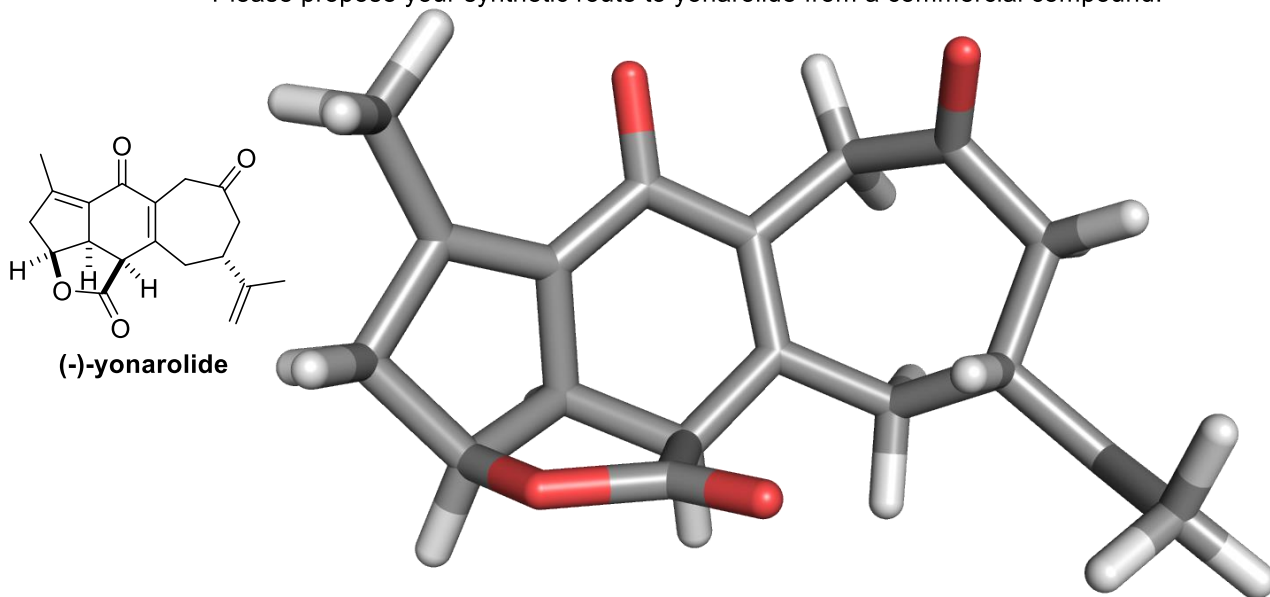
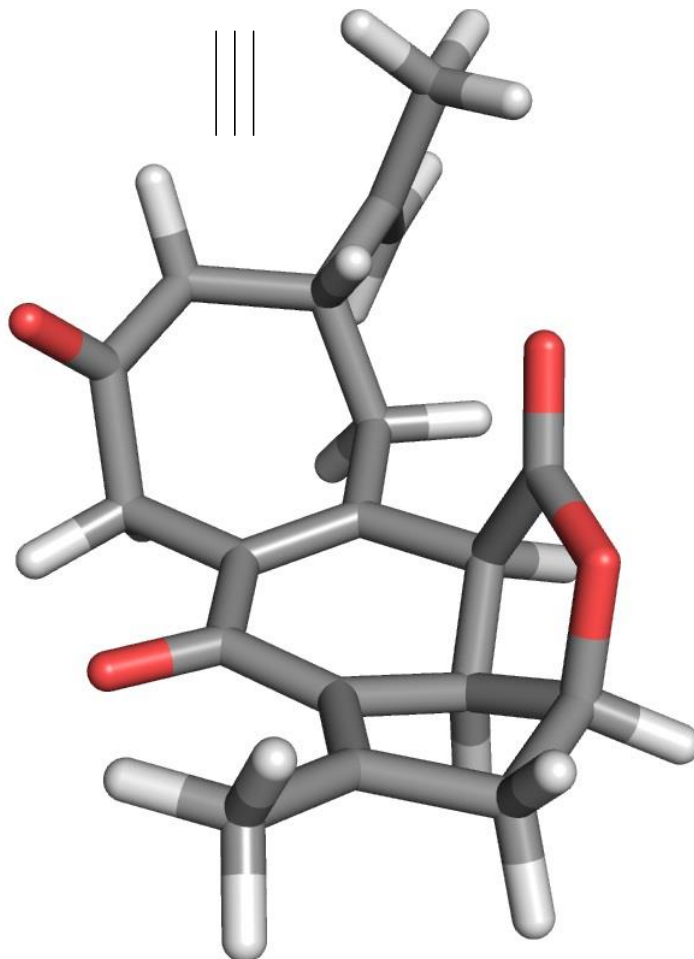


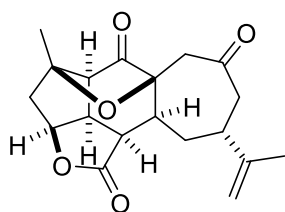
Please propose your synthetic route to yonarolide from a commercial compound.



