

# Natural lead compounds Used as Various therapy

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**Abstract:** In computer aided drug design the natural compounds are have its own important characters for development of a new compounds. These compounds are generally derived from the plants sources, microorganisms, merine sources and fungi. The various plants source are used in treatment of many diseases such as- Vinca as anticancer drugs, Neem used as antimicrobial, Quinine used as antimalarial agents etc. so the natural compounds play a important role for the development of clinically active compounds. In this review paper we are study the some natural compounds which are used in various disease treatment.

**Keywords:** Lead compounds, Antimalarial agents, Antidiabetic aagents.

**Introduction:** Computer aided drug design is mainly used to design a new active compound rapidly and reducing the costs. In computer aided drug design the computational and pharmaceutical research are designed. The lead compounds are biologically active and have various undesirable effects such as Insolubility, toxicity etc. By using the lead structure the drug discovery are completed without lead there is few number of drug discovery are done and called as serendipitous drug discovery. Serendipitous drug discovery means “an accidental discovery” .In this type of discovery unknown molecule was discovered which have desired effects. Some serendipitous drugs are –Penicillin, Chlordiazepoxide, Cisplatin etc.

**Penicillin:** Penicillin was one of the serendipitous drug discovery which is done by without lead structure. It was discovered by the scientist Alexander Fleming. Penicillin was discovered from the Penicillium Notatum. John Mahoney and his collegeuis described that the penicillin heve therapeutic effects on treatment of syphilis.

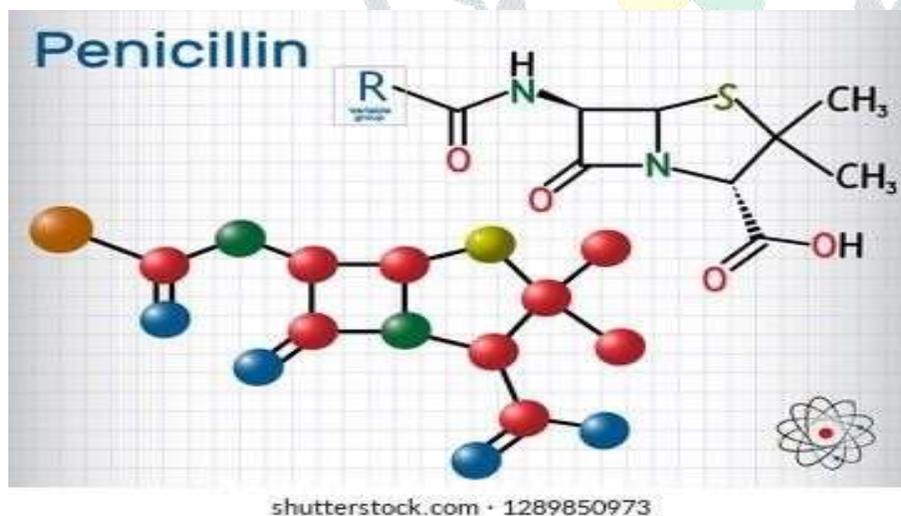
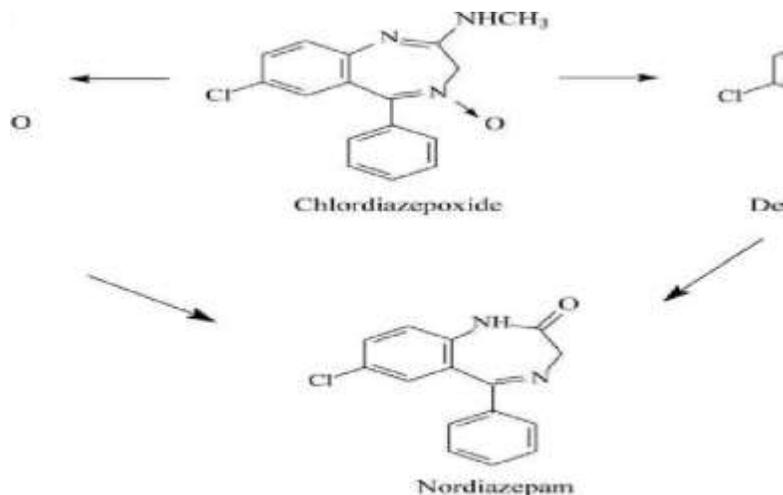


Fig. Penicillin

**Chlordiazepoxide:** Chlordiazepoxide is one of the serendipitous drug discovery. Leo Stern batch synthesized the series of quinazoline-3-oxides and described a new class of tranquilizer drugs. After sometimes later the Librium worked as lead compounds and some other analogs are developed such as diazepam oxazepam etc. (1)

