

# Stereocontrolled Total Syntheses of (-)-Rotenone and (-)-Dalpanol by 1,2-Rearrangement and S<sub>N</sub>Ar Oxycyclizations

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## Education

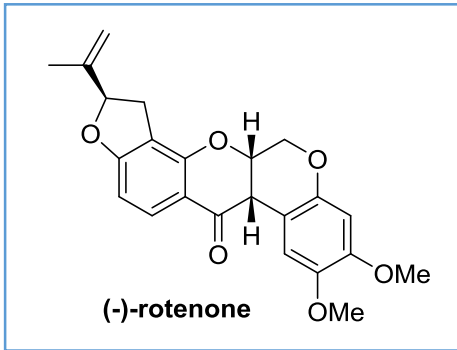
- |      |   |
|------|---|
| 1978 | B.S., Chemistry, University of Tokyo                    |
| 1980 | M.S., Chemistry, University of Tokyo                    |
| 1983 | Ph.D., Chemistry, University of Tokyo (Prof. Mukaiyama) |

Since 1996 Full Professor, Tokyo Institute of Technology

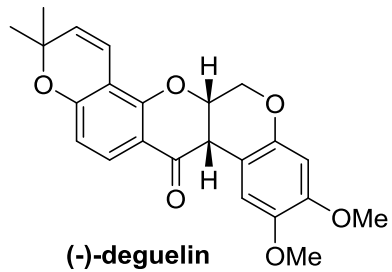
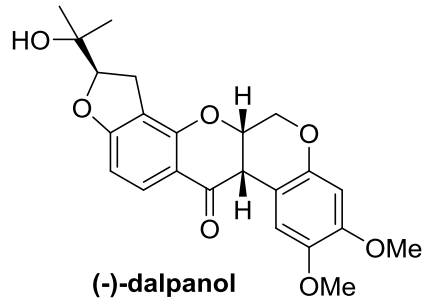
**Prof. Dr. Keisuke Suzuki**

**Camilo M.  
Group Renaud.**

# ROTENOIDS



- Structural elucidation: 1932
- First total synthesis (Racemic): Matsui, 1967.
- Chiral, non-racemic form: Yamashita, 1979.

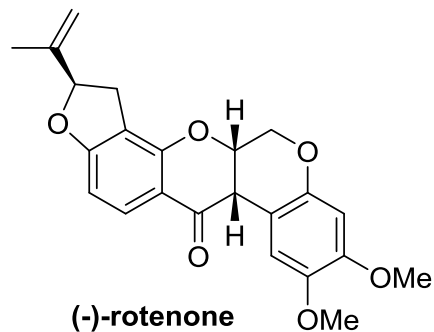


*Derris scandens*



*Lonchocarpus violaceus*

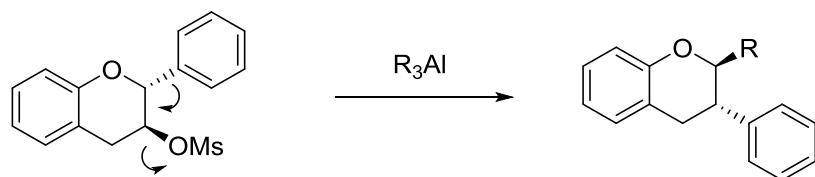
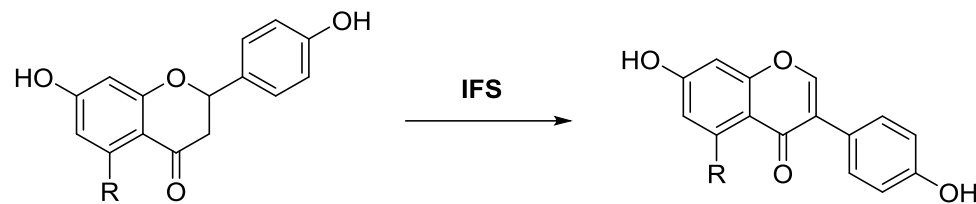
# Retrosynthetic analysis (Initial considerations)



