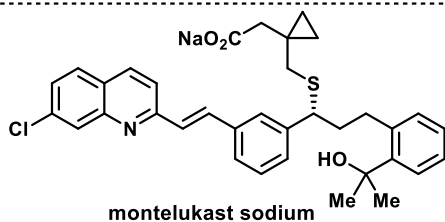
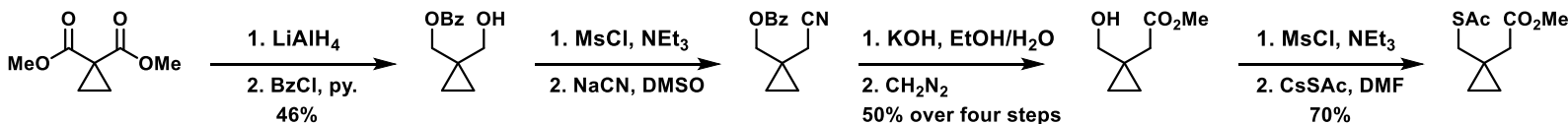
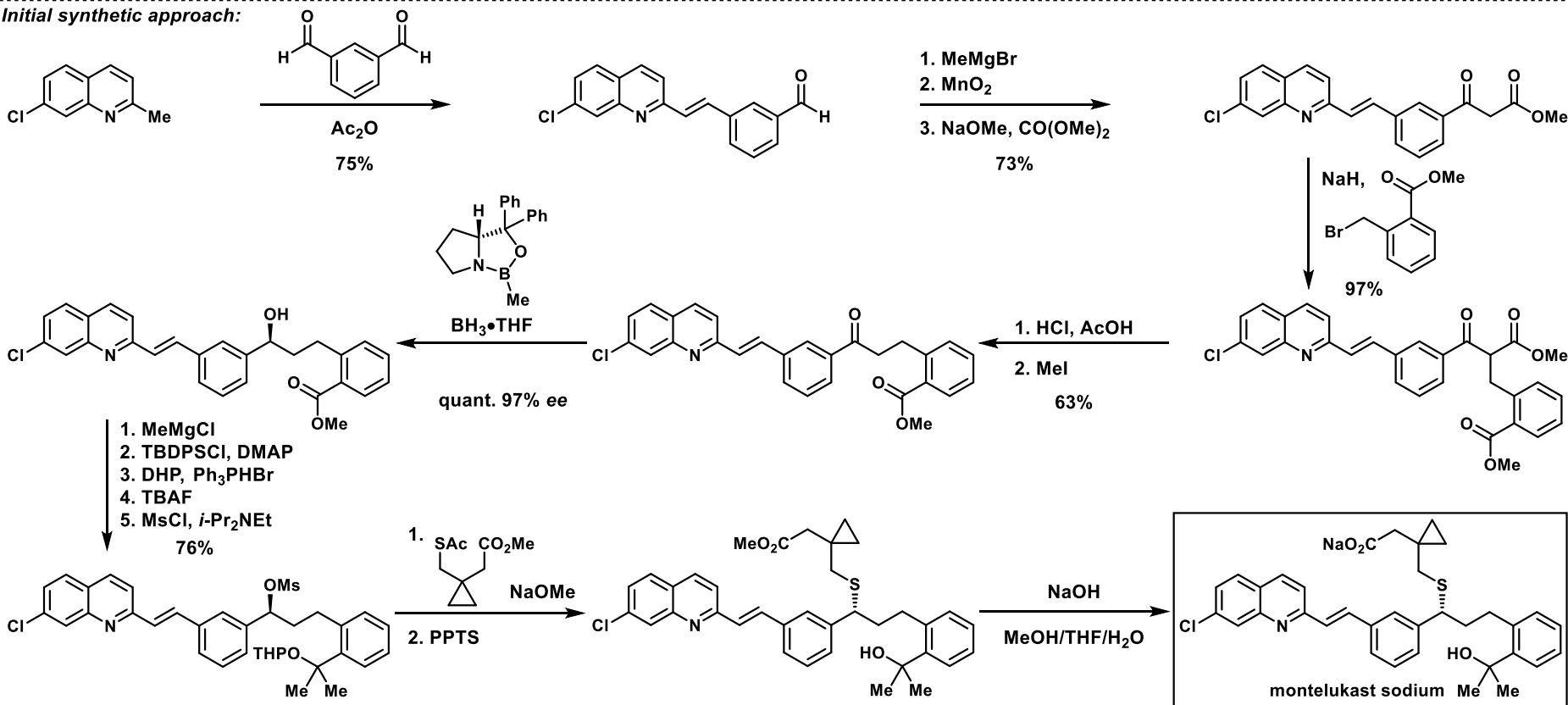


Montelukast sodium (Singular)



- Treatment of asthma and relief of seasonal allergy symptoms
- Leukotriene receptor agonist - binds to CysLT₁ to reduce bronchoconstriction
- Developed by Merck and approved by the FDA in 1998. It is Merck's best-selling drug, earning them ~4.3 billion in 2007 and ~5.5 billion in 2011. Sales fell after montelukast went generic in 2012.
- Major side effects are suicidal thoughts and behavior. Singular was part of an FDA investigation regarding the connection between neuropsychiatric effects and leukotriene modulator drugs

Initial synthetic approach:



Montelukast sodium (Singulair)

Process Route: