

Pharmaceutically Favored Heterocycles *via* Baylis-Hillman Chemistry

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Heterocycles form by far the largest of the classical divisions of organic chemistry and are of immense importance biologically, industrially, and indeed to the functioning of any developed human society. Many heterocyclic compounds are biosynthesized by plants and animals and are biologically active. The biological properties of heterocycles in general make them one of the prime interests of the pharmaceutical industry and biotechnology industry. In this context we have initiated work on the synthesis of heterocycles using Baylis-Hillman reaction. The prominent features of BH reaction, like simple reaction conditions, readily available and cheap chemicals, atom economy, ability to produce densely functionalized products, control of stereochemistry and selectivity are the driving or attractive points for medicinal chemists to utilize and exploit in making variety of chemicals having pharmaceutical importance. The objective/aim of the presentation is to comprehend our results on medicinally important publications in connection with BH chemistry and further provide guidelines to use this reaction for the synthesis of pharmaceutically important entities. The work presented on this subject will definitely have an impact over pharmaceutical companies.

Some of Our Publications:

(1) SYNLETT, **2004**, 1285; (2) J.Chem.Res., **2004**, 480; (3) Bioorganic & Medicinal Chem. Lett., **2005**, *15*, 1121; (4) Tetrahedron, **2006**, *62*, 8398; (5) Tetrahedron, **2006**, *62*, 954; (6) Bioorganic & Medicinal Chemistry, **2006**, *14*, 4600; (7) Bioorganic & Medicinal Chem. Lett., **2006**, *15*, 5378; (8) Euro. J. Med.Chem., **2006**, *41*, 1240; (9) US 6479664 B1; (10) Indian J. Chem. Tech. **2006**, *13*, 302; (11) Indian J. Chem. (B), **2006**, *45*, 1259; (12) Acta crystallographica, **2006**, *62*, 5063; (13) Structral Chem., **2006**, *17*, 561; (14) Catal. Commun., **2007**, *8*, 107; (15) J. Mol.Catal. A, **2007**, *265*, 227; (16) Ind.J.Chem. (B), **2007**, *46*, 1833; (17) Cata. Lett. **2008**, *121*, 291; (18) J. Mol.Catal. A, **2009**, *229*, 221; (19) Asian J. Chem., **2009**, *21*, 829; (20) Photo chem. & Photobiol.Sci., **2009**, *21*, 829; (21) Catal.Lett. **2009**, *132*, 480; (22) J. Entomology, **2008**, *5*, 45; (23) SYNLETT, **2008**, 2023; (24) J. Heterocyclic Chem. **2009**, *56*, 997; (25) J.Heterocyclic Chem. **2009**, *46*, 1213; (26) Helv.Chimica Acta, **2009**, *92*, 959; (27) Biorg.Chem., **2009**, *37*, 46; (28) Bioorg. Med. Chem. Lett., **2009**, *19*, 5915; (29) Tetrahedron Letters, **2009**, *50*, 4229; (30) Photochemical and Photobiological Sciences, **2009**, *8*, 513; (31) Eur.J.Med.Chem., **2009**, *44*, 4661; (32) Synth. Commun., **2010**, *40*, 686; (33) Journal of Photochemistry and Photobiology A, **2010**, *214*, 145; (34) Helv. Chim.Acta, **2010**, DOI 10.1002/hlca.201000291; (35) Synthesis, **2010**, 573; (36) International J. Pharma & Biosciences, **2011**, *2*, 191-202; (37) Het. Commun., **2011**, *17*, 111-119; (38) Synthesis, **2011**, 451-458; (39) Helv.Chem.Acta, **2011**, *94*, 669-674; (40) Med.Chem.Comm., **2011**, *2*, 486-492; (41) Synth. Commun., **2012**, *42*, 3419; (42) Bioorg. Med. Chem. Lett., **2012**, *22*, 6010; (43) Bioorg. Med. Chem. Lett., **2012**, *22*, 1103; (44) Bioorg. Med. Chem. Lett., **2012**, *22*, 7011; (45) J. Chem. Sci., **2012**, *124*, 513; (46) Euro. J. Med.Chem., **2013**, *65*, 389; (47) Euro. J. Med.Chem., **2013**, *59*, 304; (48) Med. Chem. Res., DOI 10.1007/s00044-013-0584-6; (49) *US/India-2012 Patent*, CSIR Reference No. 0090NF-2012; Application No; 0287/DEL/2013; (50) *US/India-2012 Patent*, CSIR Reference No. 0005NF-2013; Application No; 0288/DEL/2013; (51) Eur.J.Med.Chem., **2014**, *71*, 53; (52) *Bioorg. Med. Chem. Lett.*, **2014**, *24*, 1952; (53) *European Journal of Medicinal Chemistry*, **2014**, *83*, 569; (54) *Med Chem Res*, **2014**, *23*, 1934; (55) *Med Chem Res*, **2014**, *23*, 3207; (56) *RSC Adv.*, **2014**, *4*, 8365; (57) *IJPSR*, **2014**, *5*, 1000; (58) *Journal of Liquid Chromatography & Related Technologies*, **2015**, *38*, 259;