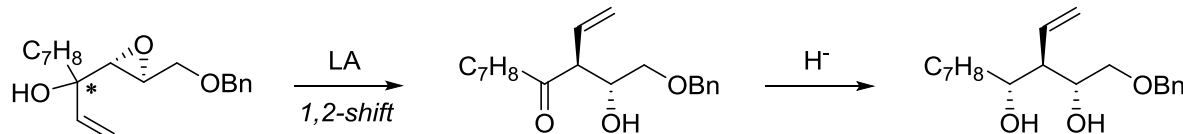
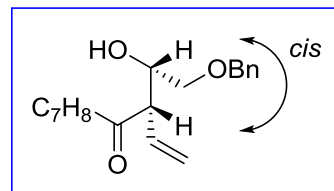
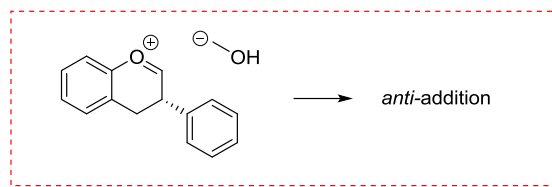
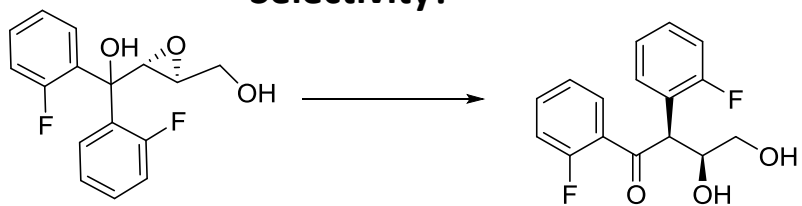
Isoflavonoid

