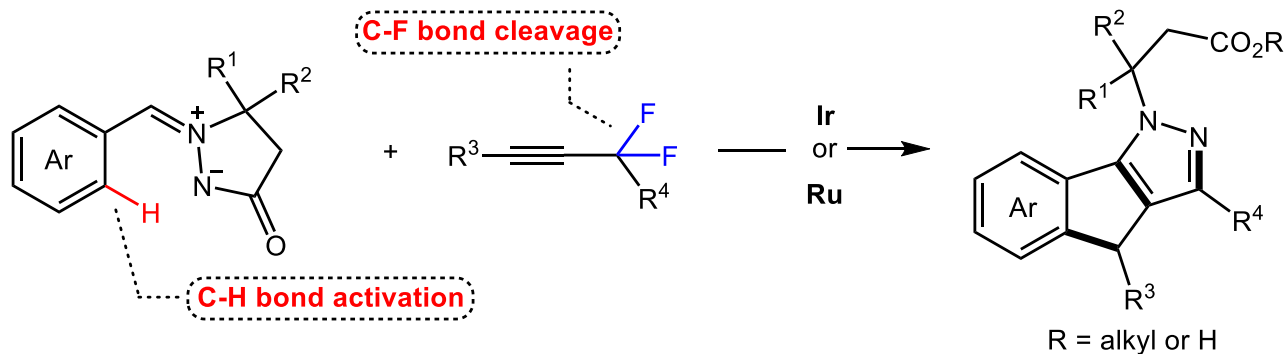




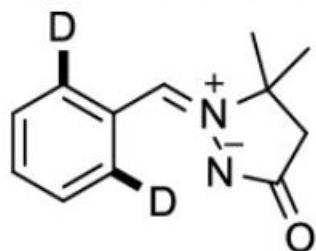
Synthesis of Indenopyrazole Frameworks via Cascade C-H Functionalization/[3+2] Dipolar Cycloaddition Aromatization Rearrangement Reactions



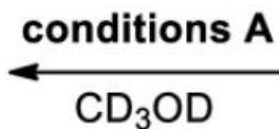
Wu, M.; Zhou, Z.*; Yi, W.* *et al. Org. Lett.* **2020**, 22, 7152-7157

Control Experiments

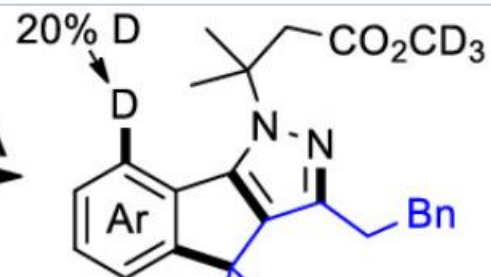
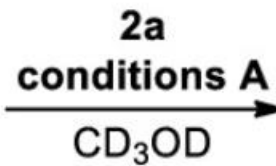
a) deuterium-labeling experiment



76% recovery
64% D



1a

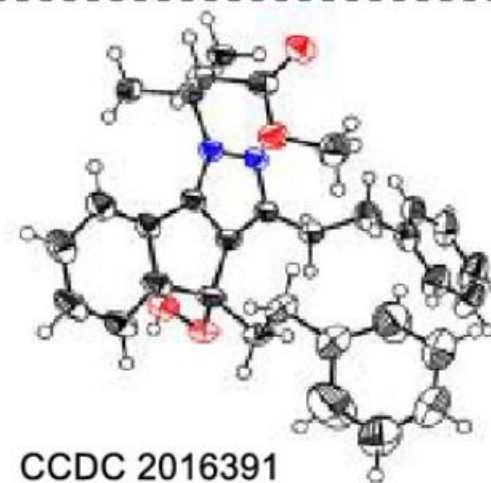
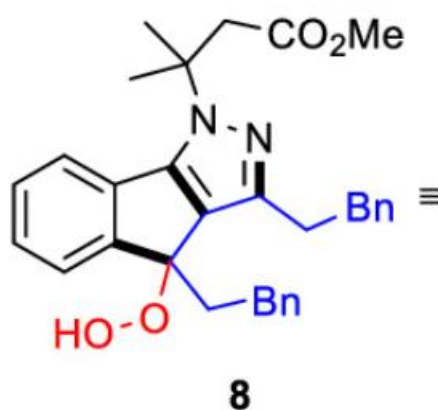
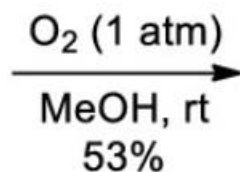
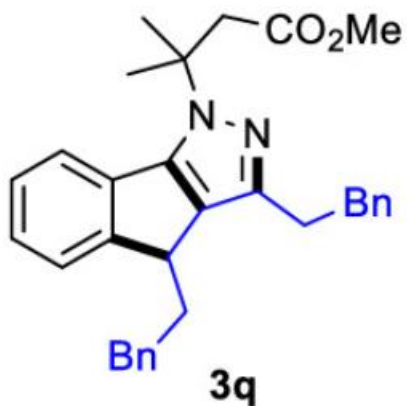


