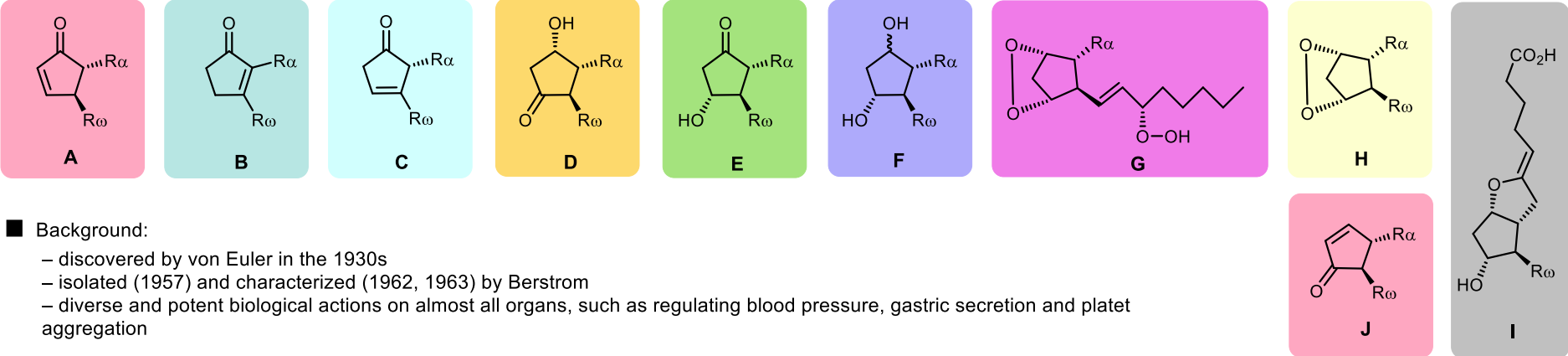


Common Backbone of Prostaglandins:

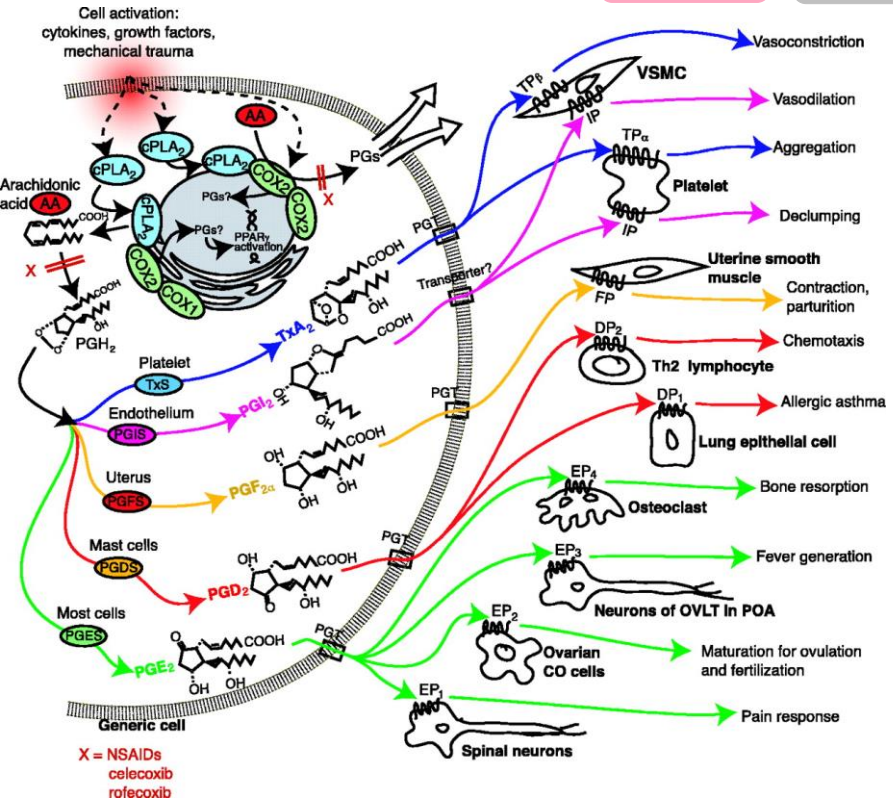


Background:

- discovered by von Euler in the 1930s
- isolated (1957) and characterized (1962, 1963) by Berstrom
- diverse and potent biological actions on almost all organs, such as regulating blood pressure, gastric secretion and platelet aggregation

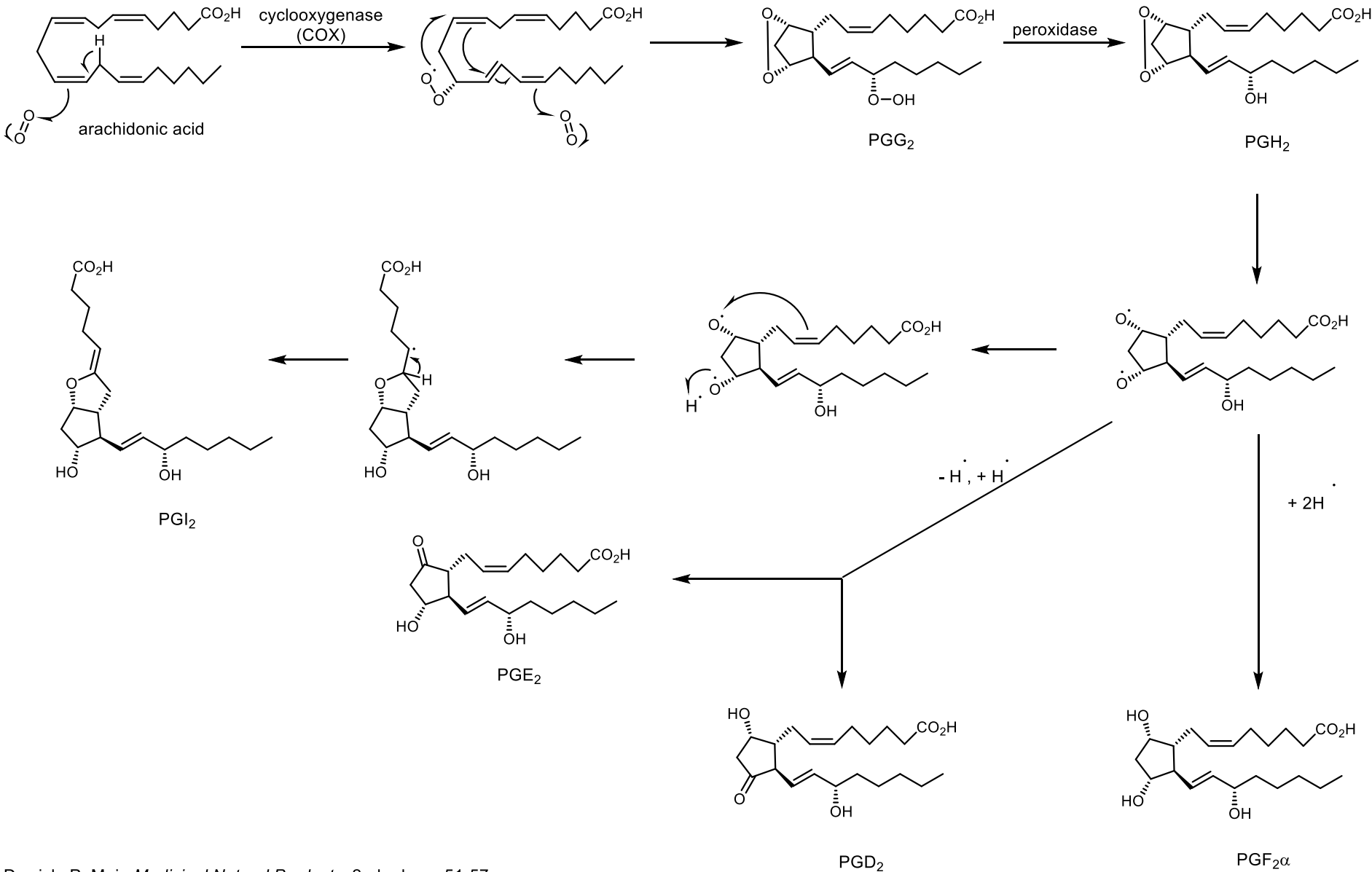
Table of Contents:

