



NEW DANSYL-BASED SULTAM ANALOGUES: SYNTHESIS, CHARACTERIZATION AND EVALUATION OF THEIR ROS INHIBITORY ACTIVITY



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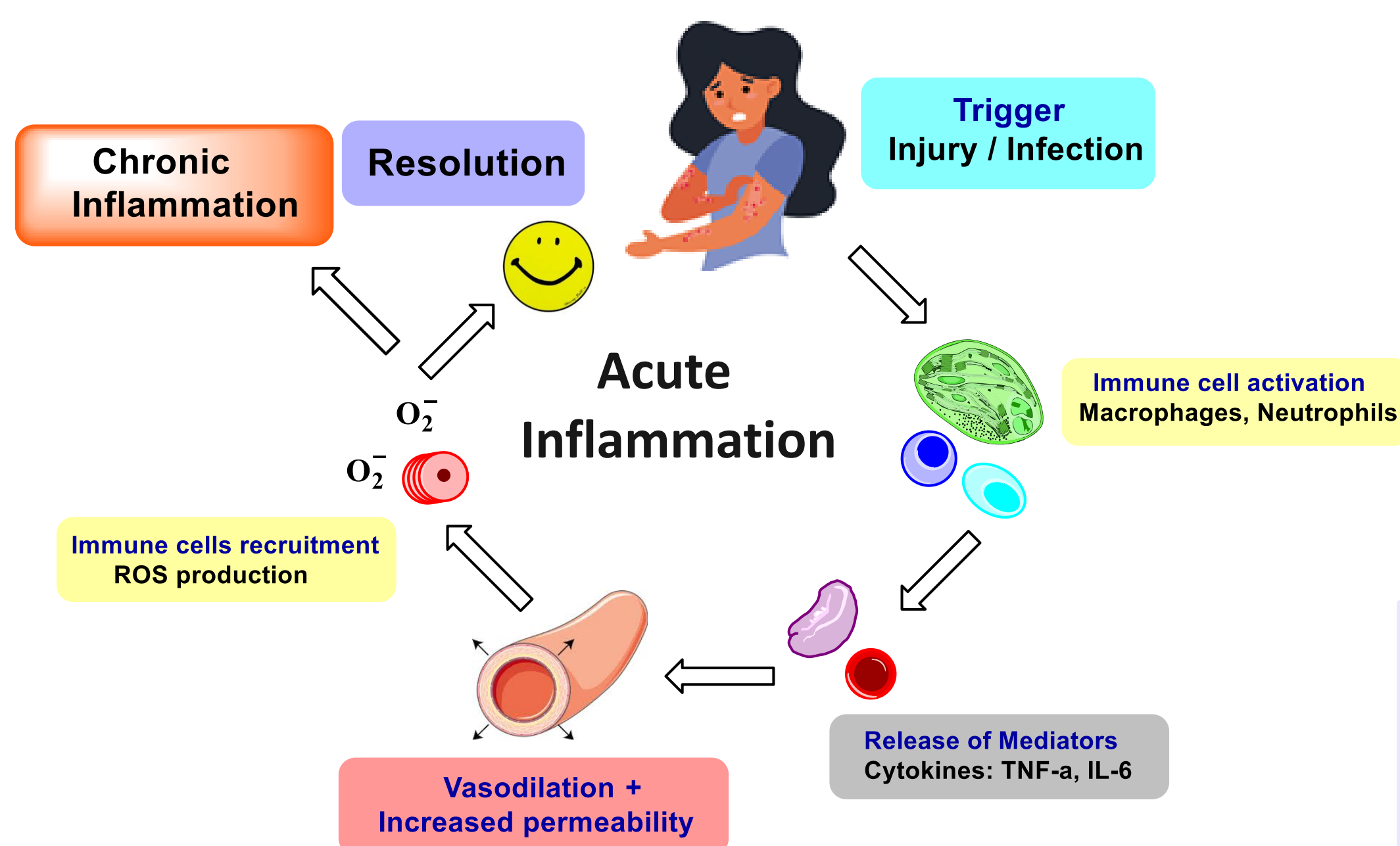
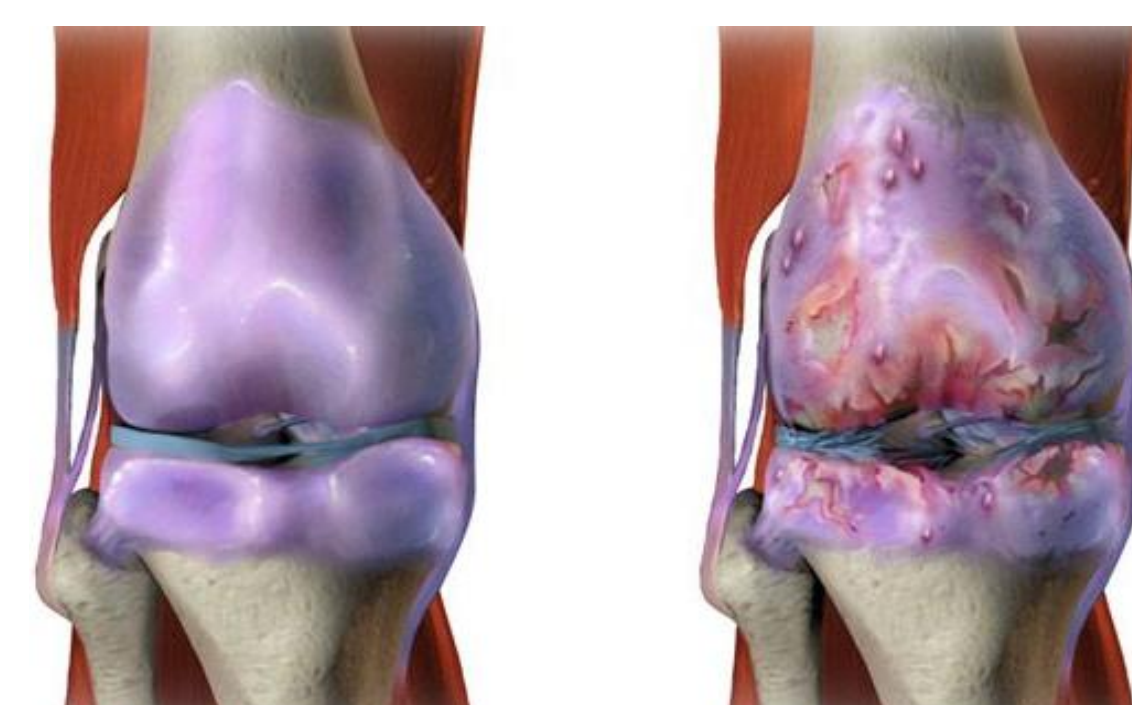
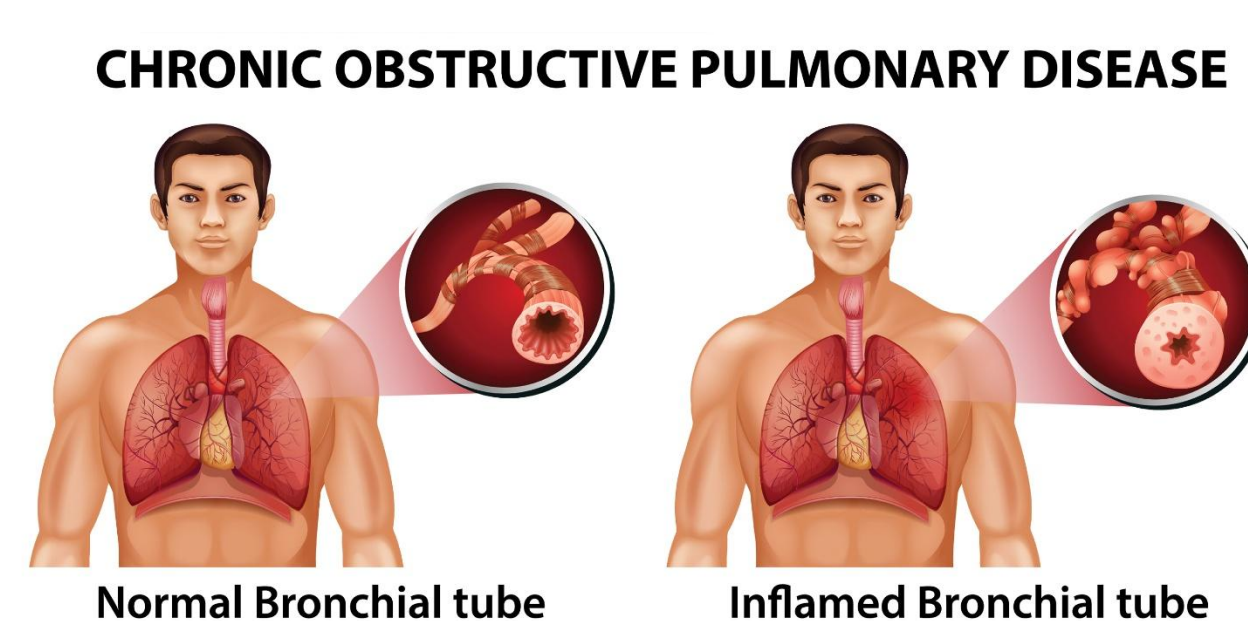
