

Ag (I) Catalyzed Domino Carbonyl and Alkyne Activation: A Smooth Entry to 2, 2'-Di-Substituted 3, 3'-Bisindolylarylmethanes

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Abstract : An efficient synthesis of symmetrical 2, 2'-Di-substituted 3, 3'-bisindolylarylmethanes (BIAMs) having different aryl and hetero-aryl moieties has been developed by Ag(I)-catalyzed indolization and a sequential deoxygenative addition involving o-alkynylanilines and aryl/hetero-aryl aldehydes as substrates. Alkyne and carbonyl units could be activated by Ag (I) simultaneously which results in a domino 5-endo-dig indole annulation, addition of C3 of this indole nucleus to the carbonyl carbon in addition to second indole annulation, and its dehydroxylative addition to the same carbonyl carbon to furnish BIAMs in excellent yield. As 3, 3'-bisindolylmethanes (BIMs) are biologically significant scaffolds, this moiety with further substitutions at the indole core could find some important use in medicinal chemistry. The methodology developed is atom-economic and involves more accessible silver salts, which could be useful for large-scale synthesis.

Keywords : alkyne, 3, 3'-Bisindolylarylmethanes, carbonyl, domino, 5-endo-dig indole annulation, silver catalyst

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