- Background
 - Proposed Biosynthesis
- Total Syntheses
 - Corey (1969; PGE₂, PGF_{2α})
 - Storke (1976, 1978; PGA₂, PGF_{2α})
 - Vergauer and Riera (2009; PGB₁ methyl ester)
 - Shibasaki (1986; PGD₂)
 - Hayashi (2013; PGA₁ methyl ester, PGE₁ methyl ester)
 - Aggarwal (2012; PGF_{2α})
 - Mulzer (2006; PGF_{2α})
 - Zanoni and Vidari (2003; PGJ₂)
 - Suh (2010, 15d- PGJ₂)
 - Nicolaou (2014, 2016; PGJ₃)
- Not Covered
 - Upjohn and Whittaker (1977)
 - Kobayashi (2014)
 - Noyori (1980s)
 - Feringa (2001)
 - Carreira (2015)
 - Isobe (2016)
 - Grubbs (2019)
 - Nicolaou (2019)



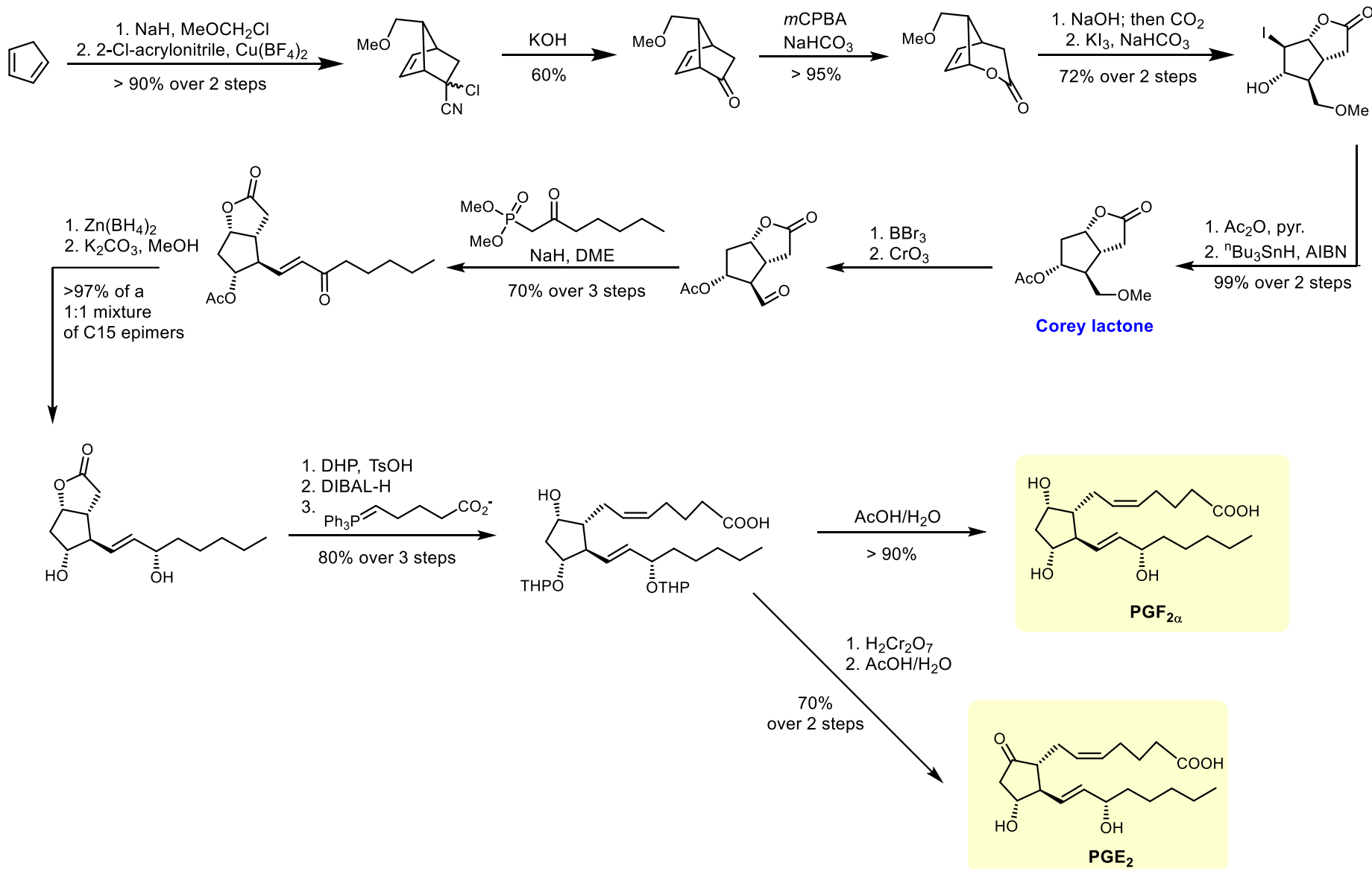
Review: *Org. Biomol. Chem.*, 2017, **15**, 6281
 Funk; *Science*, **2001**, *30*, 1871.
 Nicolaou, K. C.; Sorensen, E. J. in *Classics in Total Synthesis*, pp 65-81, 137-151

■ Biosynthesis:

