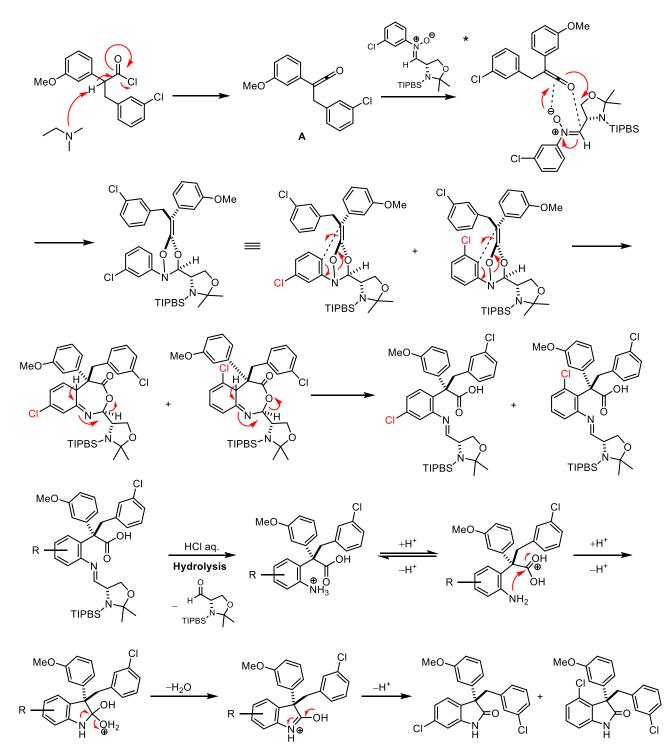
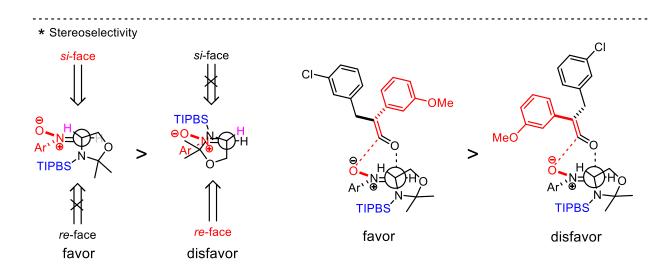
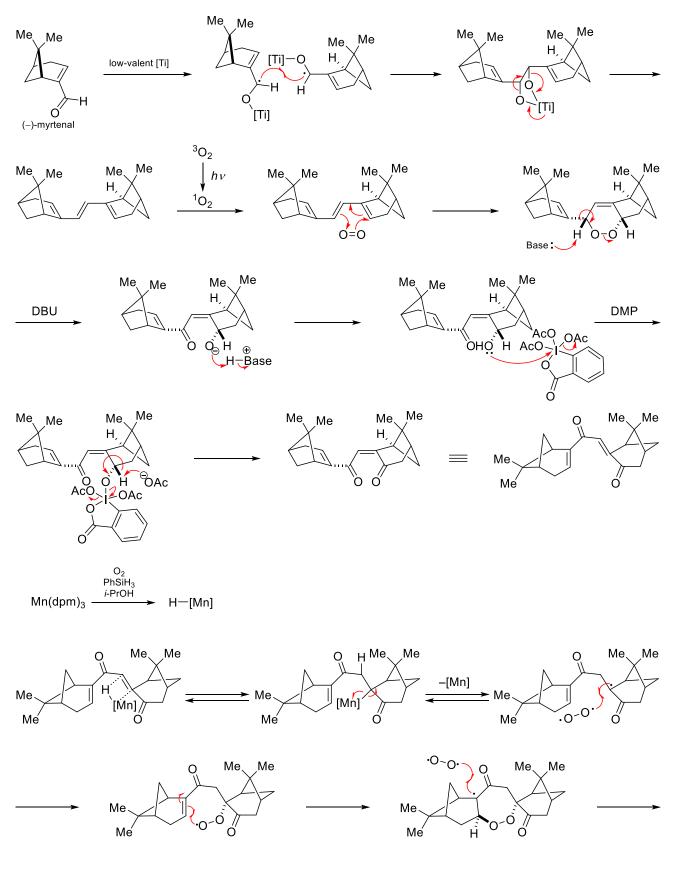
1

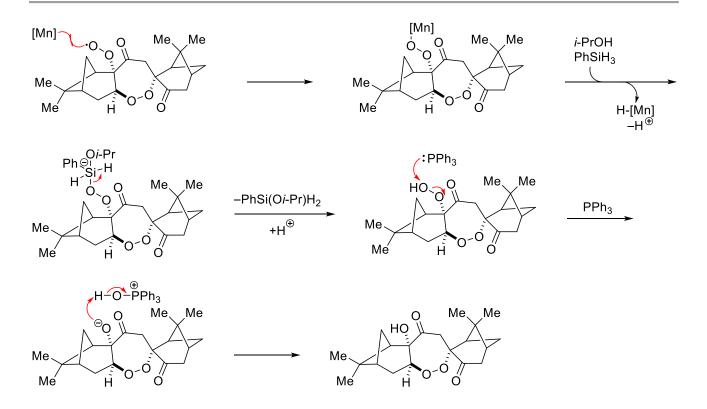




2 ⊖ ⊕ *n-*BuLi . O*i*Pr  $(i-PrO)_2$ H−́Ti(O*i*-Pr)<sub>2</sub> H Ťi(O*i*-Pr)<sub>2</sub> –2LiO*i-*Pr Ò*i*Pr := ⊖ ⊕ n-BuLi (O*i*-Pr)<sub>2</sub> Ti(O*i*-Pr)<sub>2</sub> Ph -TMS Ti(O*i-*Pr)<sub>2</sub> TMS Ph TMS Ph Н Me ϘPh ⊖⊕ OLi 0 Me ⊕€ \_Oi-Pr *i*-PrO Ńе +*i*-PrOLi -TMS O*i*-Pr н  $\Theta \oplus$ ,Oi-Pr Ô –LiO*i*-Pr Ph тмз -*i*-PrOLi Ρh ÒPh Ph тмѕ PhO ⊖ O*i*-Pr Me *i*-PrO OR *Oi*-Pr *i*-PrO Me LiO. \_ *i*-PrO-Ťí ,TMS TMS ,TMS ···OLi Ph Ph LiO .[Ti] LiO TMS \_\_ ⊖ –OPh Ph [4+2] -O*i*-Pr 1 cycloaddition Ме м́е OPh Ρh ÒPh Me TMS Me ⊕ +H TMS OLi чΟН Ph H⊕ [Ti] –[Ti] Ph Ĥ . Me-OH work up В Me TMS Me Me TMS +H<sup>⊕</sup> ••OLi TMS OLi Ph ···OH Ph Ťi*∕Oi*-Pr ∣`O*i*-Pr OR 1,3-metallotropic shift H<sup>⊕</sup> Ph –[Ti] [Ti] work up HO-Me Ńе Α

## 3





4

