three human genes that display significant anti-viral activity in tissue culture models of HIV-1 infection.

Application area

This protein is a cytidine deaminase that potently suppresses HIV-1 infection in the absence of the counteracting viral protein Vif.
Studies indicate inhibiting Vif action or rendering CEM15/APOBEC3G resistant to Vif (e.g. pharmacologically) would therefore block virus infection and replication.

Institution

University of Pennsylvania

联系我们

叶先生

电 话：021-65679356

手 机：13414935137

邮 箱：yeyingsheng@zf-ym.com