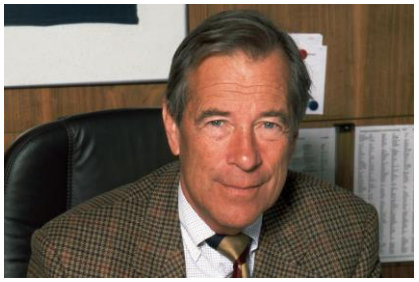
(-) Coriolin (Schaffner, 1986)

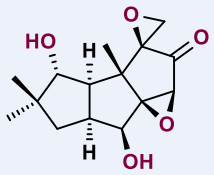
Coriolin

- The molecule was first isolated in 1969 from the basidiomycetes, Coriolus consors, a fungus also known as the “Turkey Tail Mushroom”.
- The structure was elucidated two years later in 1971 and further validated by X-ray crystallography in 1974.
- The first racemic total synthesis of Coriolin was completed in 1980 by Tatsuta et. al.
- Subsequent racemic total synthesis were accomplished in the years to follow by: Danishevsky (1980), Ikegami (1980), Trost (1981), Mehta (1982), Wender (1983), and Schuda (1984).
- Schaffner would perform the first asymmetric total synthesis, intercepting a Trost late-stage intermediate with enantiopure material.
- Since this synthesis, there have been additional synthesis by Moeller (1987), Curran (1988), Kuwajima (1999), Pacquette (2002), and Yu (preprint, 2022).

Coriolus Consors



Kurt Schaffner



(-)-Coriolin

Takahashi, S. *Tetrahedron* **1969**, 53, 4663–4666. https://doi.org/10.1021/ja00274a050

Danishefsky, S. *J. Am. Chem. Soc.* **1980**, 102, 6, 2097–2098. https://doi.org/10.1021/ja00526a061

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Mehta, G. *J. Chem. Soc., Chem. Commun.*, **1982**, 540-541. https://doi.org/10.1039/C39820000540

Wender, P.A. *Tetrahedron.* **1983**, 24, 48, 5325–5328. https://doi.org/10.1016/S0040-4039(00)87859-4

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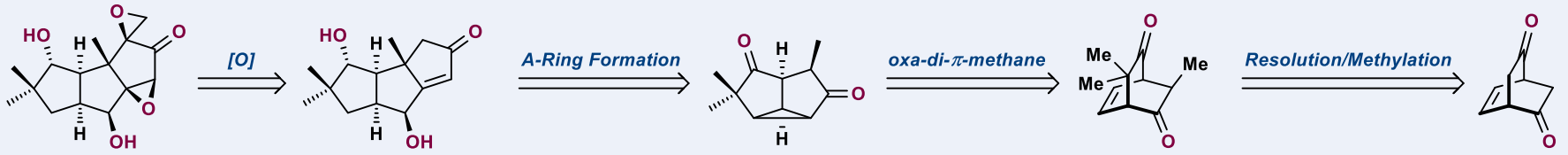
Yu, Z. ChemRxiv **2022**. 10.26434/chemrxiv-2022-lxlfz