15-carbon skeleton, C6-C3-C6 connectivity

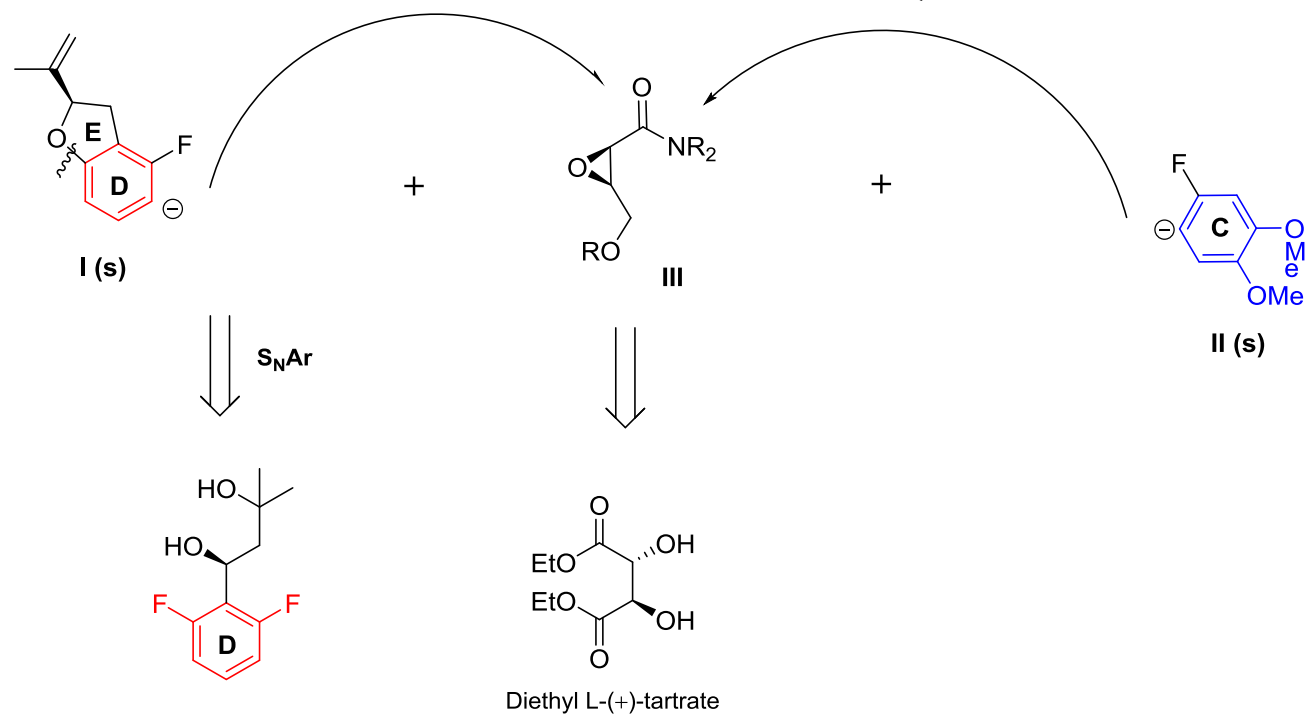
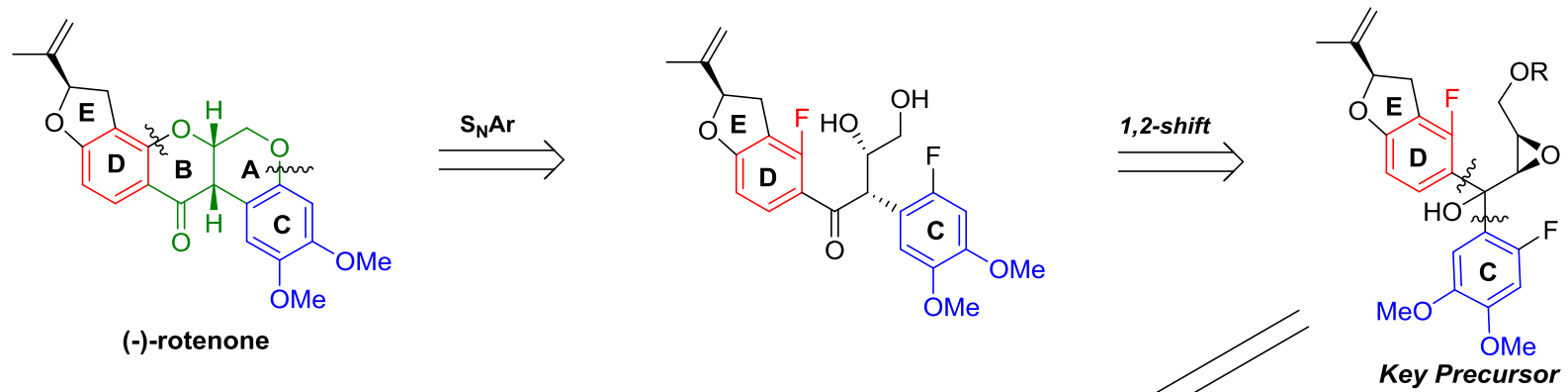
