Application of RCM to Epothilone A:

1. LDA (2.2 equiv) THF, -78 → -40 °C;

2. THF, -78 → -40 °C

3. 2-Trimethylsilylacrylate

4. DCC, DMAP, C6H5CH3

5. 45% + 25% (6S,7R) diastereomer (3 steps)

50% + 35% E-isomer

1. TFA, CH2Cl2, 98%
2. m-CPBA, C6H5, 55%, (along with 40% α-epoxide and the epoxide derived from the trisubstituted olefin)

Epothilone A