

**INTERNATIONAL JOURNAL OF UNIVERSAL
PHARMACY AND BIO SCIENCES****IMPACT FACTOR 4.018*******ICV 6.16*******Pharmaceutical Sciences****Review****Article.....!!!****MEDICINAL USES AND APPLICATION OF ALKALOIDS**

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KEYWORDS:Indole, Tropane, Piperidine,
Purine, Imidazole, Quinolizidine.**FOR CORRESPONDENCE:****Dr. S. Senthilkumar *****ADDRESS:**Karur, Tamilnadu,
India.**ABSTRACT**

Plants are eminent source of new therapeutic agents that helps to alleviate human ailments and promote health. Alkaloids constitute an important class of structurally diversified compounds that are having the nitrogen atom in the heterocyclic ring and are derived from the amino acids. On the basis of their biosynthetic precursor and heterocyclic ring system, the compounds have been classified into different categories including indole, tropane, piperidine, purine, imidazole, pyrolizidine, pyrrolidine, quinolizidine and isoquinoline alkaloids. These are important therapeutic molecules due to their efficacy to prevent the onset of different degenerative diseases by scavenging the free radicals or binding with catalysts of the oxidative reactions, such as some metal ions.

INTRODUCTION:

Their biosynthetic precursor and hetrocyclic ring system, alkaloids have been classified into different categories including indole, tropane, piperidine, purine, imidazole, pyrrolizidine, pyrrolidine, quinolizidine and isoquinoline alkaloids. The chemical nature of these alkaloids along with their biosynthetic precursor and distribution are of primary interest. Alkaloids have been widely studied owing to their beneficial biological properties. The different alkaloids have their own specific properties and act useful for the medicinal purposes.

Medicine has its roots in natural plant products. Plant cells are highly sophisticated chemical factories which produce secondary metabolites like alkaloids which possess significant biological properties. They are bio-active chemical interacts between the producing plant and its surrounding environment. The relationship between human immune system and plant antioxidant is known and alkaloids are reported to have anti-cancerous as well as immune stimulant properties.

MEDICINAL USES OF ALKALOIDS:

1. Indole alkaloid:
Antimalarial, antibacterial activity.
2. Tropane alkaloid:
Antifungal, anti bacterial, anthelmintic activity.
3. Quinoline alkaloid:
Cardiotonic, anticonvulsant, anti inflammatory and analgesic activity.
4. Isoquinoline alkaloid:
Antimicrobial, antihyperglycemic, antitumor, muscle relaxant activity.
5. Purine alkaloid:
Antioxidant, anti inflammatory, anti diabetic, hyperlipidemia and obesity.
6. Piperidine alkaloid:
Antibacterial, anti-histaminic, anticancer, herbicidal, insecticidal, stimulant activity etc.
7. Pyridine alkaloid:
Antimicrobial and antioxidant activity.
8. Imidazole alkaloid:
Eye disorders and glaucoma.
9. Pyrrolizidine alkaloid:
Hepatotoxicity, liver cancer and diabetic activity.
10. Pyrrolidine alkaloid:
Antibacterial, antifungal and antitubercular activity.

11. Quinolizidine alkaloid:

Antimicrobial activity.

CONCLUSION:

It was reported that many medicinal plants have been reported to have strong physiological activities, molecular interactions between alkaloid molecules and chemically defined components of the affected organisms, to their content of alkaloids. Quinine alkaloid, vinblastine, vincristine, dimericindole alkaloids, curcumol, citral are reported to have anti cancerous preproperties. Plant cells are highly sophisticated chemical factories which produce secondary metabolites including alkaloids, steroids, terpenoids, oxygen heterocyclics like flavonoids, xanthenes and coumarins which possess significant biological properties. Alkaloids can be concluded as one of the healers in plants and the natural bio resources studied may prove to be of significance in naturopathy and possess properties of medicinal activities. Bio active molecules may prove to be good therapeutic tools.

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