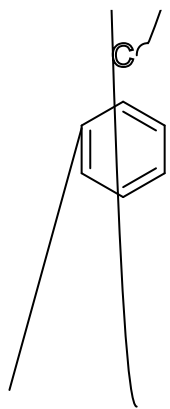


Total Synthesis of (

Retrosynthesis

To maximize convergency, **1** is split down the middle at the pyridone ring, yielding fragment **5**

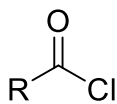
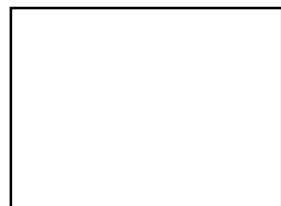
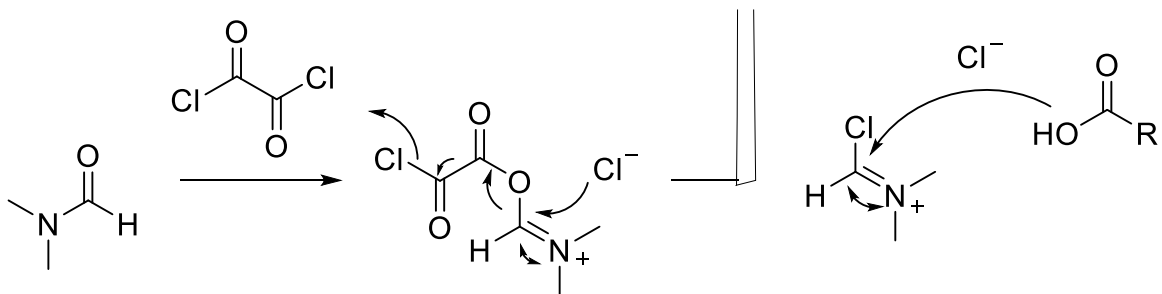
derived from 4-chlorobenzonitrile and 4-aminobenzonitrile, and fragment **6** which can be accessed through hydrogenation and desymmetrization of a mesitylene-derived tyleno

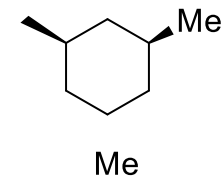
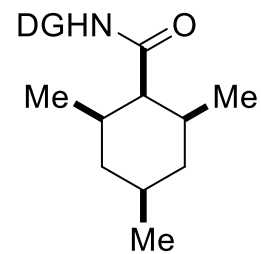
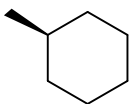


Stereoselective Hydrogenation



Amidation – Preparation of directing group





Pd-catalyzed asymmetric oxidation

Of note: The role of Ac₂O is unknown, but was found to improve reaction yield. The reaction is particularly sensitive to moisture, so it may act as a desiccant.

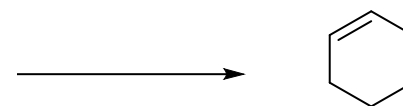
Directing group screening



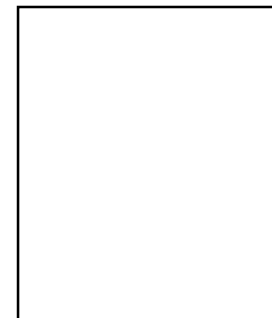
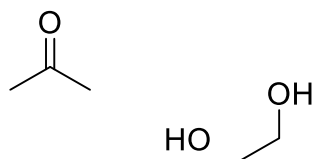


Wittig Olefination

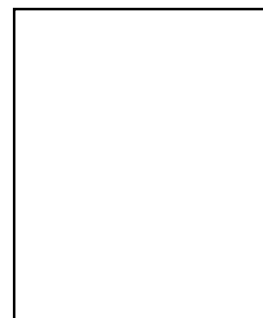
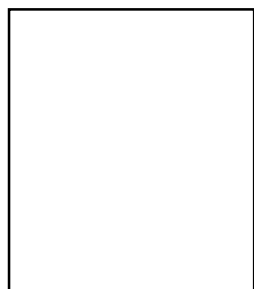
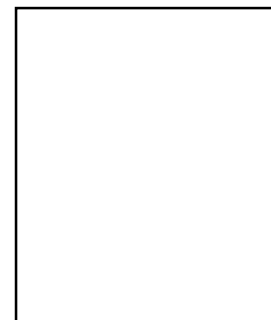
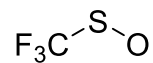
Oxidation

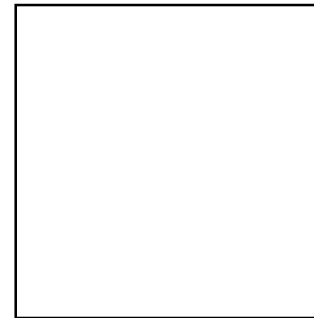


Esterification and 1,2-diol protection



Multi-step formation of epoxide







(-)-Maximiscin (1)

Di-acid activation, "Aza-Sakurai" cyclization, and final deprotection