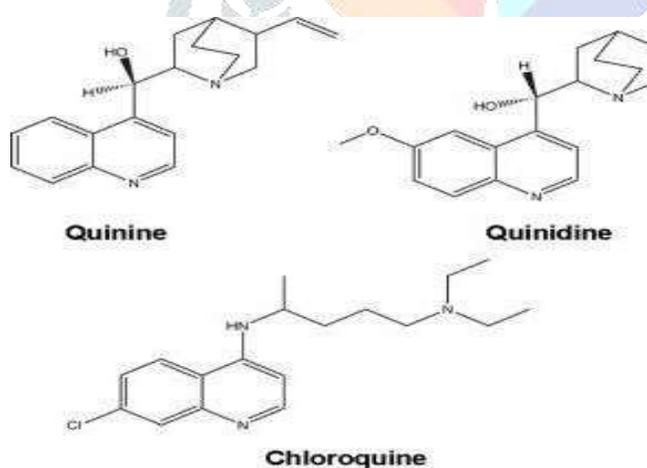
The mangrove species have various medicinal plants that are useful in treatment of various diseases. (2)



**Fig. Chlordiazepoxide**

### Antimalarial agents:

In the treatment of malaria various natural compounds are used. The main natural compounds which are used in malaria therapy was quinine. The antimalarial compounds contained peroxy bridge structure. Artemisinin is one of the best antimalarial drugs to treat malaria .In severe cases of malaria the second line antimalarial drug artether are used. (3)



**Fig. Quinine and its derivative**

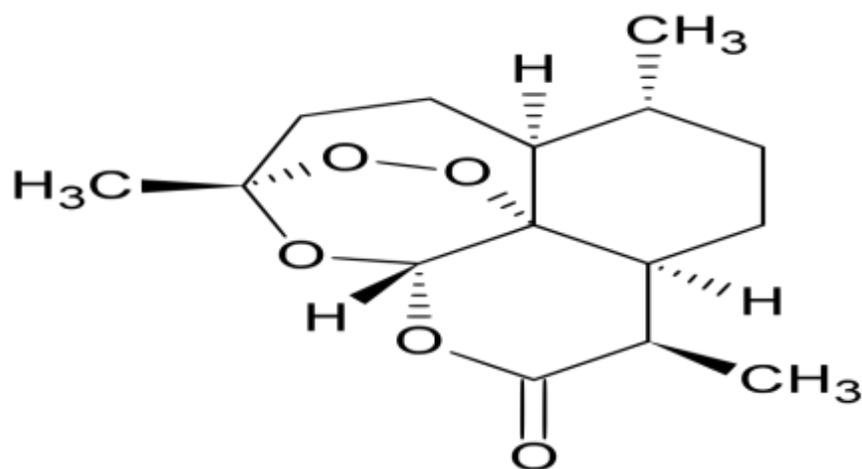


Fig. Artemisinin

Some of the other derivatives of artemisinin are- Artesunate, Artemether, Dihydroartemisinin and Artelinic acid.(4)

#### Antidiabetic agents:

Antidiabetic agents are mainly used to control the abnormal blood sugar level. The alpha glucosidase inhibitors are used to control abnormal blood sugar level. In naturally the salacinol was derived from the Salacia act as the alpha glucosidase inhibitor. The aldose reductase enzyme is control the diabetes by converting the glucose into sorbital. (5)

Various types of coumarins derivative are used as lead compounds for the drug design.some of them are Simple coumarin, Furano coumarins, Linear types etc.(6).

#### Conclusion:

In this review paper we are discussed about natural lead compound used in drug design. The natural compounds have the various activities to treat various types of diseases. The possibility of natural compound to found a lead compound from them is too hard so there study is done by computer aided drug design.

#### References:

1. Siddiqui Ahmad Anees, Kumar Harish, Khisal Subuhi "Computer –aided drug design" Published by CBS publishers and distributors. Page no. 12-13.
2. Ancheeva Elena, Daletos Georgios, Proksch Peter "Lead compounds from Mangrove associated microorganisms" page no. 1-2-.
3. Khazir Jabeena, Mir Ahmad Bilal, Cown A. Donald " Natural products as lead compounds in drug discovery" page no. 21.
4. Pawar Ashok Hersal, " Natural products as a source of lead to the design of new drugs" page no. 2.
5. Khalaf Abu Reema "Exploring natural products as a source for antidiabetic lead compounds and possible lead optimization" page no. 9.
6. Venogopala N.K, Rashmi V., Odhav B. "Review on natural coumarin lead compounds for their pharmacological activity". Page no.2.