Biosynthesis of the major classes of flavonoid derivatives.



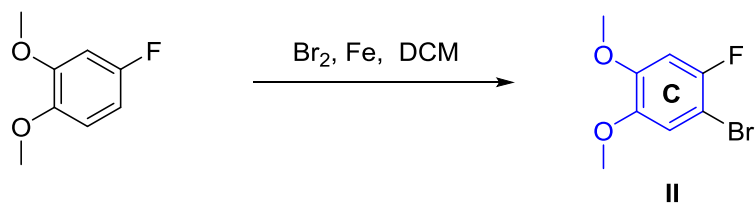
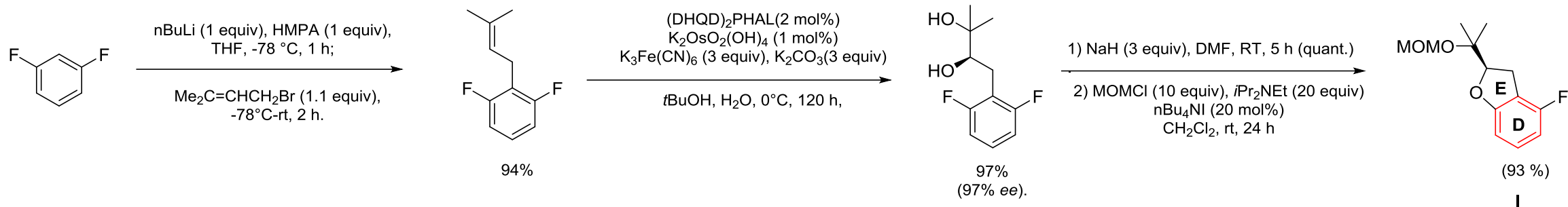
Selectivity?