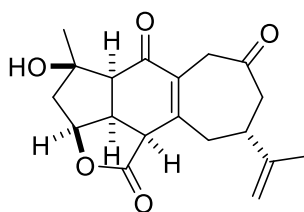
(-)-yonarolide



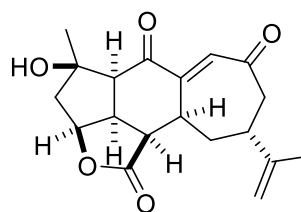
related natural products



sinulochmodin C

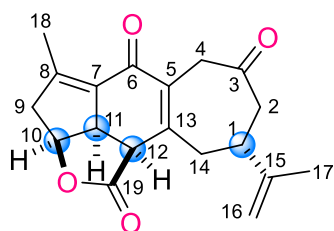


scabrolide A

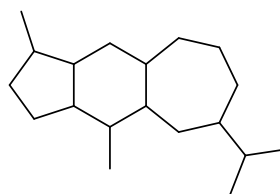


scabrolide B

## Synthetic Plan of (-)-yonarolide



**(-)-yonarolide**



**yonarane skeleton**

•**Isolation:** Isolated from Okinawan soft coral of the genus *Sinularia* along with 5-*epi*-sinuleptolide and 5,11-*diepi*-sinuleptolide. Iguchi, K.; Kajiyama, K.; Yamada, Y. *Tetrahedron Lett.* **1995**, 36, 8807.

•**Bioactivities:** Yonarolide have a potential as an anti-inflammatory agent.

•**Structural features:** Norditerpenoid having a unique tricyclo[7.5.0.0<sup>3,7</sup>]tetradecane chemical structure called the yonarane skeleton.

The absolute stereochemistry of scabrolide A was determined by comparison of the calculated and measured ECD values and by total synthesis, but that of yonarolide has not yet been directly determined.

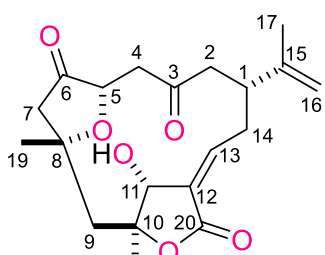
### •Total synthesis

No report in peer-reviewed articles.

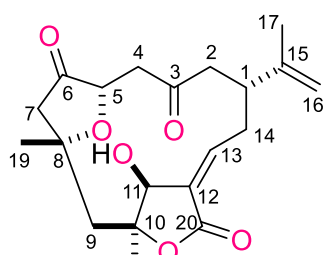
The total synthesis of the related natural product scabrolide A has been reported by the Stoltz group:

Hafeman, N. J.; Loskot, S. A.; Reimann, C. E.; Pritchett, B. P.; Virgil, S. C.; Stoltz, B. M. *J. Am. Chem. Soc.* **2020**, 142, 8585.

