

MICHAEL-ADDITION/CYCLIZATION OF CYCLOPENTANE-1,2-DIONE TO ALKYLIDENEMALONONITRILES

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Asymmetric organocatalytic Michael addition of cyclopentane-1,2-dione (CPD) to different electrophiles has been previously reported by our group [1, 2, 3]. In this work, asymmetric organocatalytic Michael-addition/cyclization cascade of CPD to substituted malononitriles has been investigated. Preliminary results show that CPD undergoes an organocatalytic reaction with benzylidenemalononitrile using DABCO in catalytic amount to give the product in good yield. Moreover, asymmetric version of this cascade was investigated using various enantiomerically pure H-bond catalysts. With alkaloid derived thiourea catalyst moderate to good yields and moderate to good enantioselectivity were achieved.

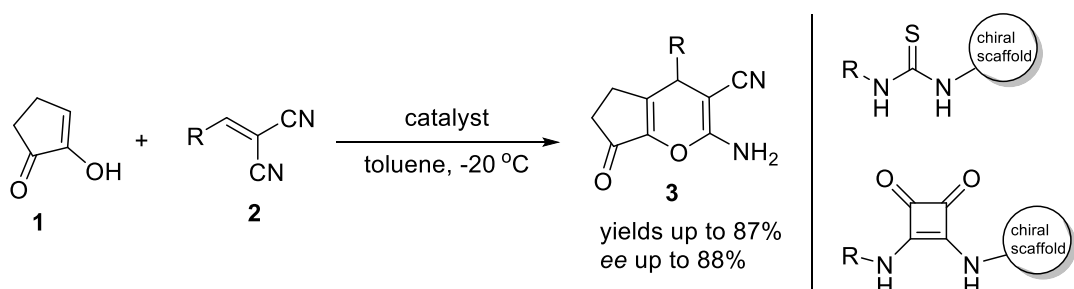


Figure 1 Michael-addition/cyclization

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References

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