Retrosynthesis



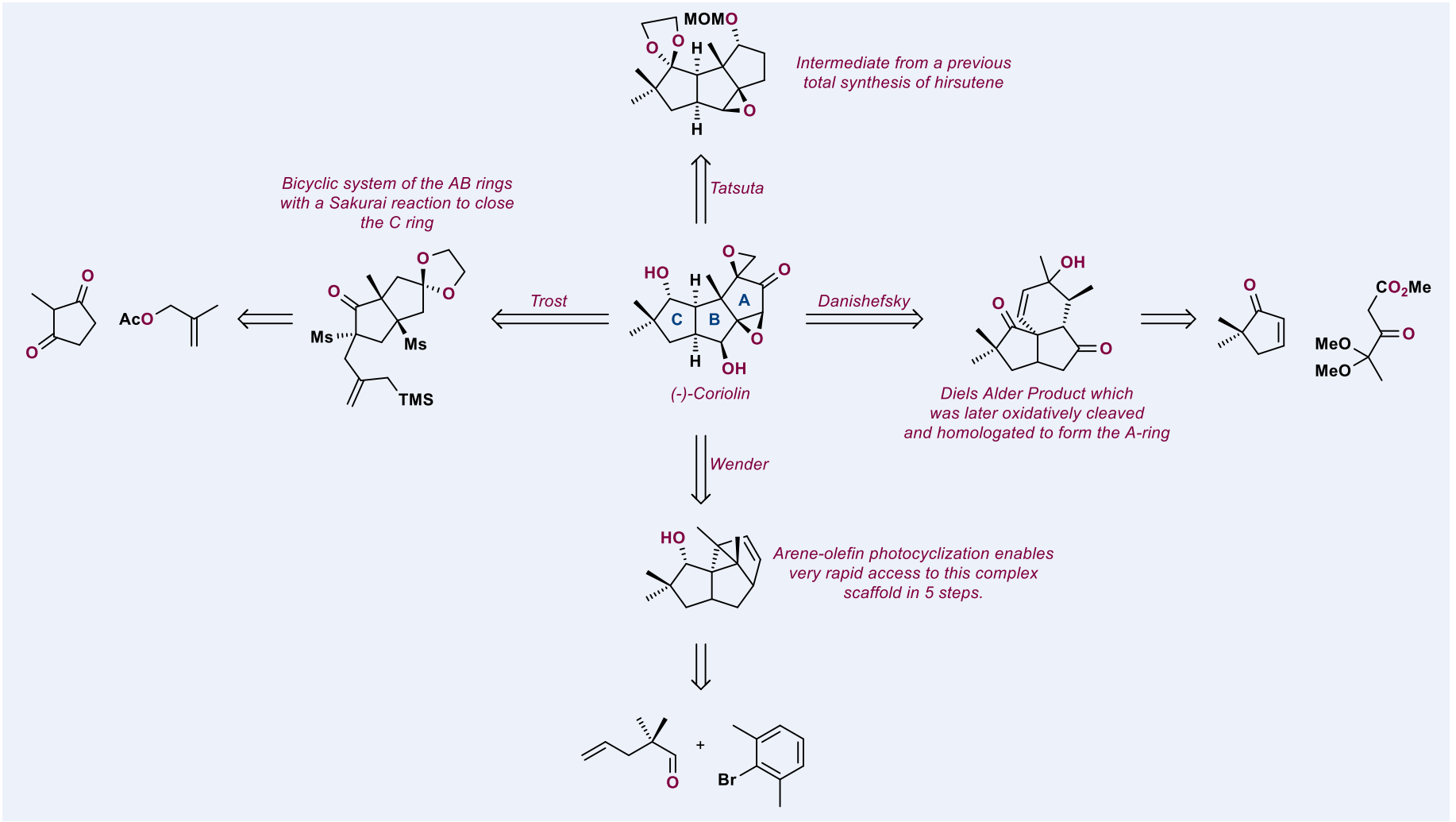
(-)-Coriolin *(-)-Trost's Intermediate* *(-)* *(±)*

For a more detailed discussion on di-π-methane rearrangements, please see the attached Method of the Week.

Demusth, M. J. Am. Chem. Soc. **1986**, 108, 14, 4149–4154. https://doi.org/10.1021/ja00274a050

(-) Coriolin (Schaffner, 1986)

Previous Approaches



Tatsuta, T. The Journal of Antibiotics **1980**, 33, 1, 100–102. https://doi.org/10.7164/antibiotics.33.100

Danishefsky, S. *J. Am. Chem. Soc.* **1980**, 102, 6, 2097–2098. https://doi.org/10.1021/ja00526a061

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Wender, P.A. *Tetrahedron.* **1983**, 24, 48, 5325–5328. https://doi.org/10.1016/S0040-4039(00)87859-4

(-) Coriolin (Schaffner, 1986)

The Forward Synthesis