Development of Anti-viral Agents from Natural Sources

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Human immunodeficiency virus (HIV), the causative agent of AIDS, still continues to spread rapidly in the world population, especially in Africa and Southeast Asia. At present, two kinds of therapeutic approaches are used for treatment of AIDS. One is to target HIV reverse transcriptase, which is responsible for the viral genome transcription.

The other is to inhibit HIV protease PR, which is essential for the processing of viral proteins. Drug combinations based on these approaches can reduce the blood virus to an undetectable level. However, a small amount of virus may lurk inside the immune cells in a dormant state. Another major obstacle of long-term treatment of the disease is remarkable mutation in HIV. Most of the clinical chemotherapeutic agents have one or more of these problems. High cost and harmful side-effects further reduced the desirability of these drugs.

In the course our studies on development of anti-HIV agents from natural products, we investigated various crude drugs for their inhibitory activity against HIV-induced cytopathic effects (CPE) in culture cells, HIV-protease (PR), HIV-reverse transcriptase (RT) including ribonuclease H (RNase H), and HIV integrase (INT). In the present paper, some inhibitory substances relating to the development of anti-HIV agents are reported.