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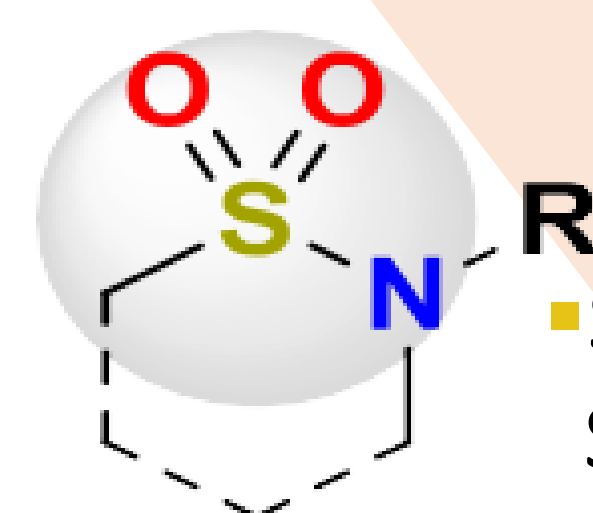
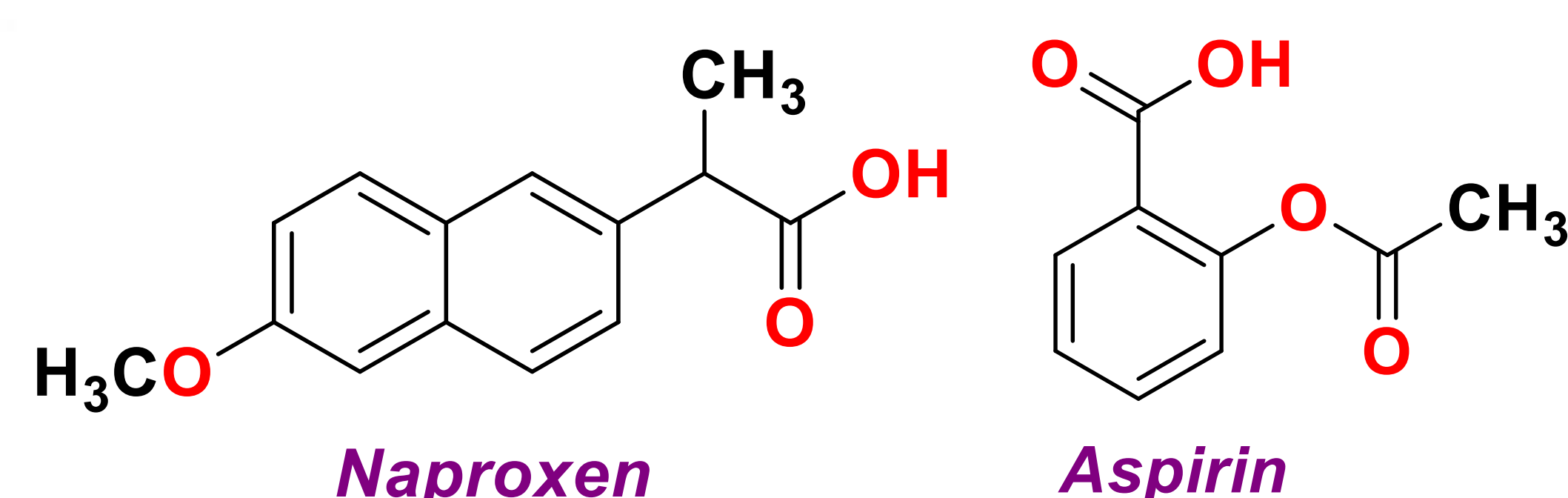
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Abstract

Advancement in the chemical biology, and drug discovery greatly relies on the ample supply of small bioactive molecules to