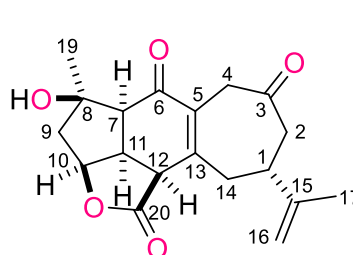
### •Related natural products



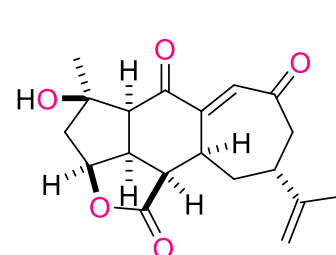
**5-*epi*-sinuleptolide**



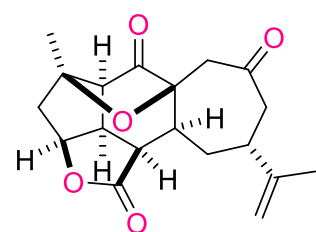
**5,11-*diepi*-sinuleptolide**



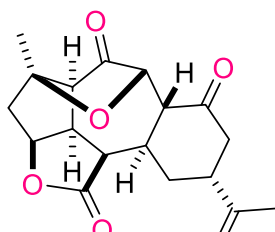
**scabrolide A**



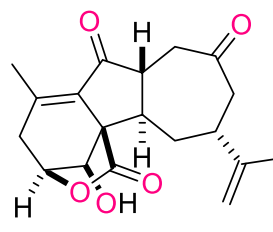