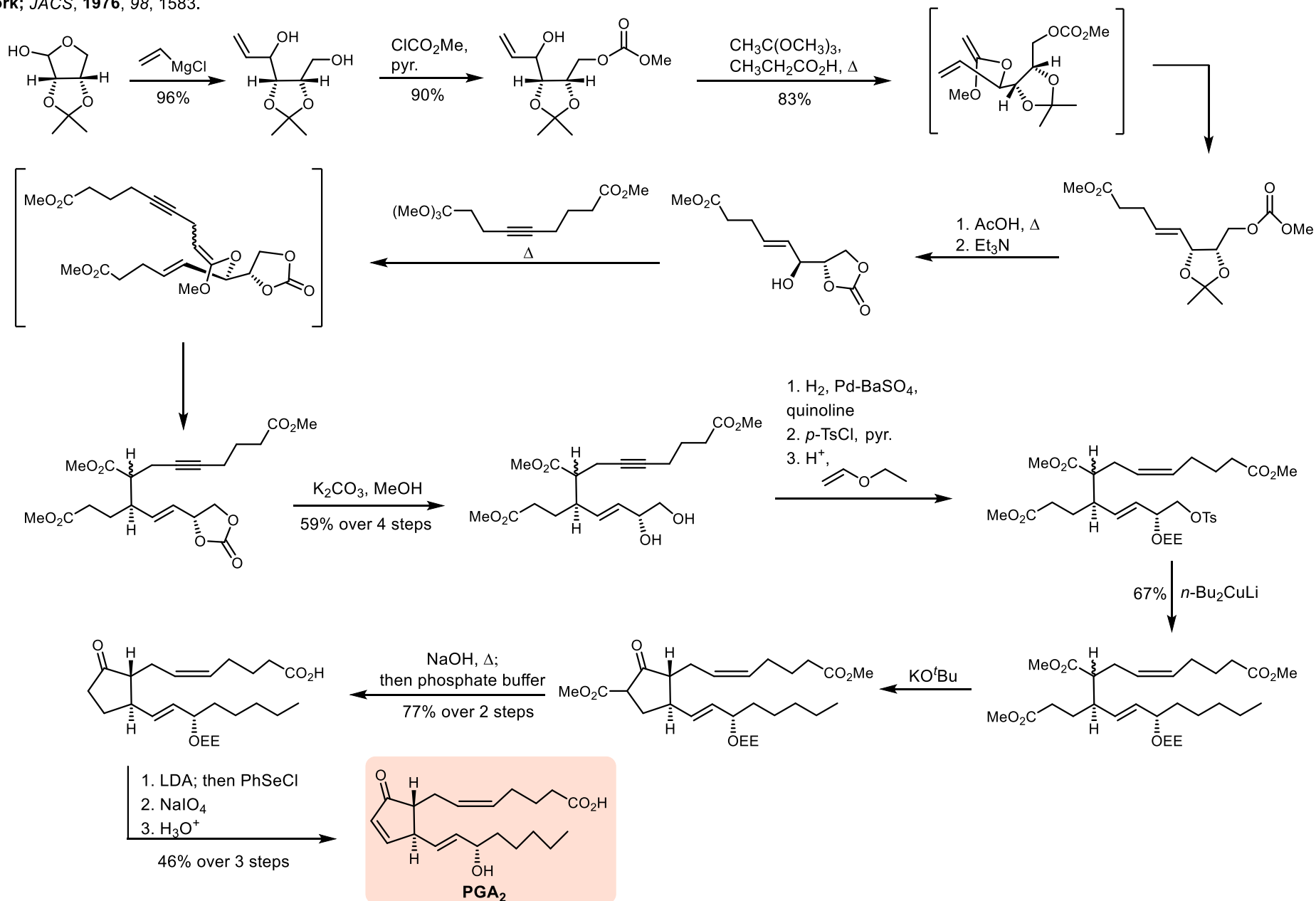


Dewick, P. M. in *Medicinal Natural Products*, 2nd ed.,; pp 51-57

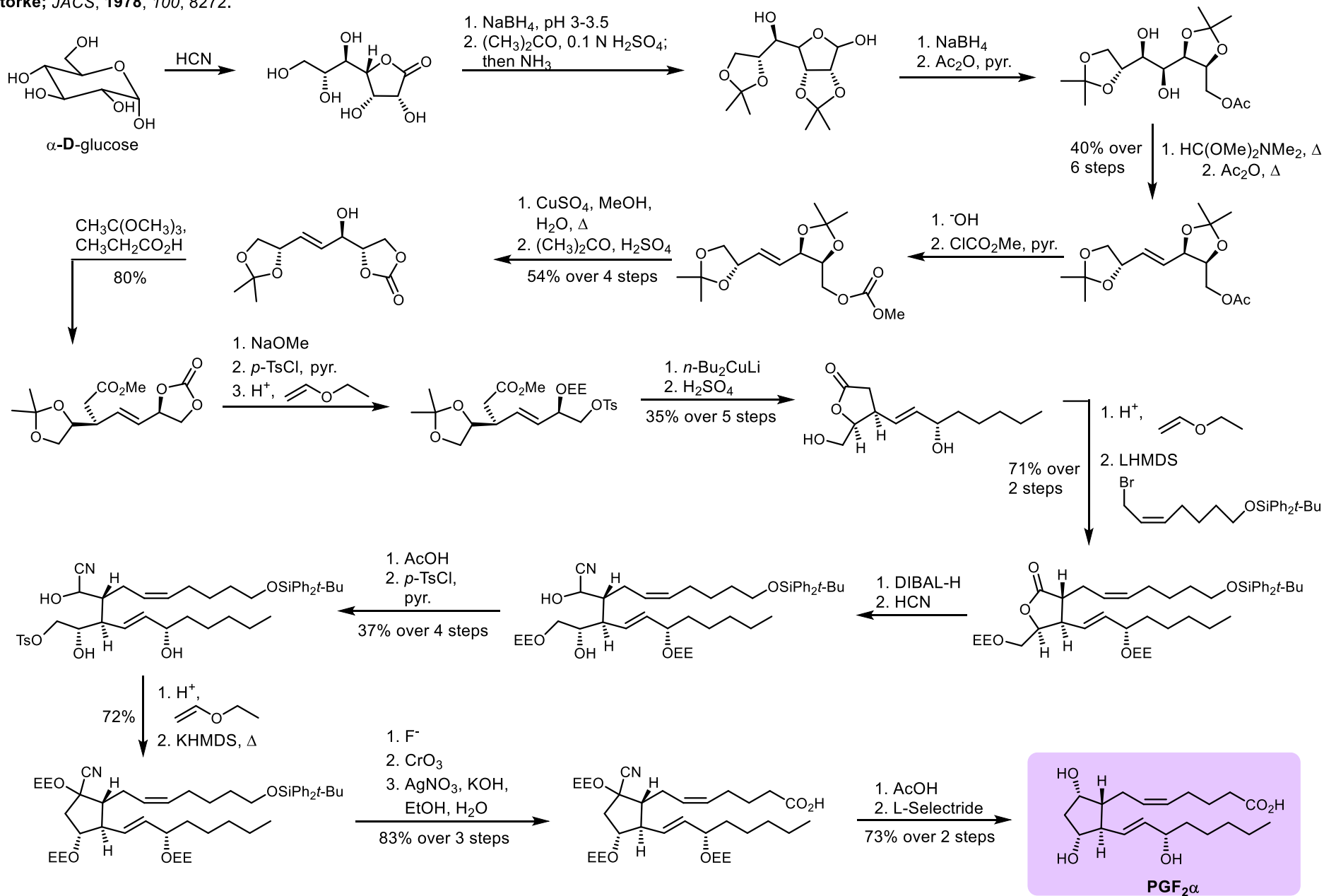
Corey; JACS, 1969, 91, 5675.