3a, 54%

A: [Cp*IrCl₂]₂, AgSbF₆, MeOH, 60 °C, 24 h

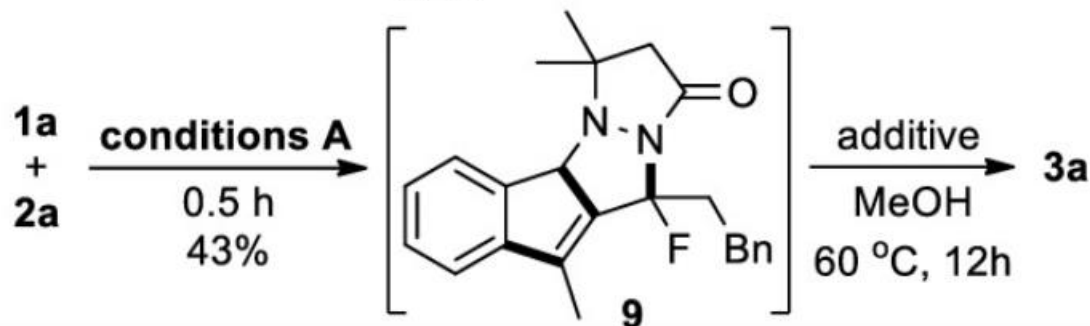
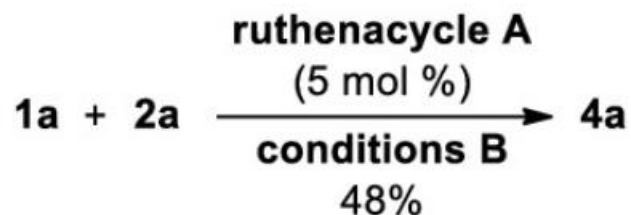
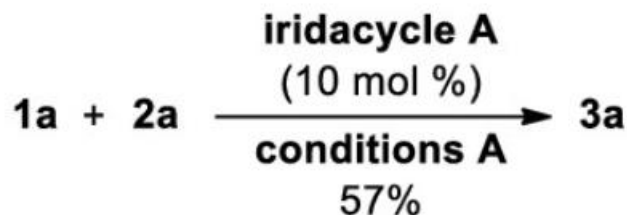
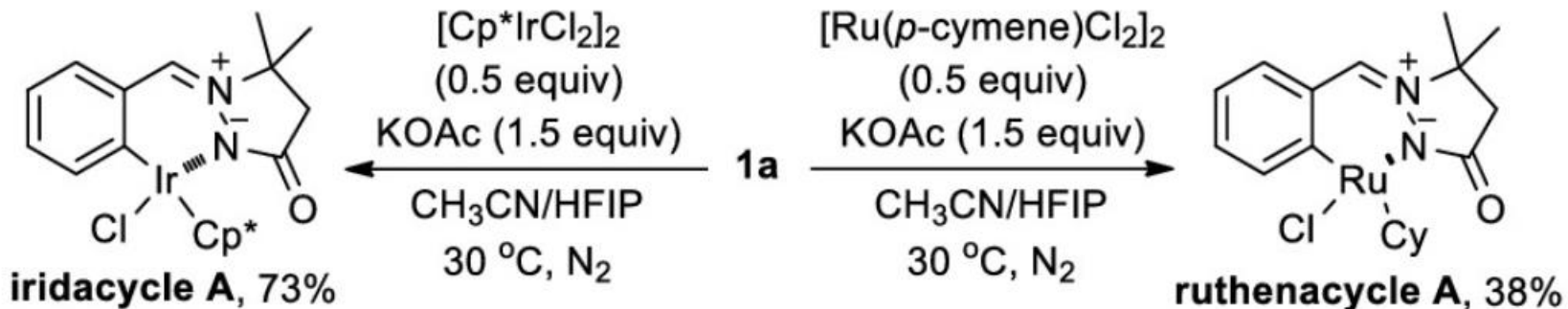
B: [Ru(*p*-cymene)Cl₂]₂, AgSbF₆, DCE, 80 °C, 24 h

b) determination of the structure by X-ray crystallography



Control Experiments

c) intermediate studies



additive (mol %)	yield/%
no	42
AgSbF ₆ (20)	43
[Cp*IrCl ₂] ₂ (5) + AgSbF ₆ (20)	57

Plausible Mechanism

