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ABSTRACT

Research Paper

SYNTHESIS, CHARACTERIZATION AND EVALUATION OF ANTICANCER ACTIVITY OF PHENANTHRIDINE DERIVATIVES

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Phenanthridines are important class of heterocyclic compounds owing their presence in wide variety of alkaloids, pharmaceuticals and bioactive compounds.Compounds incorporating such motif possess various biological activities including antiprotozoal, antiviral, nematocidal, antitumor, antibacterial, antifungal and cytotoxic activities.Cancer and infectious diseases are major public health problems worldwide due to the continuous emergence of drug resistance. It is imperative to search for new antimicrobial and anticancer agents from a natural source that could either overcome or avoid the multi-drug resistance.The benzo[c]phenanthridine alkaloids have attracted much attention due to their broad bioactivities such as anticancer, antimicrobial, and anti-inflammatory activities. In view of diverse traditional uses and its attractive bioactive chemical compounds.Sanguinarine and chelerythrine are the best-known benzo[c]phenanthridine alkaloids, most frequently studied for their antitumor effects.The molecular mechanism of action of these compounds has been often attributed to inhibition of topoisomerases, which are also targeted by the related compounds nitidine and fagaronine.DNA damage induces various responses, including stabilization and activation of tumor suppressor protein.

KEY WORDS –Phenanthridine, dihydropyrrolo [1,2-f] phenanthridines, Sanguinarine.

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