address unmet medical needs. Among these, sulfonamides, particularly cyclic derivatives known as sultams, have gained importance due to their wide range of therapeutic activities. At the same time, Reactive Oxygen Species (ROS) are highly reactive molecules that contribute to diseases such as cancer and inflammation by causing oxidative damage to biomolecules. Therefore, targeting ROS has become a key strategy in drug discovery. Notably, sulfonamide-based compounds have shown potential in influencing ROS-related pathways and therapeutic effects. In this context, the present study focuses on the synthesis of two new libraries of sultam analogues starting from dansylamide. The synthesized compounds were subsequently characterized using various spectroscopic techniques and evaluated for their ROS inhibitory activity.



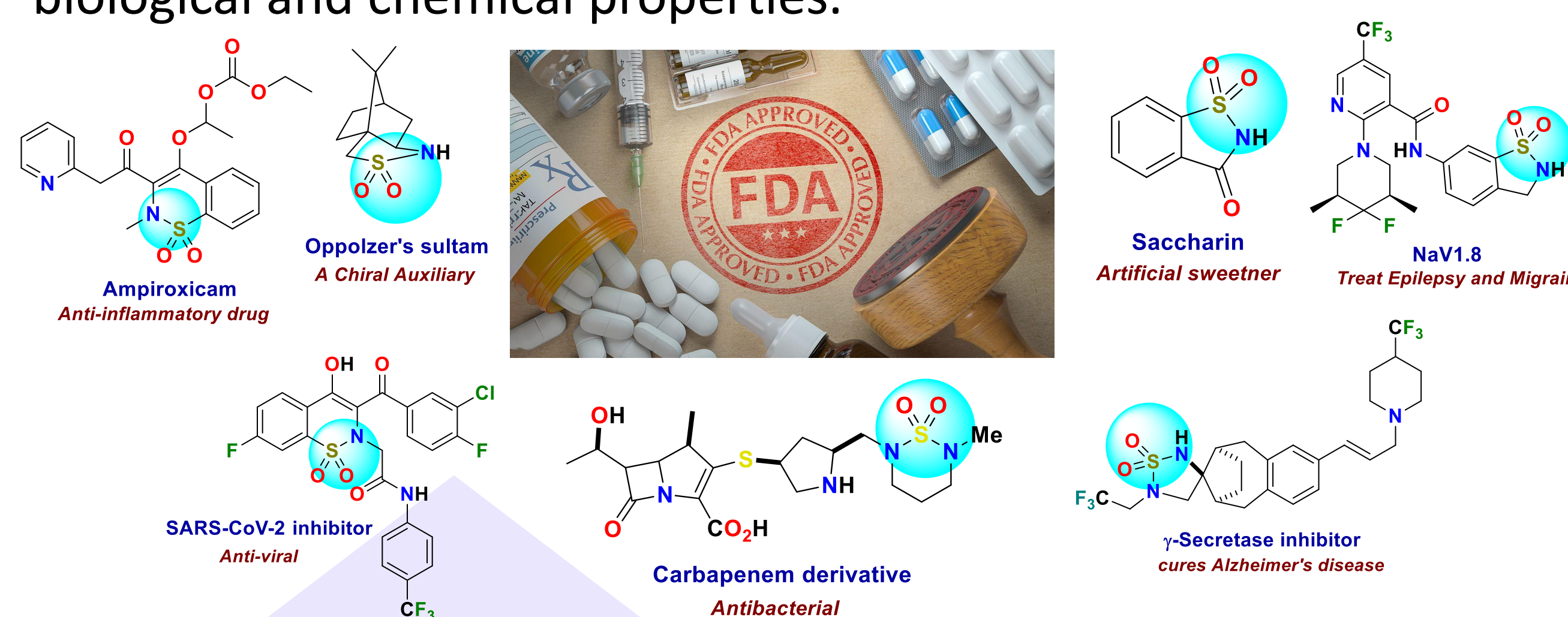
Examples of Anti-inflammatory drugs