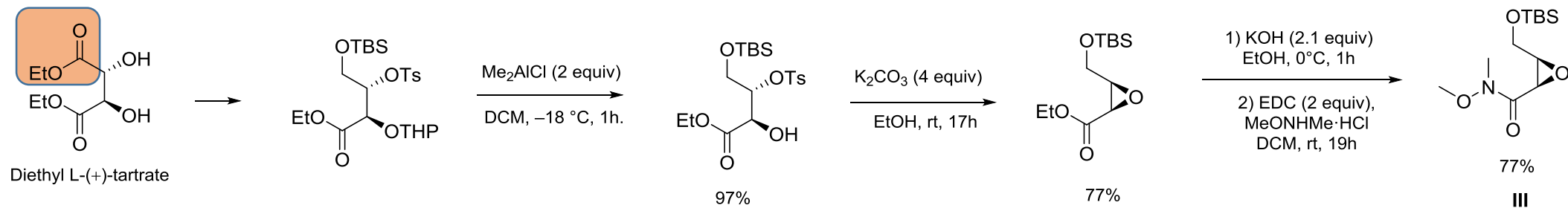
# Retrosynthetic analysis



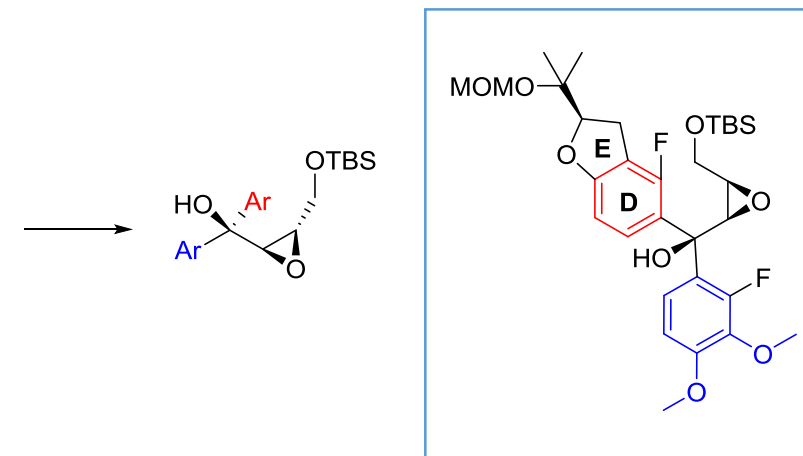
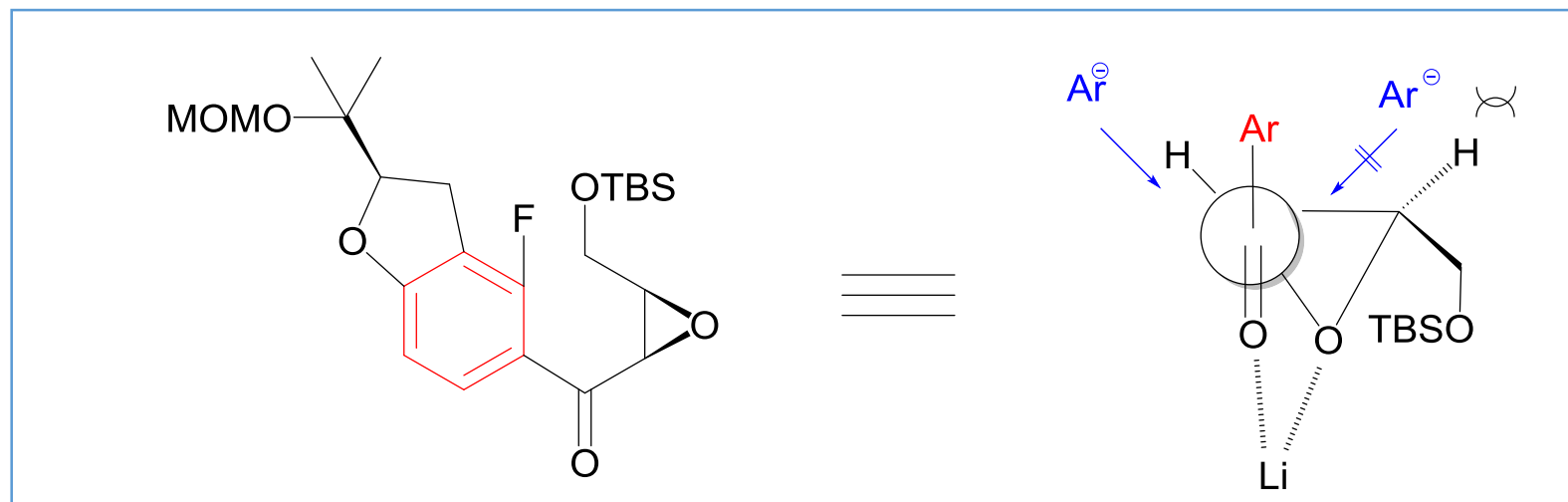
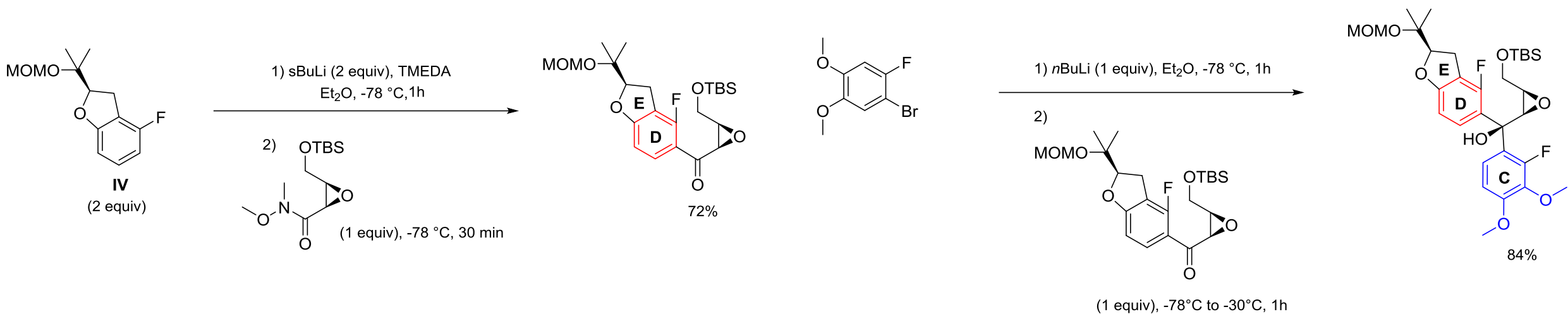
# Synthesis of fragments I, II and III



