



The Chinese University of Hong Kong
Non-confidential Abstract of Technology Disclosure

Title:

Inhibiting HIV by HIV-1 Protease-activated Maize Ribosome-inactivating Protein and the Procedure of Generating the Protein

CUHK Ref. No.:

09/SCI/331

Inventor(s):

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Patent Status: Chinese Patent Application Pending

Licensing Status: Available for licensing

Non-confidential abstract:

For a drug to eliminate HIV-infected cells, a major challenge is to achieve high specificity toward target cells but low cytotoxicity toward normal cells. Maize ribosome-inactivating protein (RIP) contains a 25-amino acid internal inactivation region. Removal of this region generates the active cytotoxin. We have taken advantage of this maturation mechanism and increase the specificity of maize RIP toward HIV-infected cells by substituting the internal inactivation region with a combination of HIV-1 protease cleavage sites. Two variants generated were found to be activated by recombinant HIV-1 protease *in vitro* and in HIV-infected cells. They also inhibited the replication of HIV-1. On the other hand, these variants had low cytotoxicity towards uninfected C8166 cells. Our work of adding the HIV-1 cleavage sites to the internal inactivation region of maize RIP may serve as a platform for inhibiting other pathogens that require a specific protease for their function.

For further queries, please contact:

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