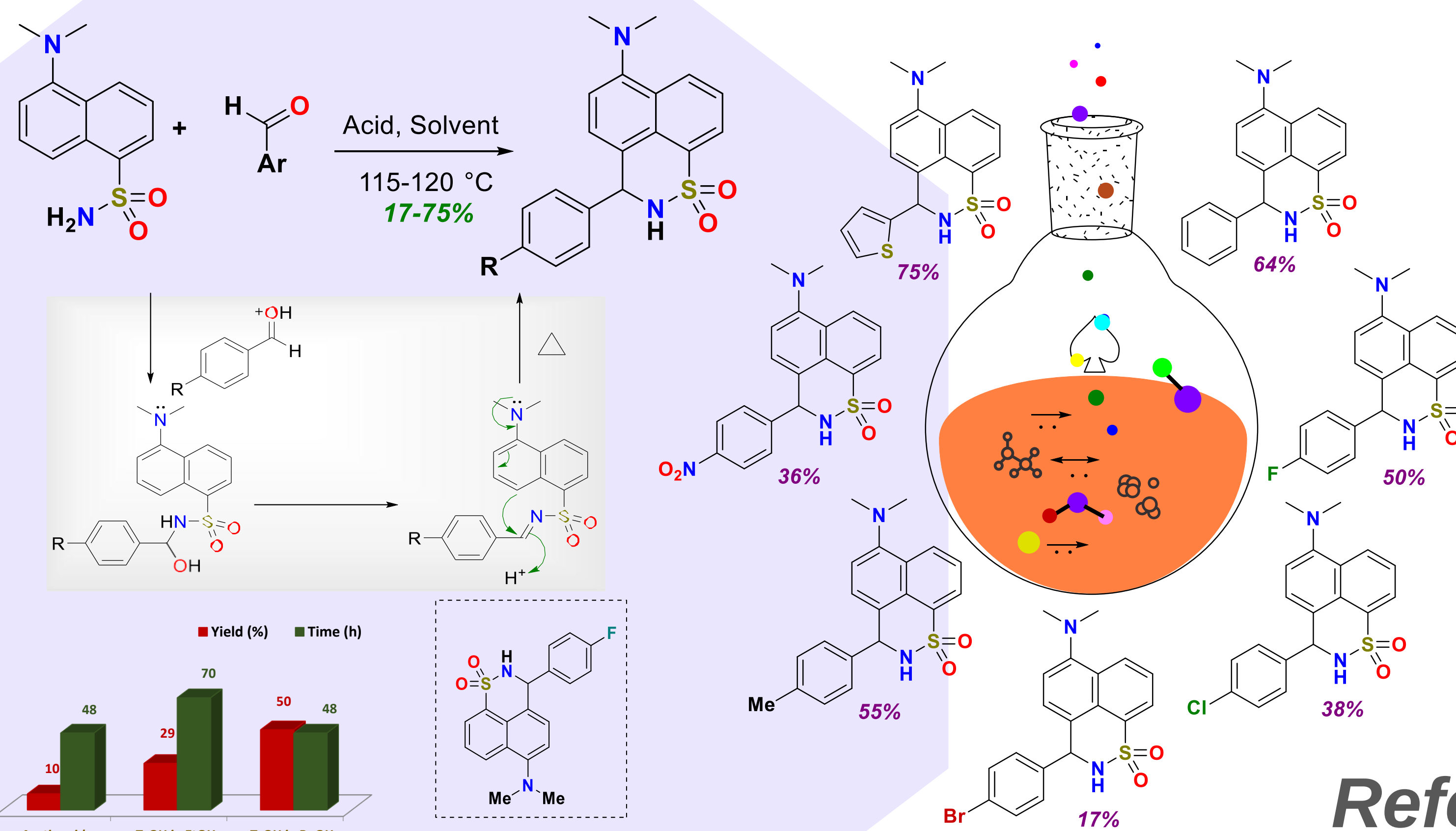
Sultam

- Sultams are the class of compounds with sulfonyl-imide group (-SO₂NH-) in ring and also termed as cyclic sulfonamides.
- They are used extensively in the asymmetric syntheses of organic compounds as chiral auxiliaries.
- They have arisen as sustainable medicinal chemotypes