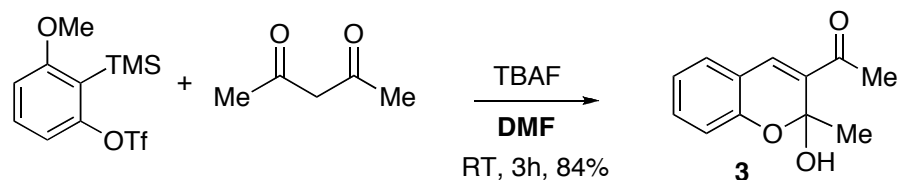
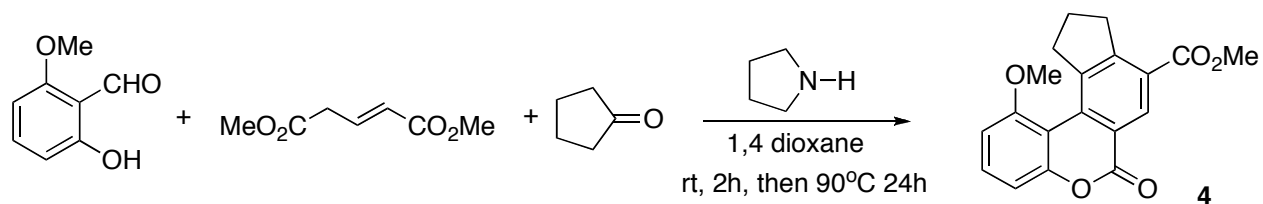


(3) **20 pts.** Recently, Miyabe reported a very interesting three-component coupling reaction toward 2*H*-chromene skeleton [Angew. Chem., Int. Ed. **2011**, 50, 6638]. Propose a detailed arrow-pushing mechanism for the formation of **3**.



Hints: TBAF = Tetra-*n*-butylammonium fluoride; **DMF** = *N,N*-dimethylformamide

(4) **20 pts.** Very recently, Bodwell reported an MCR toward 6*H*-dibenzo[*b,d*]pyran-6-one **4** [Org. Lett. **2012**, 14, 310]. Propose a detailed arrow-pushing mechanism for this reaction.



(5) **10 pts.** The oldest three-component coupling reaction known (1850) was employed in the famous Strecker Synthesis. Give example of this transformation.