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Isolation of new substances from the natural source for the formulation of pharmaceutical formulation

Rama Krishna Raparla
Vaageswari Institute of Pharmaceutical Sciences, India

Drugs are hardly administered as such but are almost always formulated into suitable dosages with the aid of excipients which serve various functions such as binding, lubricating, gelling, suspending, flavoring, sweetening agent and bulking agents. These excipients play a critical role in creation of medicines, help in preserving the efficacy, safety and stability for active pharmaceutical ingredient and ensure that they deliver their promised benefits to the patients. The polymers which are used in the pharmaceutical industrial process for the formulations are obtained from the synthetic, semi synthetic and natural sources. The utilization of the natural polymers is been increased day by day due to their attributability towards their relative abundances, low cost, biodegradable property and eco-friendly profiles along with this these natural polymers can also enhance the drug functionality and also helps in innovative drug formulation. The increasing research interests in this group of materials are indications of their increasing importance. It is believed that as technology and testing techniques advance, more understanding of their physicochemical nature would be gained that can enable them to be tailored for wider pharmaceutical applications than their synthetic counterparts. Today, the whole world is increasingly interested in natural drugs and excipients. Natural materials have advantages over synthetic materials because they are non-toxic, less expensive and freely available. Furthermore, they can be modified to obtain tailor made materials for drug delivery systems allowing them to compete with the synthetic products that are commercially available.

Microbial metabolites screening utilizing multifaceted (MECSUS) protocol

Rasha Saad Abdelgadir[1,3], Sadia Sultan[1], Kalavathy Ramasamy[1], Mohd Fadli Asmani[3], Eddy Yosuf[3], Cole A. L. J.[2] and J. F. F. Weber[1]
[1]UniversitiTeknologi MARA, Malaysia
[2]University of Canterbury, New Zealand
[3]Management and Science University, Malaysia

The advent of new chemical genetic tools and high-throughput screening technologies and platforms havealready led and will continue to lead in accessing the natural product diversity of microorganisms. This paper represents a continuation of the work on the investigation into means of making better use of the advantages of new technologies and approaches in drug discovery that the Atta-ur-Rahman Research Institute of Natural Product Discovery (RiND) at MARA University of Technology has engaged in.

MECSUS (Microtiter plate, Elicitors, Combination, Solid phase extraction, UHPLC, Statistical analysis) is a protocolfor microbial metabolites studies that involves miniaturized parallel fermentations in 96-well microtiter plate with up to ninety six different media, parallel extraction and data analysis.

The aforementioned protocol introduces elements of incremental novelty in the natural product screening program by means of combining and harnessing existing ideas, techniques, and technologies into a protocol for the implementation of the OSMAC (one strain many compounds) approach at micro-scale. Its main advantage is the decrease of the scale of operation with the use of the 96-well microtiter plates. It's benefits include the possibility of overcoming few issues such as processing time and human resources that have somewhat hampered the implementation of the OSMAC approach and/or the systematic study of a large library of microorganisms.