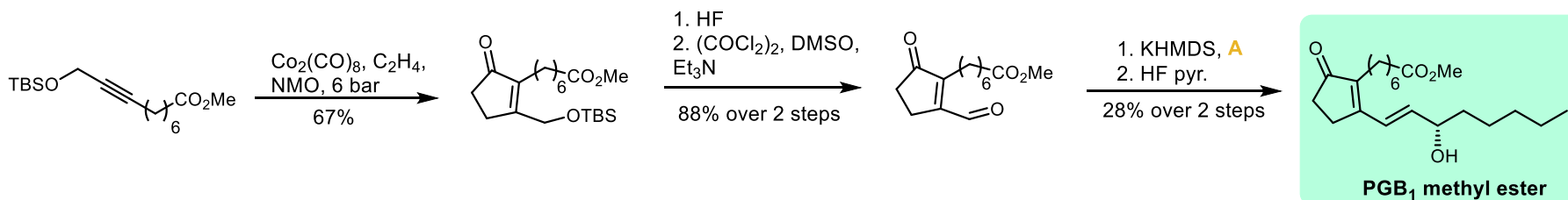
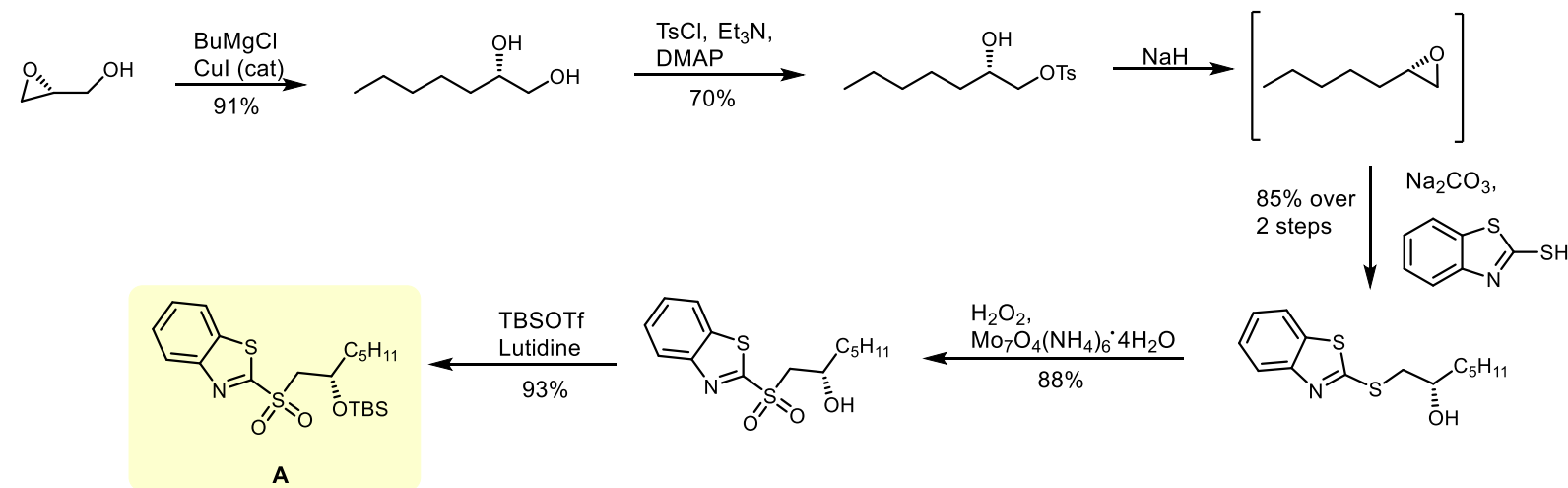


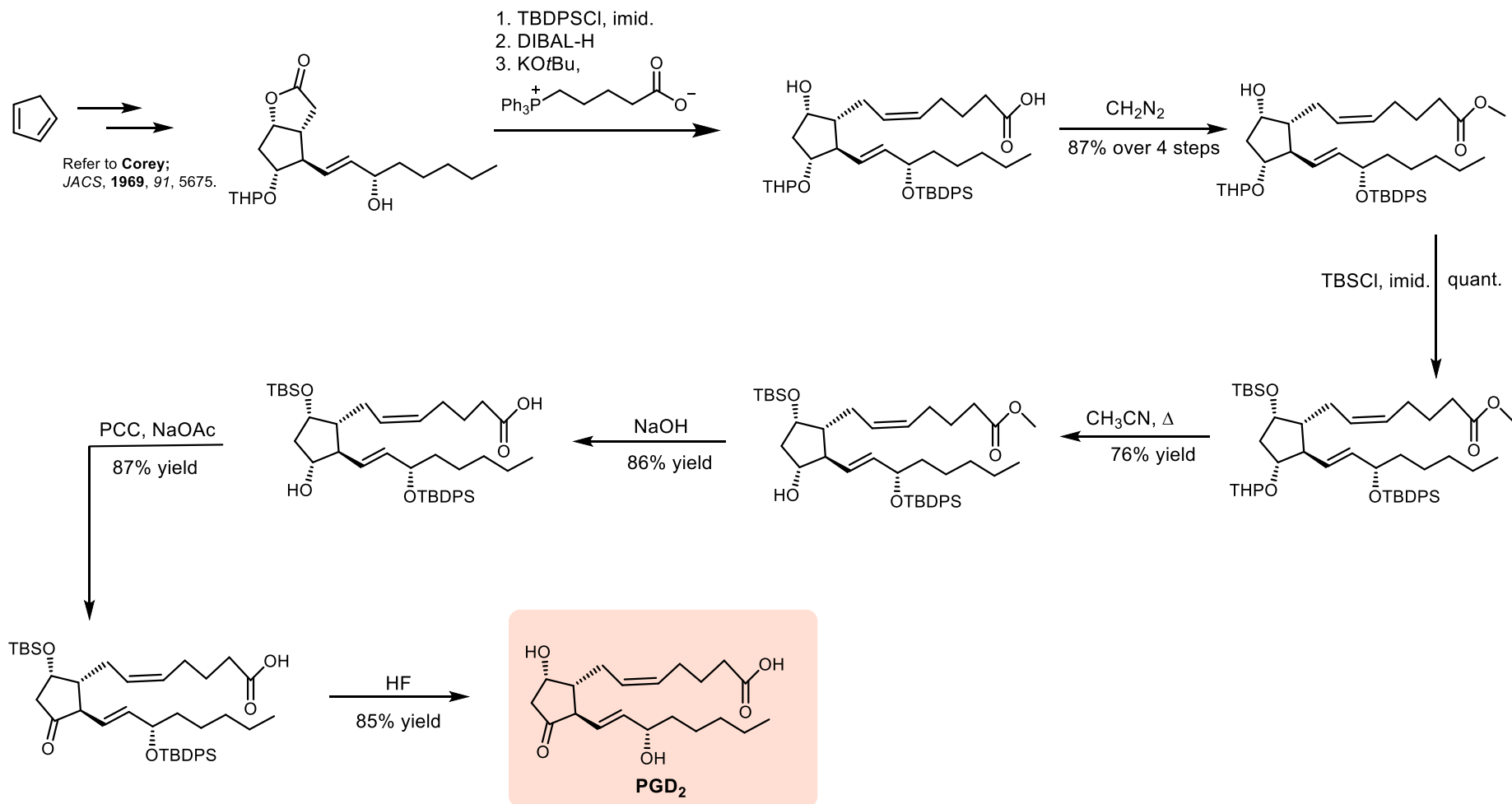
Stork; JACS, 1976, 98, 1583.