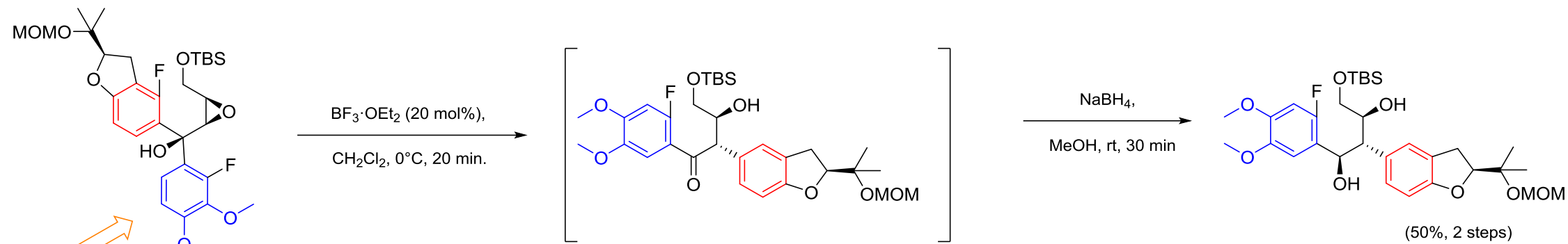
## Reduction "BH<sub>3</sub>"



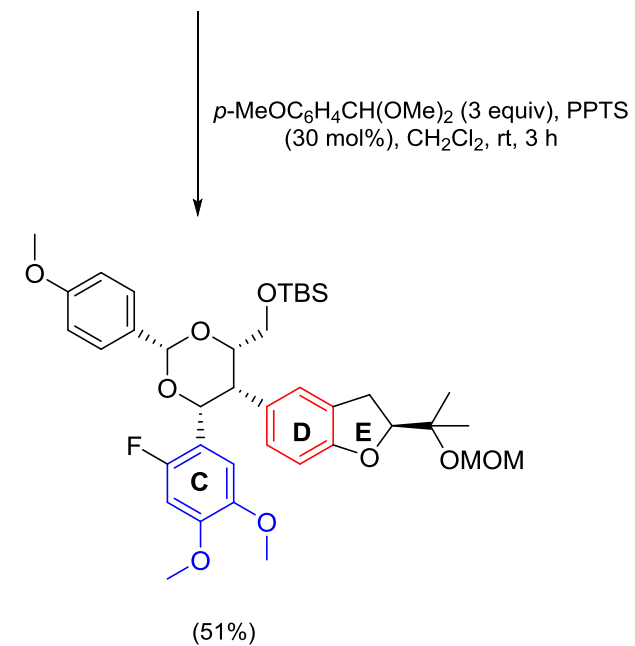
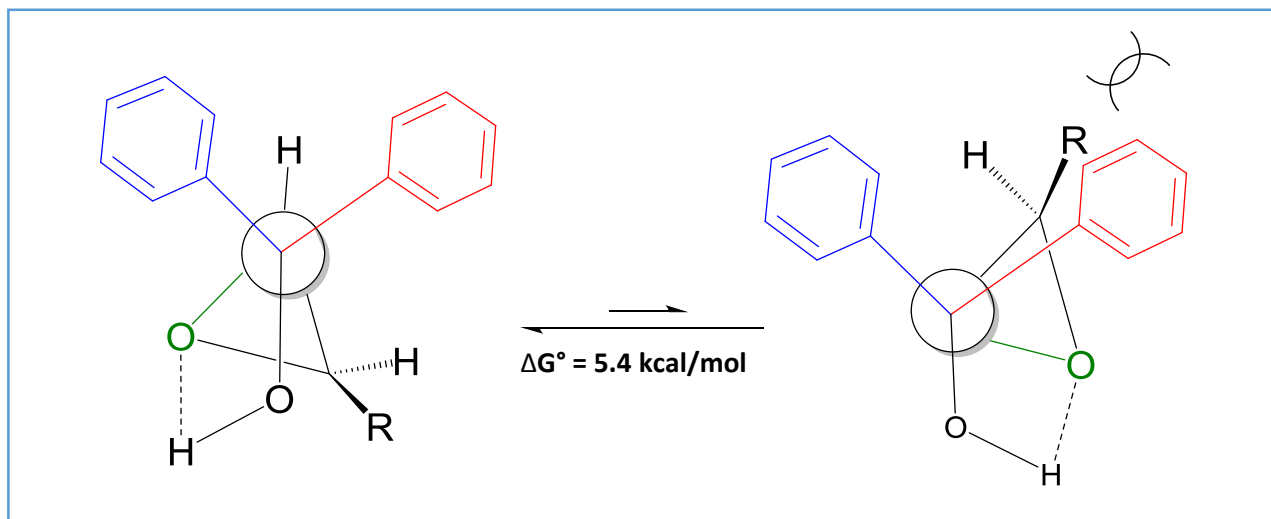
# Synthesis of key precursor



