Computer program to help identify new antibiotics

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New Delhi, March 1 (India Science Wire): Searching for new antibiotics from various natural sources is an uphill task. Now Indian scientists have developed a computer programme that can make the process easy and accurate.

The software is designed to hunt for chemical molecules with antibiotic properties. Known as peptides, these molecules are small proteins that occur naturally in various animals and plants and can confer immunity against bacteria, fungi, and viruses. These have recently gained popularity in clinical practice since they are safe and efficacious.

Microbes acquire resistance to available antibiotics over a period of time and as a result there is a need to constantly hunt for newer antibiotics. Antimicrobial peptides are better alternatives to chemical antibiotics. But, searching for them through lab experiments is labor intensive and costly.

Researchers at the Indian Agricultural Statistics Research Institute, New Delhi and Janata Vedic College, Baghpat have developed a computer program that can identify potential antimicrobial peptides with an accuracy of almost 96%. The open access prediction server named 'iAMPpred' is available free for researchers.

The server can predict if a protein sequence is antibacterial, antiviral or anti-fungal after the user enters necessary information about the protein sequence. Within a few seconds, the user can know if the protein sequence is a potential antibiotic.

The prediction server has been tested with more than 1,000 peptide sequences collected from plants, animals, and amphibians. "The accuracy of iAMPpred was found to be much higher than that of other available prediction servers", claim scientists. The research findings have been published in the international journal `*Scientific Reports*'.

Researchers and clinicians are concerned about the rising antibiotic resistance. New and better software tools can help researchers across the globe to identify new antibiotics in lesser cost, effort, and time. (India Science Wire)