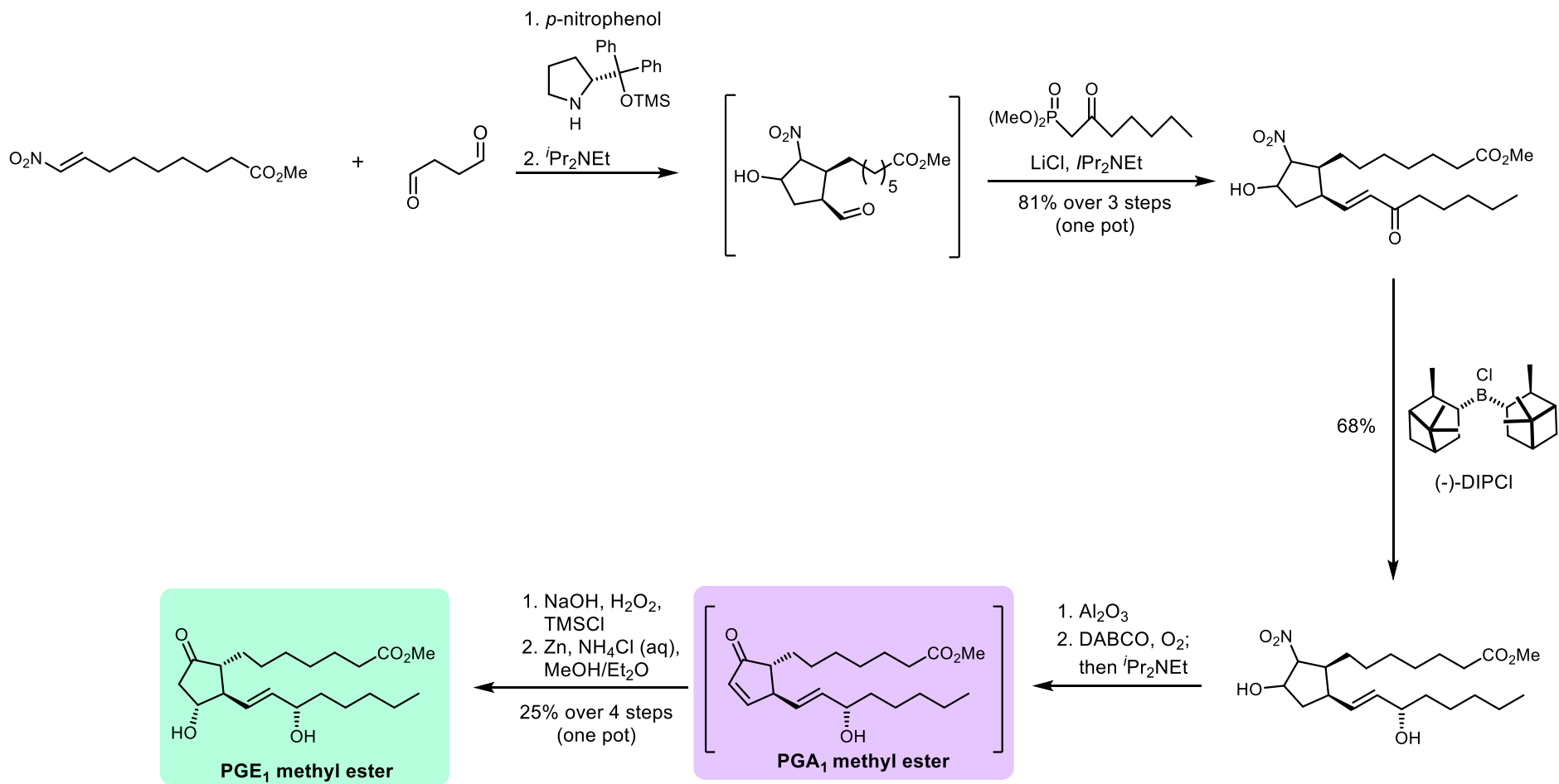


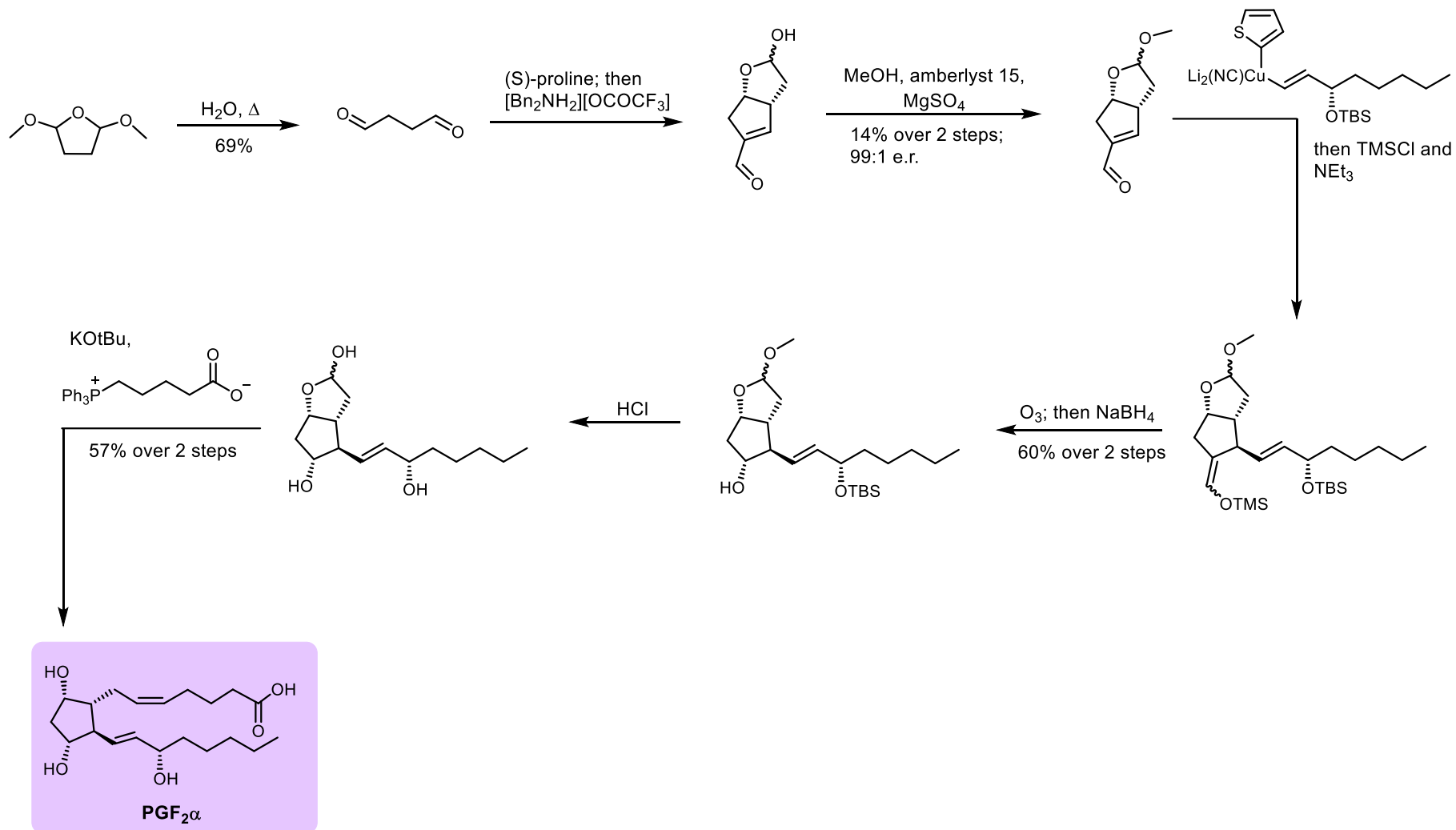
Storke; JACS, 1978, 100, 8272.

