

Exploration of antimicrobial agents for its potential in therapeutic applications

Richa Rani and Sudhir Kumar

University of Cincinnati, USA

With an increasing prevalence of resistances to conventional antibiotics, adapting our present dependence on antibiotics and subsequently, the development of potential antimicrobial agents as therapeutic agents has become one of the major concerns for global pharmaceutical industry. Among the existing antimicrobial agents or that are in developmental stage, toxicity to eukaryotic cells, lack of broad spectrum of antimicrobial activity *in vitro* as well as *in vivo*, low stability, molecular size and high manufacturing cost are the major constraints that restricts their use as antibiotics. Several limitations associated with their application as well as their commercialization aspects, emphasize the need to advent antimicrobial agents from natural sources and make strategies to optimize their production which might emerge as a new hope in the development of a clinically effective and risk free therapeutic agent with a reasonable cost. With the application of genomics based tools and high throughput technologies to cultured, less cultivable as well as uncultivable microbes, new agents targeting multidrug-resistant pathogens can be identified and will lead to new sights on natural therapeutic agents and its pharmacokinetic values together with their commercial utilities.

richa3biotech@yahoo.co.in