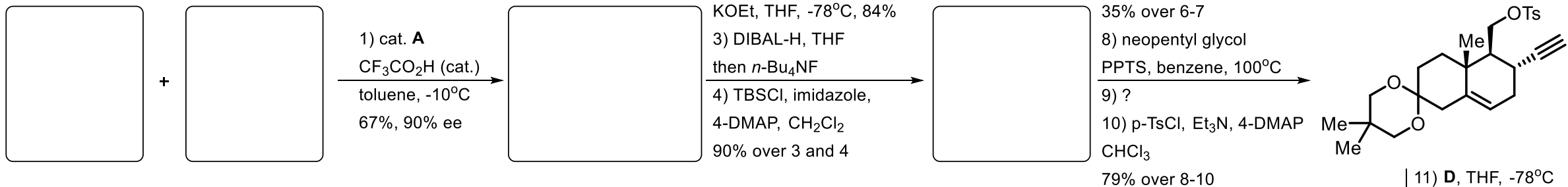


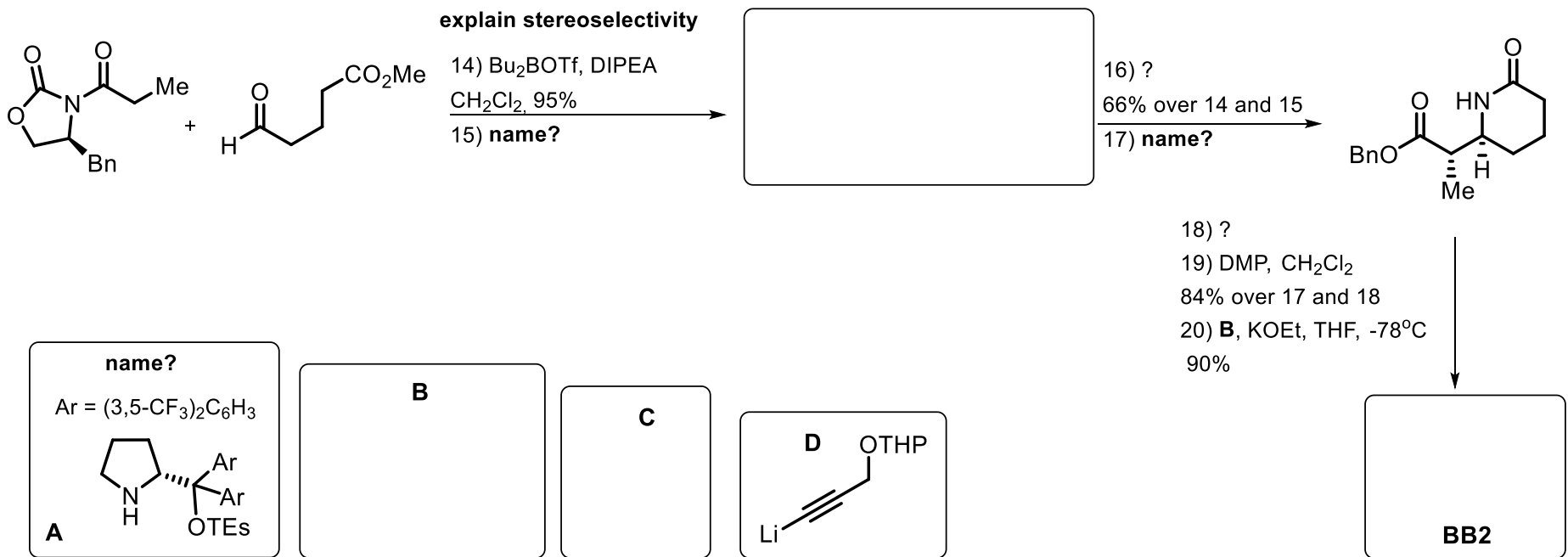
Total synthesis of (+)-Heilonine

Synthesis of BB1



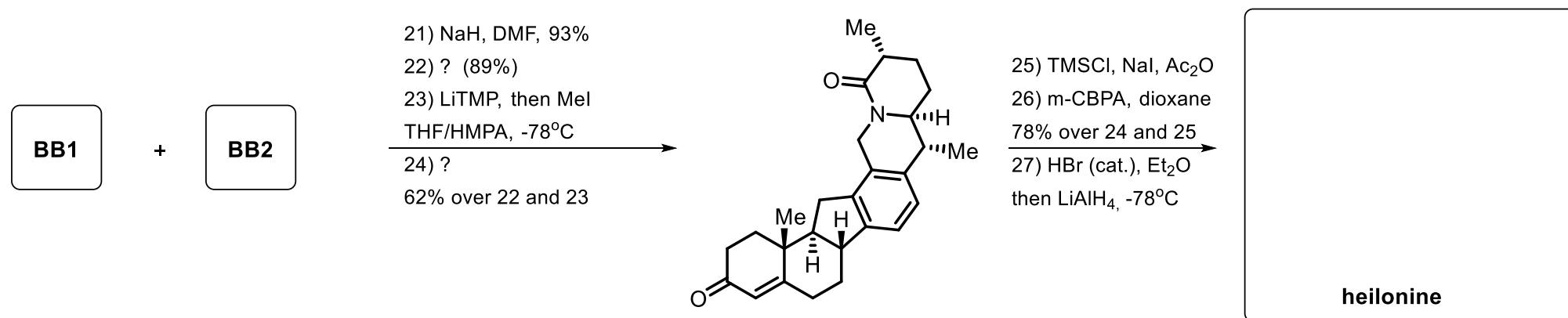
5-7 name?

Synthesis of BB2



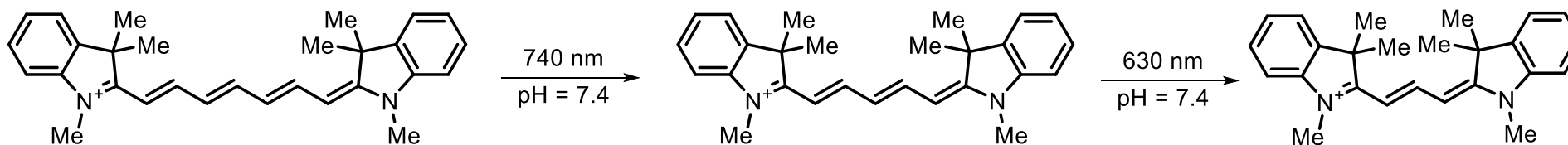
11) D, THF, -78°C
 12) Bi(OTf)₃, (cat)
 CH₃CN, -10°C
 13) ?
 58% over 11-13
BB1

Total synthesis of (+)-Heilonine



Phototruncation of cyanine dyes (Bonus)

Suggest mechanism of the following light-promoted transformation of cyanine dyes to blue-shifted emissive products



Hints:

- photoconversion does not occur in any nonaqueous solvent
- is intramolecular
- O₂ is required for the transformation