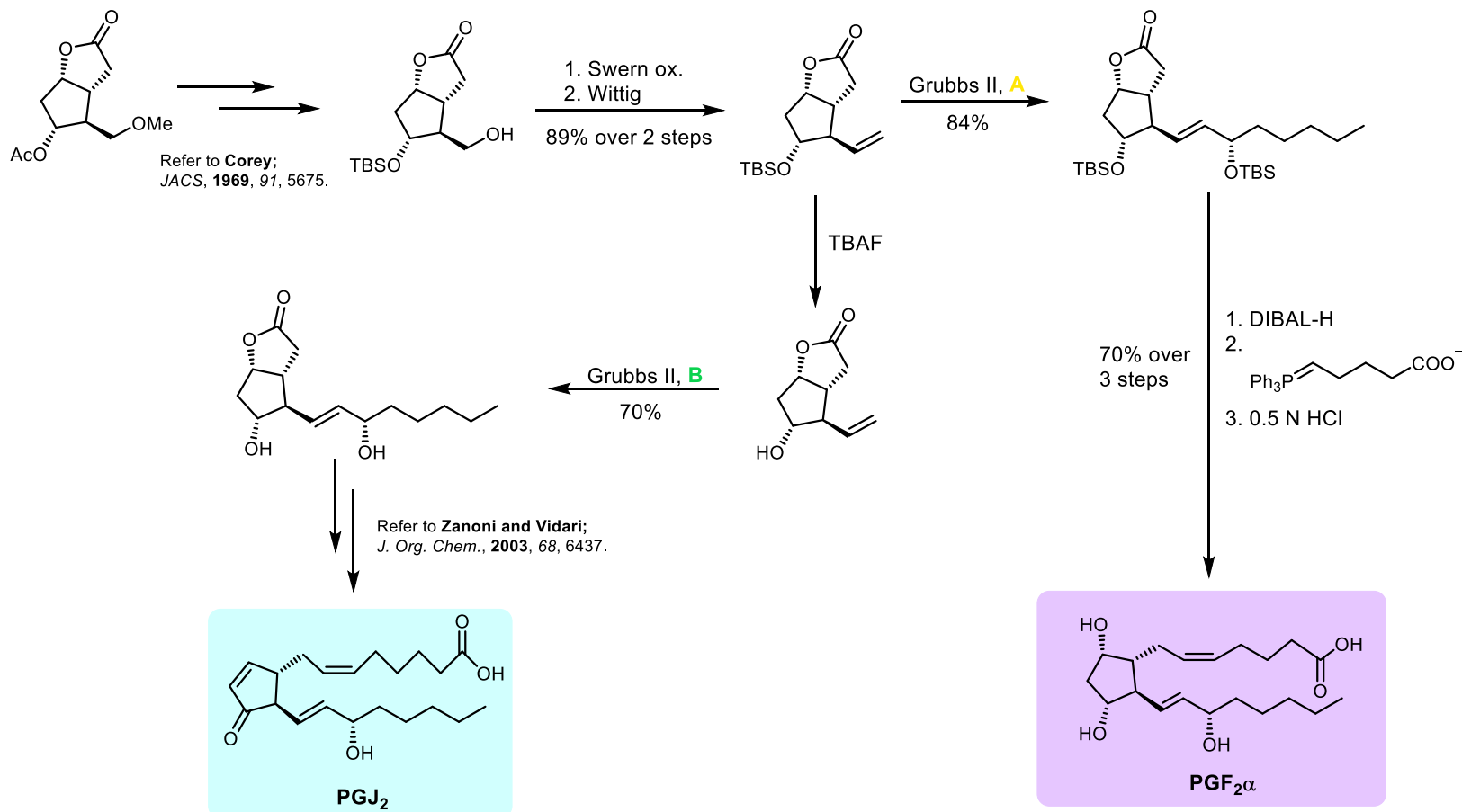
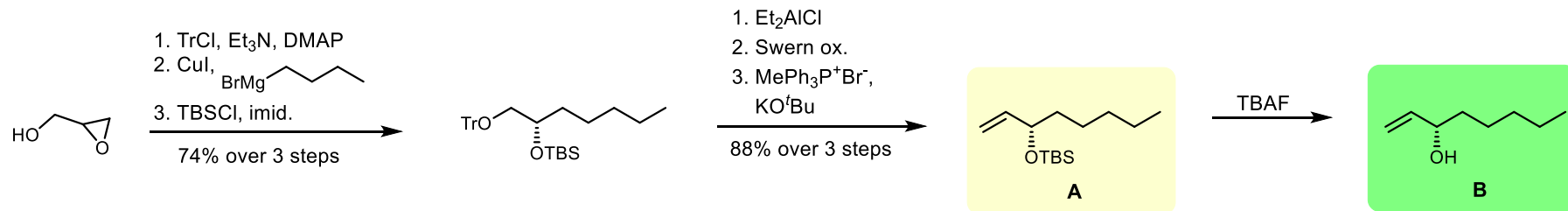