due to its biological and chemical properties.

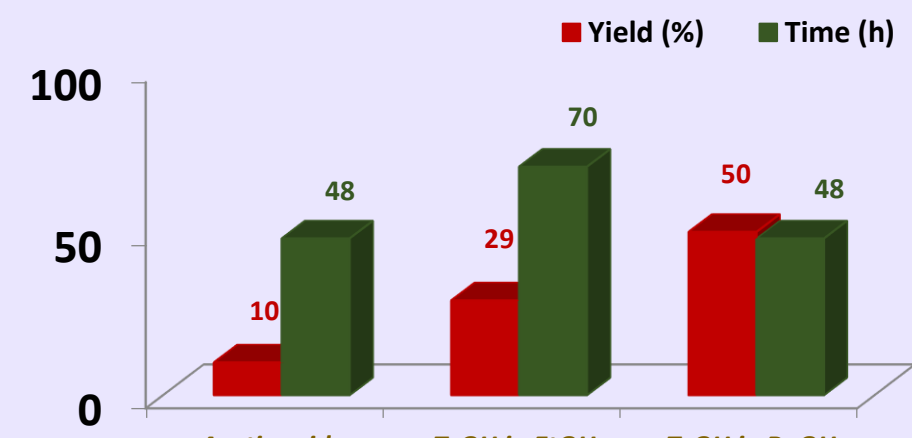
Examples of Sultam Analogues



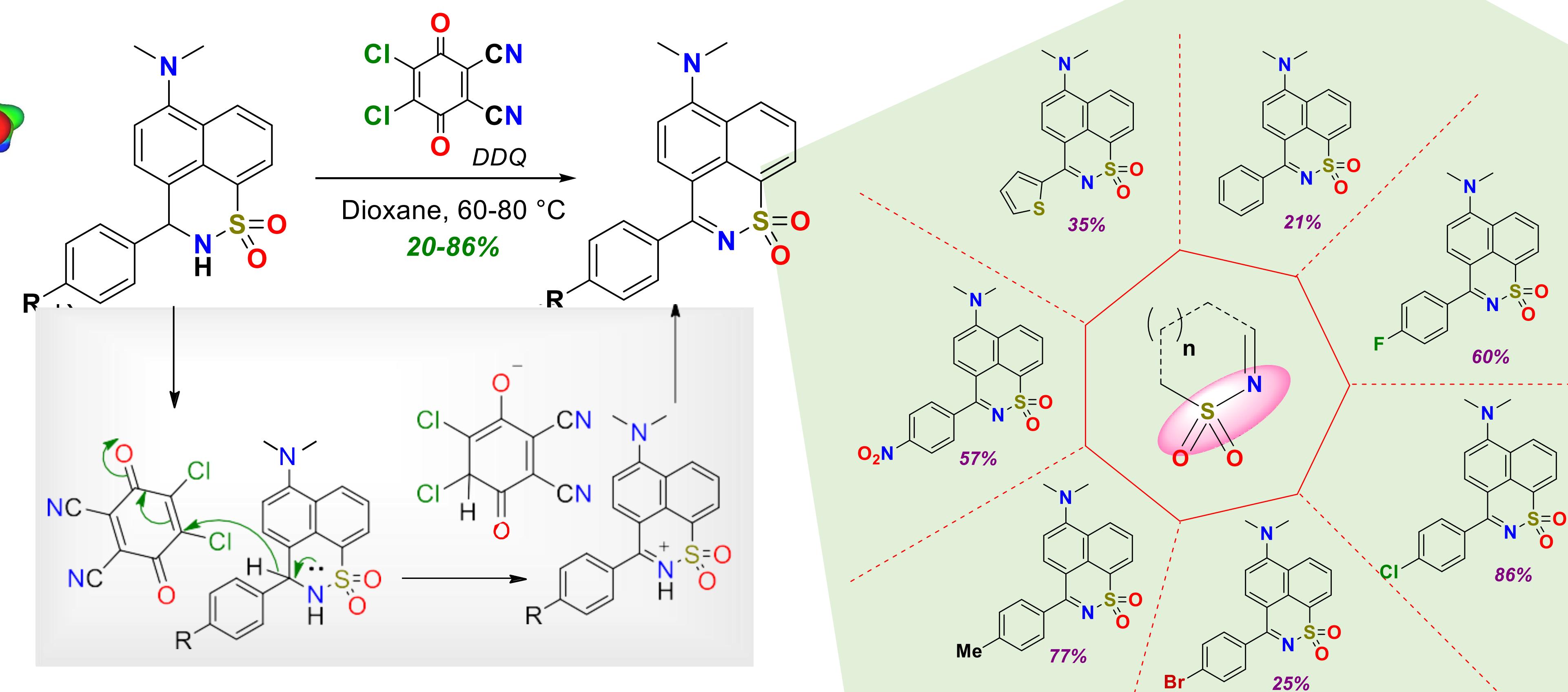
One-Pot Synthesis of Dansyl-based Sultam



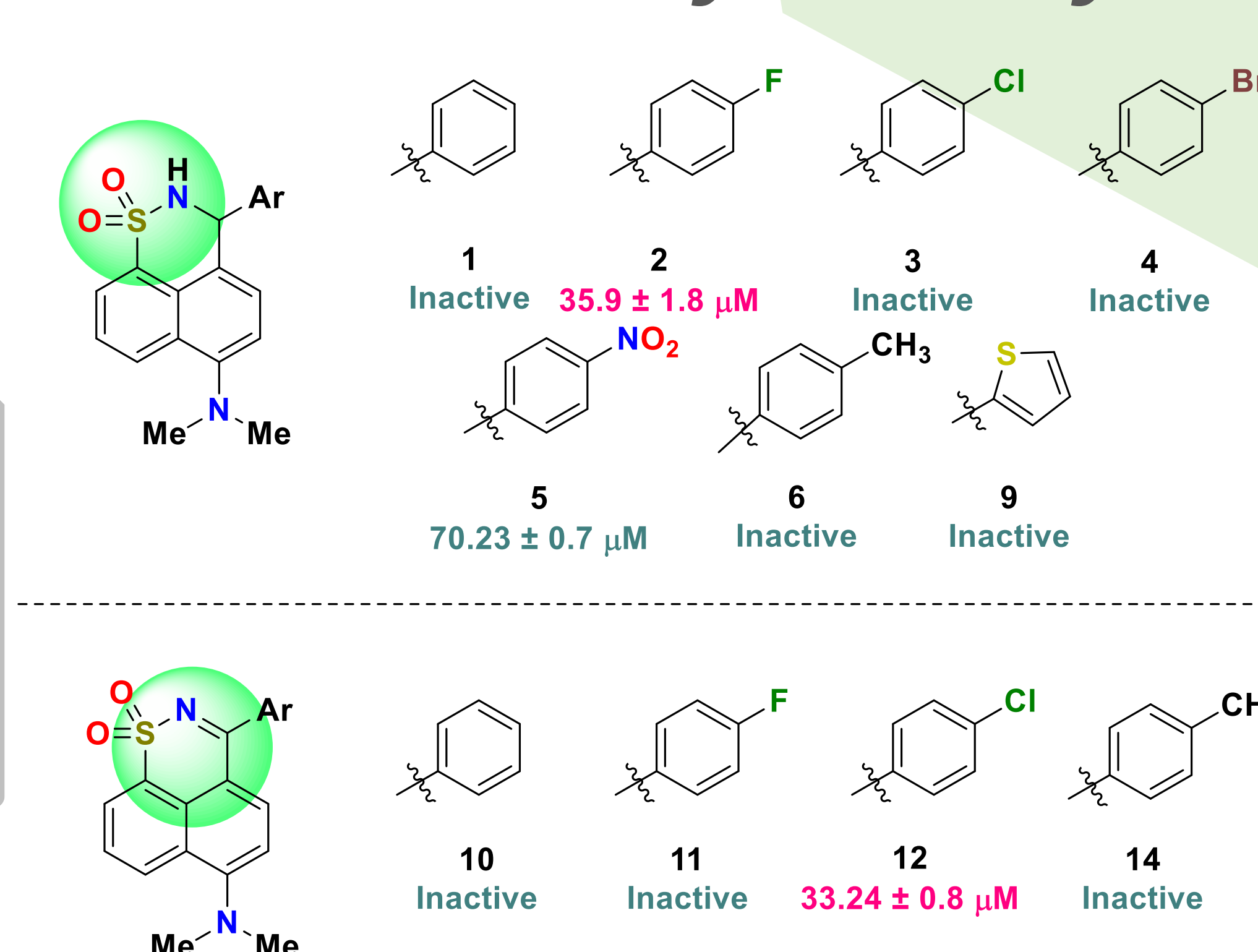
Optimization



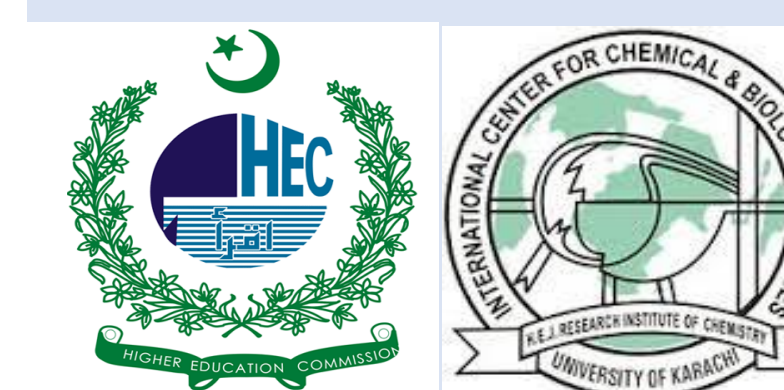
One-Pot Oxidation of N-Sulfonyl Imines Analogues



ROS Inhibitory Activity



Acknowledgements



References

Carty, T. J., Marfat, A., Moore, P. F., Falkner, F. C., Twomey, T. M., and Weissman, A. (1993). Ampiroxicam, an anti-inflammatory agent which is a prodrug of piroxicam. *Agents and Actions*, 39, 157-165.