

**Poster GC26**

## **Pyrimidine 4,6-dione in Environmentally Green Synthesis: Design, One Pot Multi-Component Reactions and Biological Potential Applications of Some Azo Compounds**

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Simple and green synthetic procedures constitute an important goal in organic synthesis [1, 2]. The combination of multicomponent reactions (MCRs) and unconventional method of synthesis has become a new research direction, which enables simultaneous growth of both MCRs and green solvents toward ideal organic synthesis. This work summarizes recent results of MCRs obtained in ice bath and aqueous media as solvent.

A series of 5-aryl azo-4, 6-dihydropyrimidine derivatives were prepared by classical method of azo coupling reaction via one pot multicomponent reaction between aromatic amine, nitrosyl chloridric acid and pyrimidine 4, 6-dione in sodium hydroxide in ice aqueous media. Compared with other methods, water is a green solvent, which has the advantages of easier work-up, milder reaction conditions, high yields and environmentally benign procedure.

The structures of the products were confirmed by IR, <sup>1</sup>H NMR and UV spectral data and the antimicrobial activities of all the target synthesized compounds were tested against various microorganisms such as *Escherichia coli*; *Staphylococcus aureus* (Bacteria) and *Candida albicans* (Yeast fungus) by disc diffusion and streak dilution methods. In general, the synthesized compounds showed a good antimicrobial activity against the previously mentioned microorganisms.

### **Keywords**

Aqueous media, Antibacterial activity, Antifungal activity, Green synthesis, Multi-component reaction, Pyrimidine 4, 6-dione.

### **References**

- [1] Kappe C. O.; Stadler A. *Microwaves in Organic and Medicinal Chemistry*, Wiley-VCh, **2005**
- [2] Leadbeater N. *Chemistry World*, 1, 38, **2004**