A study of Oxindole Derivatives by heterogeneous catalyst

Malay Jayantkumar Bhatt\*, Jyotindra J Bhatt#

\*Department of Chemistry, H.V.H.P. Institute of Post Graduate Studies and Research,  
Sarva Vidyalaya Campus, Kadi - 38 44 40.

#Department of Chemistry KSKV Kachchh University, Bhuj - 370 001

E-mail: bhatt.malay@gmail.com

Abstract:

Oxindole exhibits wild range of applications due to their potent biological activities. Such as antiviral, antifungal, antibacterial, antiproliferative, anticancer, antiinflammatory, antihypertensive and anticonvulsants, CNS depressants. They are aromatic heterocyclic compounds with a bicyclic, benzo-fused structure. As endogenous aromatic organic compounds, are found in the tissues and body fluids of mammals and in the natural products of some plants. Virus like HIV is a global health threat and infects millions of people. Oxindloe also used to exhibit the replication of HIV and combat the infections that are caused by drug-resistant, drug-sensitive and mutant strain of HIV. The activity against HIV is found due to its interactions with the reverse transcriptase. Studies of the relationship between their structure and biological action have resulted in the identification of compounds that possesses micromolar activity against lung cancer cells. 3-phenyloxindole is the potent scaffold. Some non-steroidal oxindoles have been possessed anti-inflammatory action. The cyclooxygenase-inhibiting activity and cytokine modulating properties have been established by researchers for the treatment of rheumatoid arthritis and osteoarthritis respectively. By various literatures survey and understanding the importance of this oxindloe moiety, in the present study some synthesized oxindole derivative have been studied. The process involved condensation of indole and isatin in presence of tungestic acid as a heterogeneous catalyst. Under the mild condition and using relatively easy work-up procedure tungstic acid act smoothly as a heterogeneous catalyst.

KEY WORDS: benzo-fused, micromolar, indole, isatin, heterogeneous catalyst