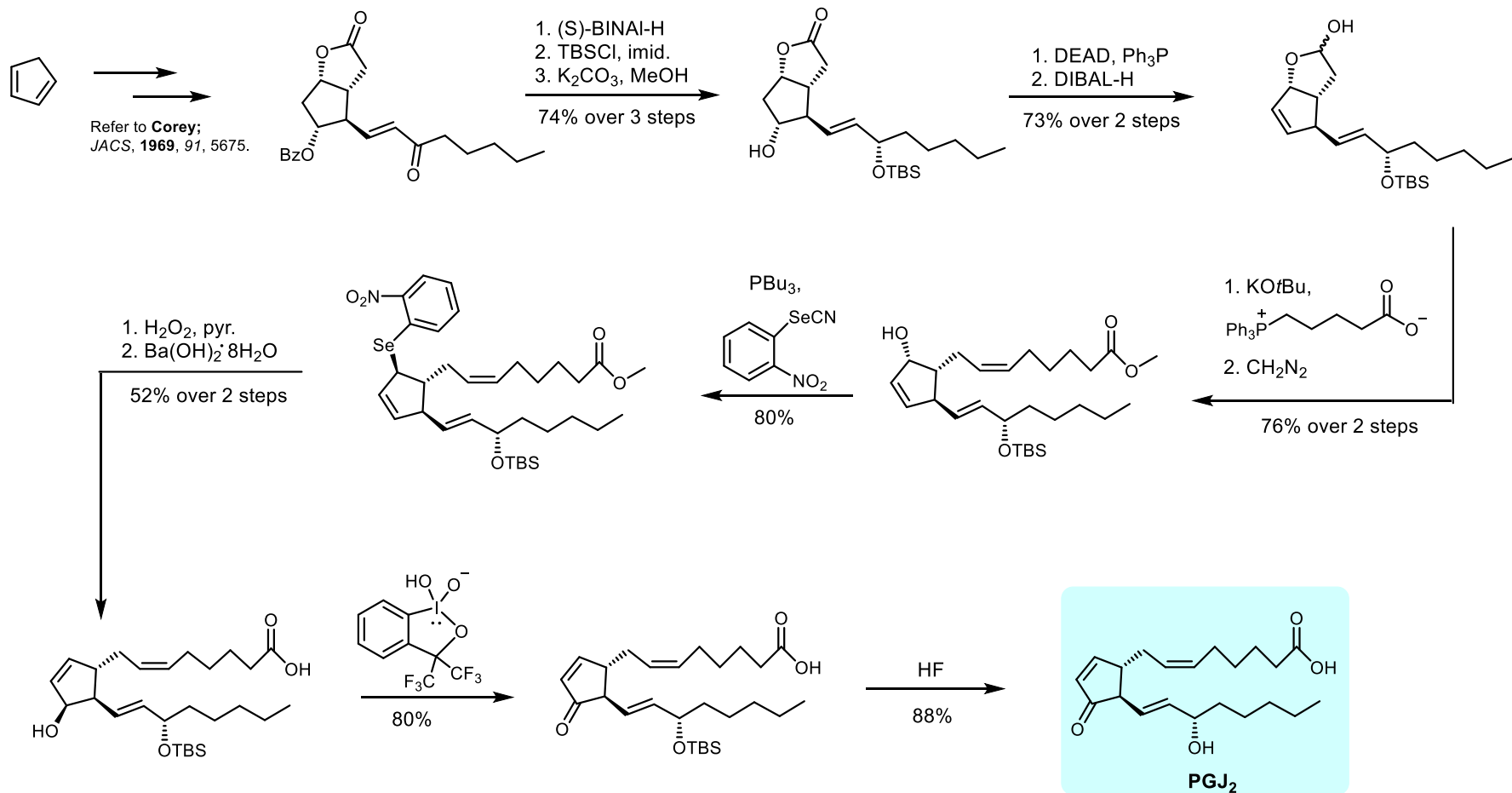
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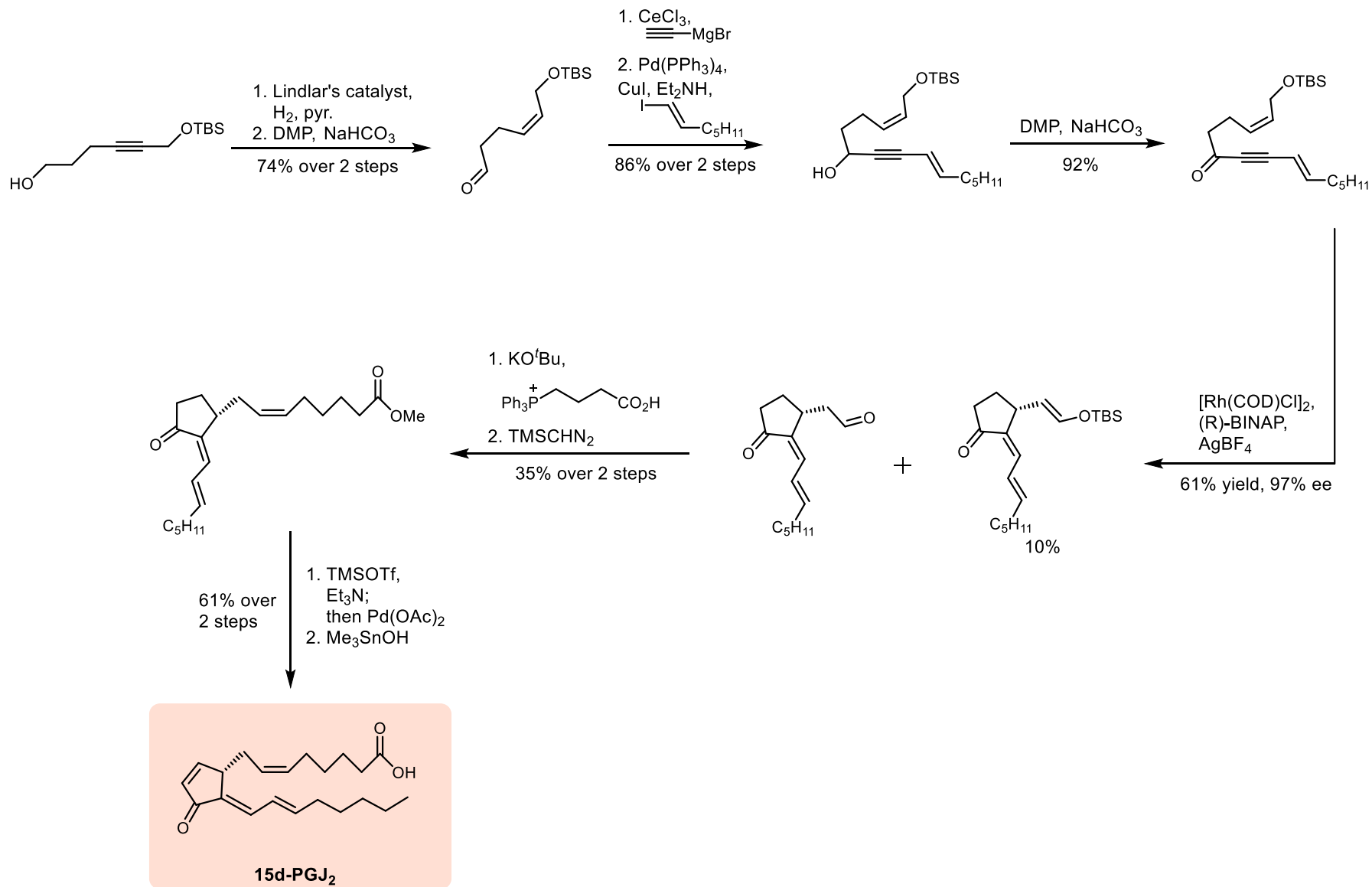
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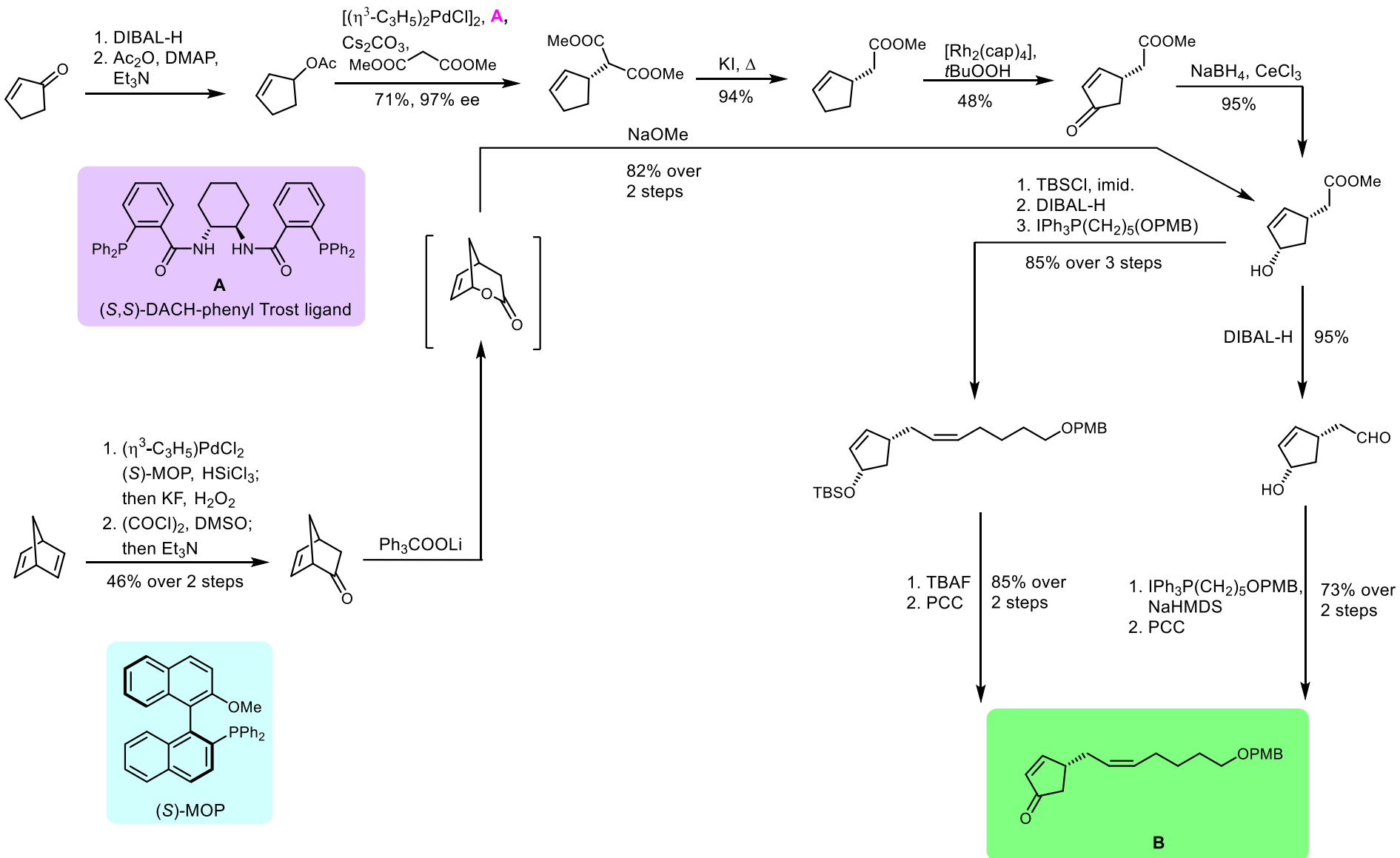
Hayashi; *Angew. Chem. Int. Ed.*, 2013, 52, 3450.

