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Natural bioactive components: An insight in prevention and treatment of life threatening disorders

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Since from the ancient times, natural products have provided a rich source of compounds that have wide applications in the fields of medicine, health sciences, pharmacy and biology. Although naturally active substances are good lead compounds for the discovery of new drugs, to combat shortcomings, such as complex structures, poor stability and solubility. Terpenoids or isoprenoids, alkaloids, saponins, pigments, polyphenols and others secondary metabolites, represents the oldest group, plays an extensive role in plant growth and development, response to the environment and other physiological processes. They are known to possess anti-inflammatory, antibacterial, antiviral, anti-malarial, anti-tumor and anti-ageing properties. They also found applications in insect resistance, immunoregulation, auto-oxidation and neuroprotection, thus acting via variant mechanism of action. Therefore, structural modification of NPs is needed to develop novel compounds with specific properties. Modification in natural existing molecule is a versatile approach to explore their mode of actions, which may lead to the discovery of novel drugs. Currently, piperine isolated from Piper nigrum, curcumin from Curcuma longa and many more has been utilized same or in modified form and also with combinations to explore the synergistic as well as to potentiate the drug activity. Literature explores terpenoids as protease inhibitors in covid -19 and piperine

has been reported as EPIs. Thus, current studies will help the researchers to increase the chances of gaining breakthrough insights in the field to be employed in therapeutic practice against these diseases. Therefore, now there is need of time to enlighten the bioactive molecules more and more with better potency and efficacy by doing some modifications in the parent nucleus. It was well reported in nature that natural modified molecule when combined/fused with other heterocyclic molecules may lead to the generation novel molecules.

Keywords: Cancer, Inflammation, Pharmacological Potential, Antibacterial, Modification.

Biography

Bhawna Chopra is an Associate Professor in Guru Gobind Singh College of Pharmacy, Yamuna Nagar. Her field of specialization is Pharmaceutical Chemistry. She did her PhD from IK Gujral University, Jalandhar, Punjab, India. Her research areas include natural product chemistry, synthetic chemistry. She has total 10+ years of experience in teaching. She has more than 25 research/review publications, 8 copyrights, 3patemts, 5 books chapters to her credit. She also achieves award from universities and honored by the reputed journals. Presently, she is Life member of APTI, SPER and member of editorial board: Acta Scientifica International Journal of Pharmaceutical Sciences.

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