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Microwave promoted synthesis and study of some new Schiff bases having 3-amino coumarin moiety

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In medicinal chemistry, the synthesis of heterocyclic compounds has been an interesting field because of their various biological properties. A number of heterocyclic derivatives containing nitrogen and oxygen heteroatom provide as an exclusive and multipurpose gallows for experimental drug design. 3-amino-coumarin has drawn much attention due to its wide range of pharmacological effects such as anti-tumor, anti-coagulant, anti-fungal, anti-inflammatory, anti-tumor, anti-viral and anti-bacterial. In the clinic, coumarin derivatives have been used as an anticoagulant and as an anti-cancer agent. Coumarins have become the research hot point because of their different treatment effects to diseases and less damage to normal cells. Liquid crystals technique for drug delivery can be effective and useful for delivering the drug with the desired target and it also stabilizes the molecule. Our strategy was to synthesize the target molecule via green chemistry, having liquid crystalline property and also shows biological activity, So that we can introduce the new method of synthesis of a compound which having drug delivery system itself. Earlier, we had synthesized Schiff's bases of Oxazolone and thiazolone which shows biological activities. Recently we have synthesized new Schiff's bases of 3-amino coumarin, reacting with 4-n-alkoxy benzyloxy benzaldehyde by using the microwave in solvent-free condition. The synthesized compounds were purified by column chromatography and their structures were confirmed by IR, NMR, and MASS spectra. Some of these compounds show liquid crystalline properties which were confirmed by DSC and microscopic study. The antibacterial activity was checked against *Micrococcus luteus* and *Escherichia coli* for all the compounds. We will update with the latest result of the biological activity of these synthesized compounds.

Conclusion: It is possible to synthesized drug molecule having liquid crystalline property via green chemistry, in solvent-free conditions. These liquid crystalline 3-amino coumarin derivatives are stable and can pass through the membrane of the cell wall of bacteria.

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