Synthetic study using bioinspired strategy toward (±)-palodesangrens

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Abstract: Palodesangrens A-E with anti-androgenic activities were isolated from the bark of Brosimum rubescens Taubert. Interestingly, among the naturally-occurring Diels-Alder adducts, palodesangrens were proposed to be the first natural Diels-Alder adducts derived biosynthetically from the corresponding chalcones and prenylcoumarins. To the best of our knowledge, no synthetic study on such molecules has ever been reported. We are now developing a bioinspired synthetic strategy toward the tricyclic 6,7-diaryl-tetrahydro-6H-benzo[c]chromene core 5 which would be derived from tricyclic lactone 4. Herein, we discuss synthetic routes toward tricyclic lactone 4 from aldehyde 1 using intramolecular Wittig methylenation, dehydration and Diels-Alder reactions of triene 3 as the key steps.

Keywords: Palodesangrens; Diels-Alder reaction