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TITLE

Structure Elucidation and Development of Bioactive Natural Products

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We have screened 1500 medicinal plants for various pharmacological activities and have discovered important bioactive molecules such as forskolin, rohitukine, flavopiridol, derivatives of forskolin and several other molecules. Presently we are engaged in the development of new anti-HIV and anti-tumor molecules based on natural products.

Acquired immunodeficiency syndrome (AIDS) is a clinical syndrome that is the result of infection with human immunodeficiency virus (HIV), which causes profound immunosuppression. It has been a serious, life threatening health problem since the first case identified in 1981 and is the most quickly spreading disease of century. Similarly new anti-tumor agents are required to curb rising cancer disease in humans.

We have developed several new anti-HIV and anti-tumor molecules. New anti-HIV molecules have been designed and synthesized, which inhibit HIV-1 replication due to HIV protease inhibition (PI), HIV-1 reverse transcriptase (RT) inhibition and HIV integrase (IN) inhibition.

In anti-cancer area we have achieved the synthesis and evaluation of new molecules based on retinobenzoic acid, andrographolide and other natural terpenoids. Several new molecules have been evaluated for anti-cancer activity against several human cancer cell lines. Some of the molecules which showed potent anti-cancer activity are being developed further as potential anti-cancer agents.

In the present talk the structure elucidation of novel phyto-chemicals will be discussed.