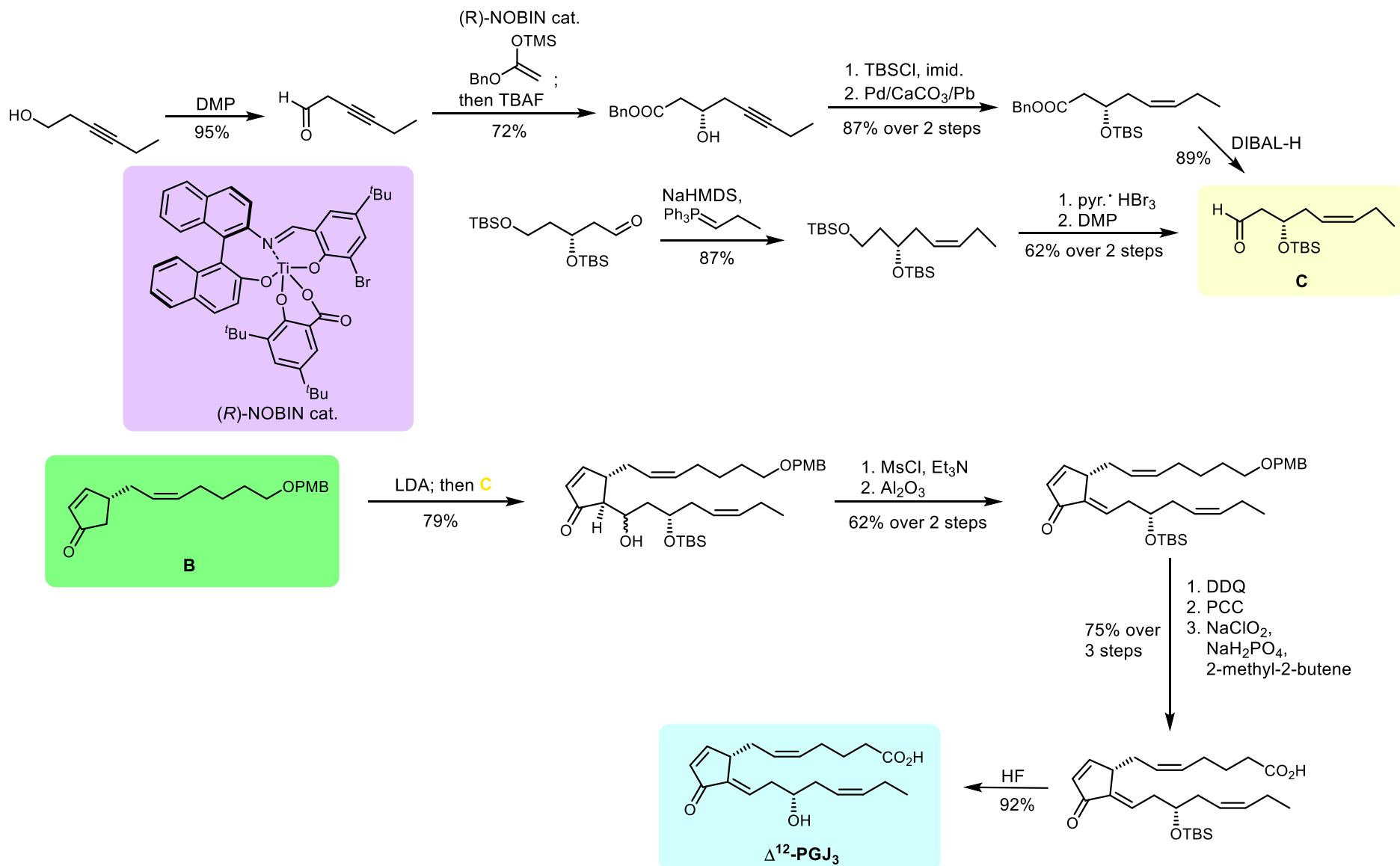
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