Significance: Coumarin derivatives are a broad class of biological interesting molecules. The zinc-catalyzed system presented provides an efficient access to the direct precursors of such compounds with excellent yield (up to 99%) and enantioselectivity (up to 97%).

Comment: The authors report a PYBOX–DIPH–Zn(II) catalyzed asymmetric Michael reaction and its successful application in the synthesis of coumarin derivatives. This method can tolerate a wide range of cyclic 1,3-dicarbonyl compounds. The resulting products can be easily converted into bioactive molecules such as warfarin and acenocoumarol without loss of enantiopurity.