

## **DBT-IBSD study finds a possible therapy for HIV from fermented soybean**



New Delhi, July 01: Anti-viral RNA therapy is in great demand nowadays due to the emergence of several new viral infections. Small non-coding regulatory RNAs (dsRNA) from microbial sources are not yet explored for antiviral activity.

In a new study, researchers at the Department of Biotechnology's Institute of Bioresources and Sustainable Development (DBT-IBSD) assessed anti-HIV activity of small dsRNAs produced by 12 different microbial species isolated from naturally fermented foods of North-East India. The dsRNAs were selectively extracted from microbial cultures and their double-stranded nature was confirmed by immunoblotting, and deep sequencing of the cDNA library. Further, conventional algorithms were used to predict the potential targets of the dsRNA sequences within the 3'-UTR region of HIV-1.

A small dsRNA fragment produced abundantly (9.17% of the total dsRNA fraction) by *Bacillus subtilis* MTCC5480, a gram positive bacterium originating from a fermented soybean product showed a much higher base complementarity values than previously reported miRNAs analysed against HIV-1.

The scientists separated the dsRNA fraction and validated the anti-HIV activity against human peripheral blood mononuclear cells (PBMC) infected with JRCSF strain of HIV-1 virus and the EC50 value ranges from 0.2–0.3  $\mu\text{M}$ . This small dsRNA could be studied further for its application as an antiviral therapeutic agent.

The article has been published recently in International Journal of Biological Macromolecules

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