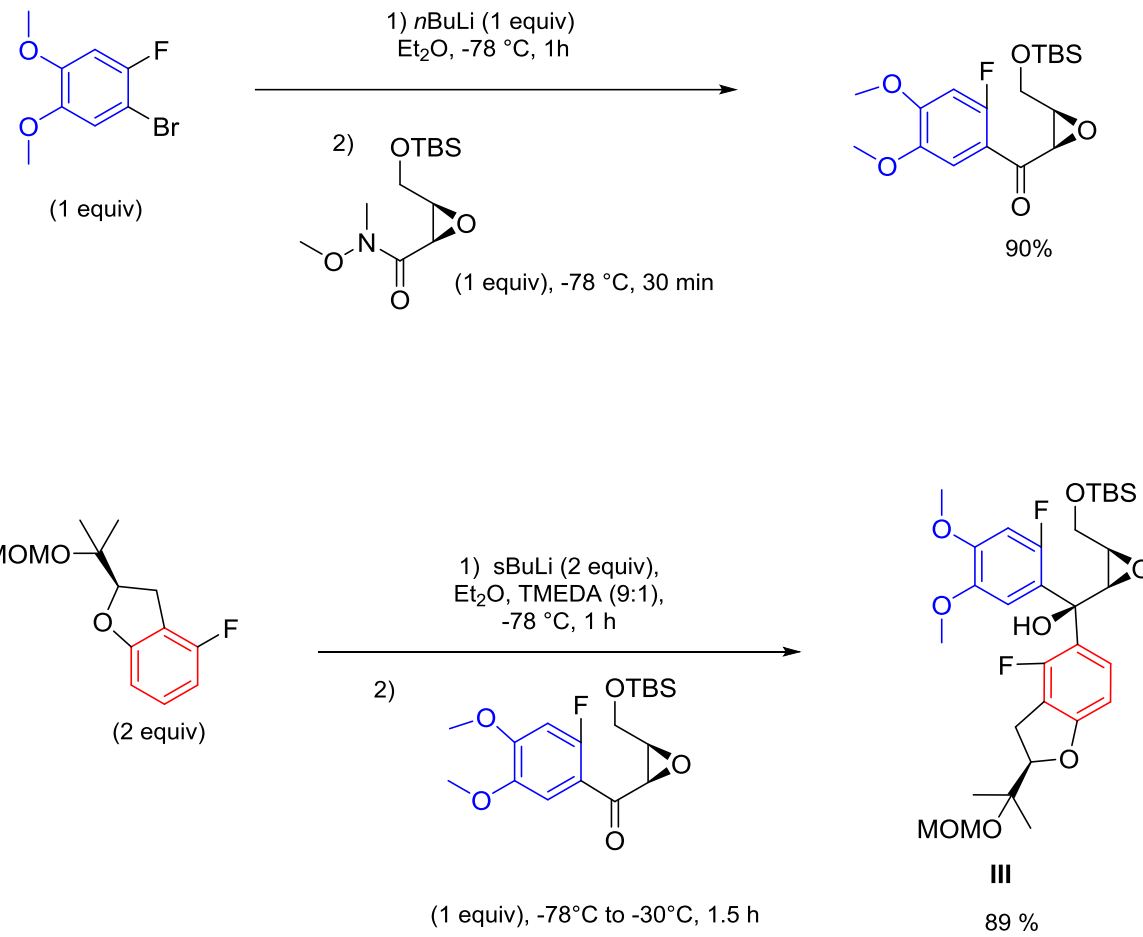
# 1,2-shift sequence



Slightly greater MA

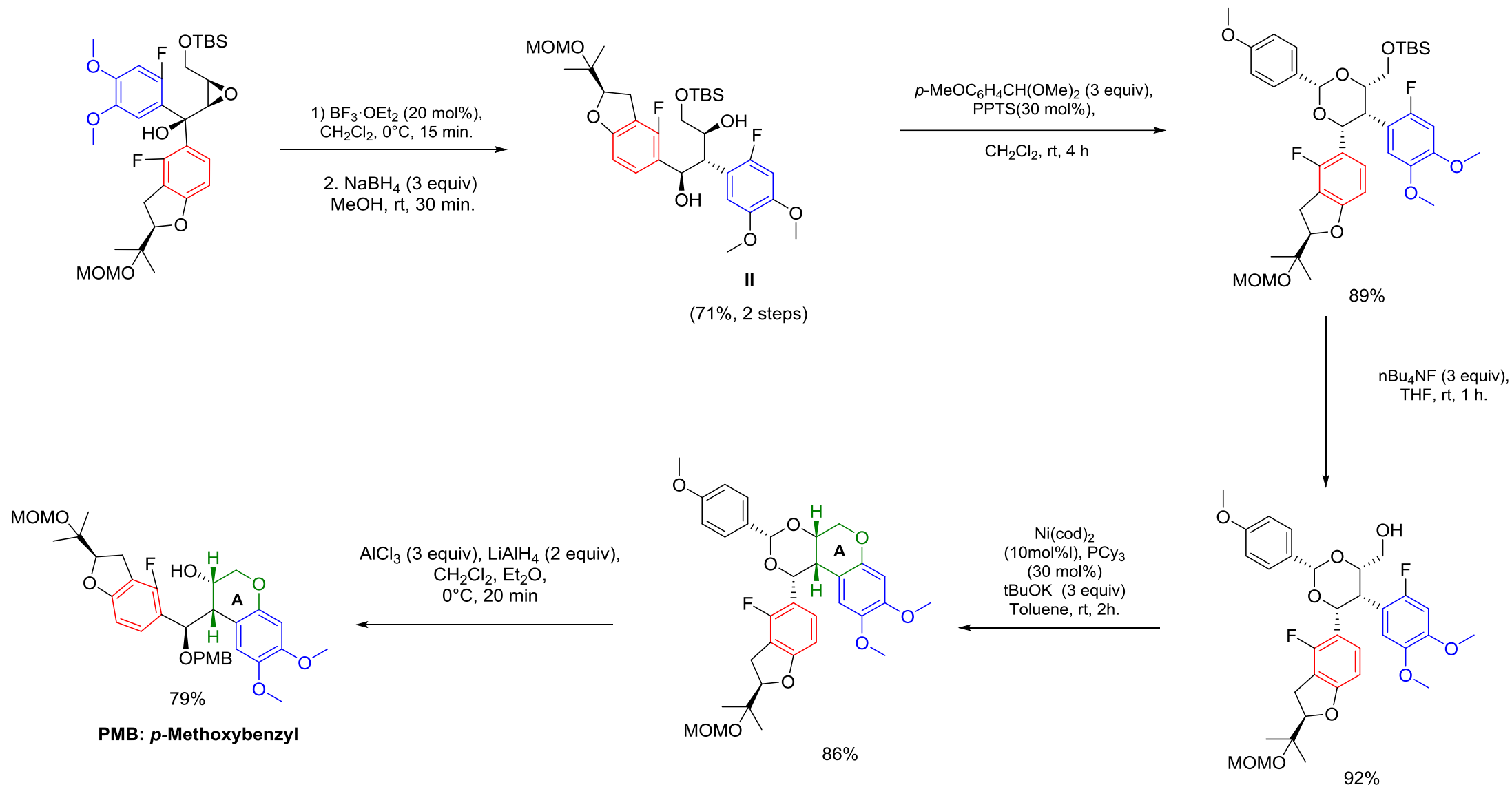


# Synthesis of key precursor





# Completion of the synthesis



# Completion of the synthesis

