Synthesis and characterization of 2,2'-Alkyl/Aryl-bis(quinolin-8-ol/amine-5-azobenzimidazole)

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***Abstract*—**Benzimidazole is an heterocyclic aromatic organic compound. It is an important pharmacophore and a privileged structure in medicinal chemistry. This compound is bicyclic in nature which consists of the fusion of benzene and imidazole.

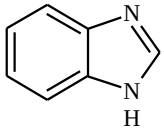
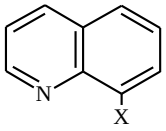


Fig 1. Benzimidale

Nowadays is a moiety of choice which possesses many pharmacological properties such as vitamins, hormones, antibiotics, antimicrobial, antiviral, antidiabetic and anticancer activity.**[1–3]**

In the context of our research on substituted benzimidazoles, we are interested in the synthesis of another heterocyclic molecule « 8-Hydroxyquinoline » and « 8-aminoquinoline » based benzimidazoles compounds.



X : -OH ou -NH_2

Fig 2. 8-(Hydroxy/amine)quinoline

8-(Hydroxy/amine)quinoline is a derivative of the heterocycle quinoline by placement of an OH or NH_2 group on carbon number 8. This novel organic molecule is a subclass of quinolines with a large variety of biological properties.

In order to effect the binding of quinoline to our bisbenzimidazole derivatives, we have chosen the "azo" bond as a fixing means.

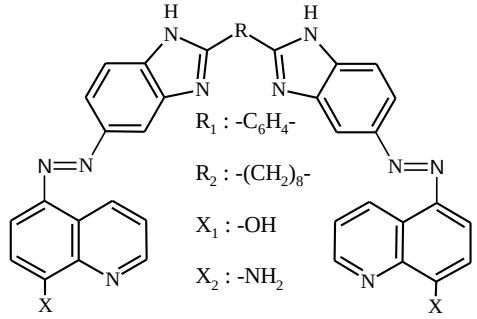


Fig 3. 2,2'-Alkyl/Aryl-bis(quinolin-8-ol/amine-5-azobenzimidazole)

To achieve our goal, we studied different parameters for the reactions in order to determine the conditions for obtaining the best results.

The efficient and economical methods of synthesizing bisbenzimidazole by condensation reaction between ortho-phenylenediamine and various compounds in the presence of various conditions are presented in this work. Our aim is to improve the biological properties of bisbenzimidazole derivatives by fixing them on position 6 (or 5).

***Keywords*—S**ynthesis, Benzimidazole, bisbenzimidazole, quinoline, therapeutic activities, pharmacological activity.

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