**scabrolide B**



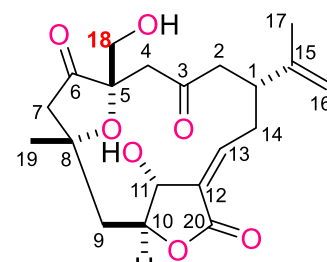
**sinulochmodin C**



**ineleganolide**

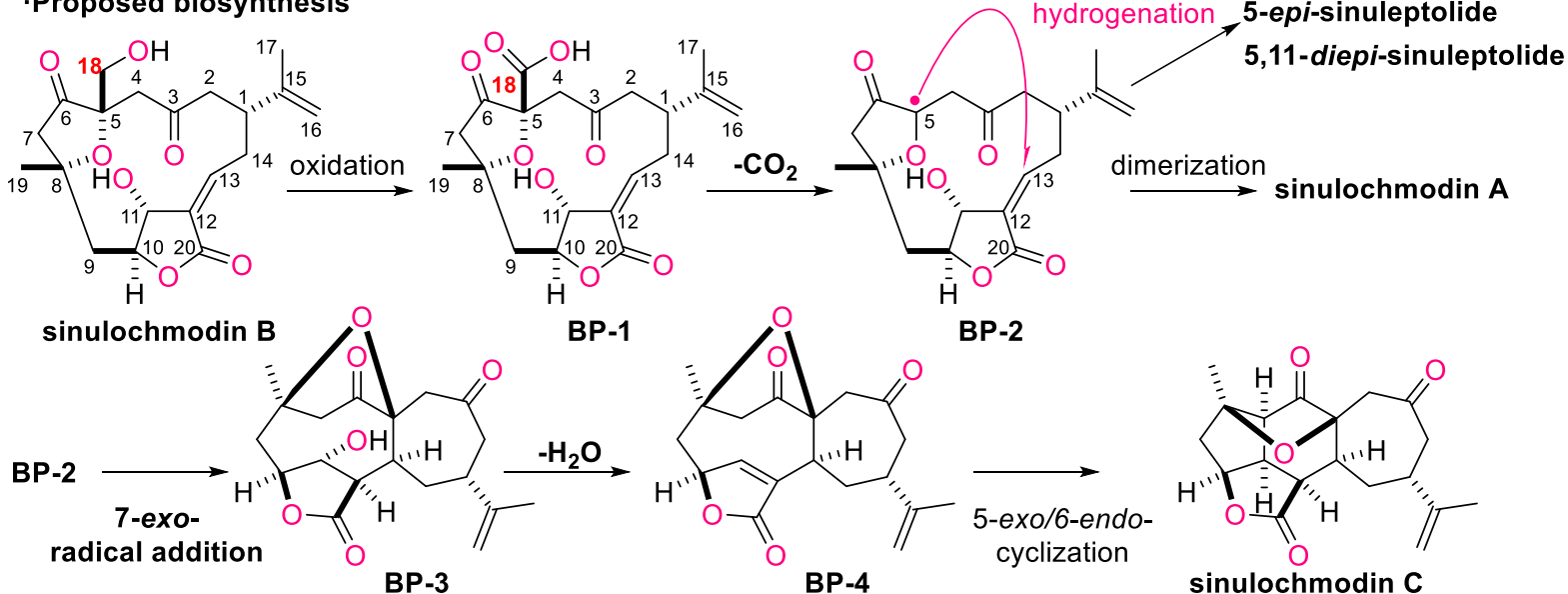


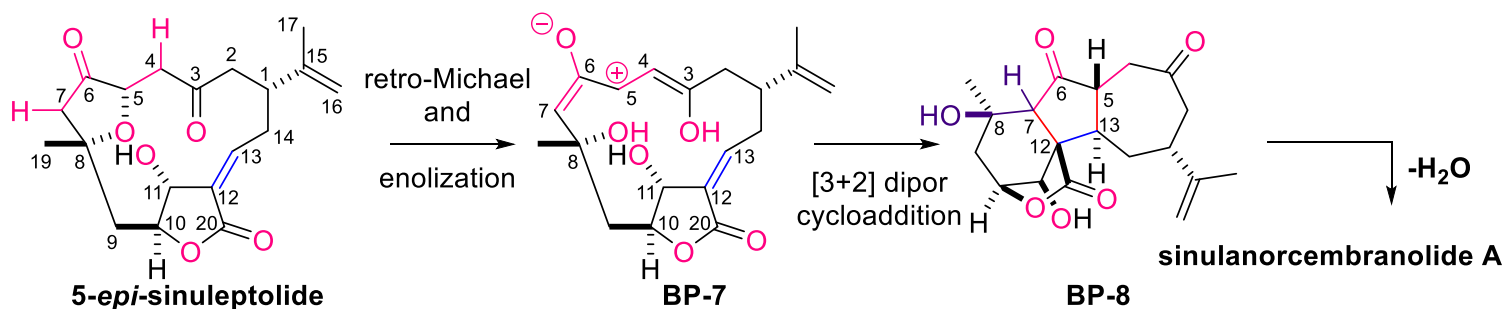
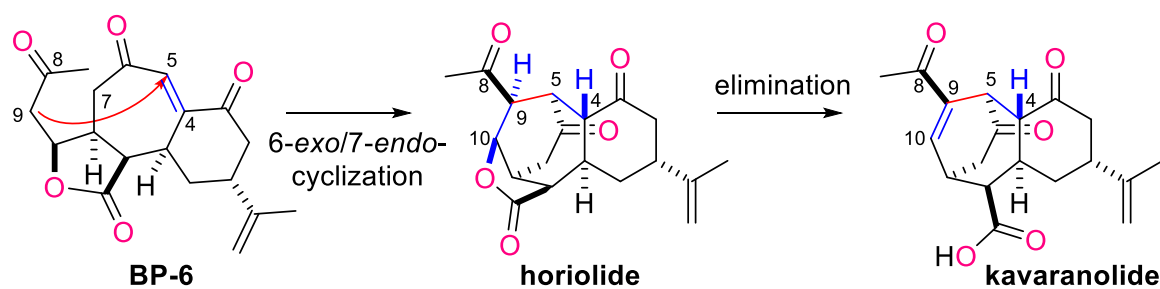
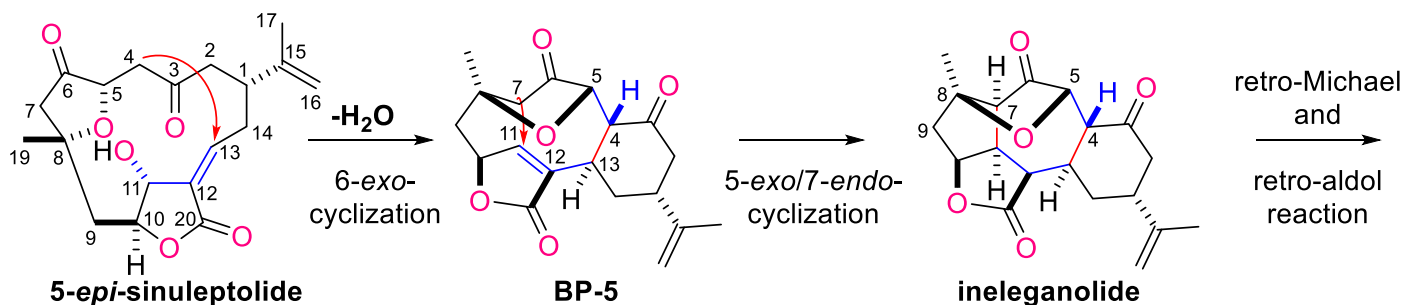
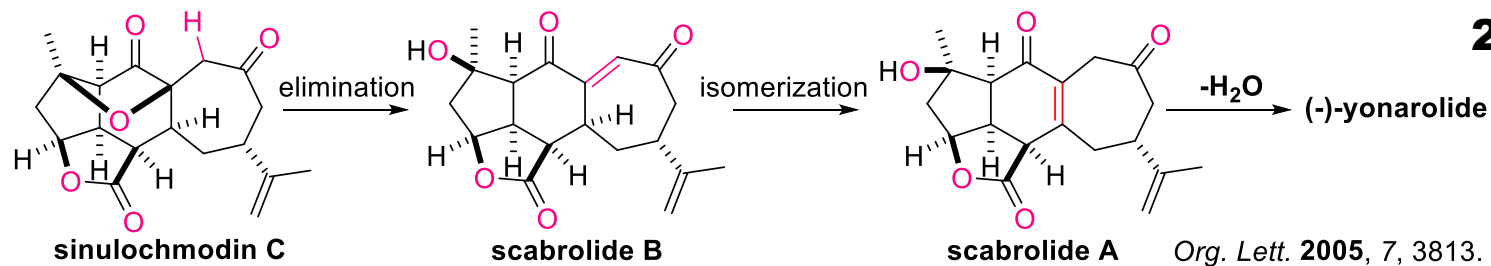
**sinulanorcembranolide**



**sinulochmodin B**

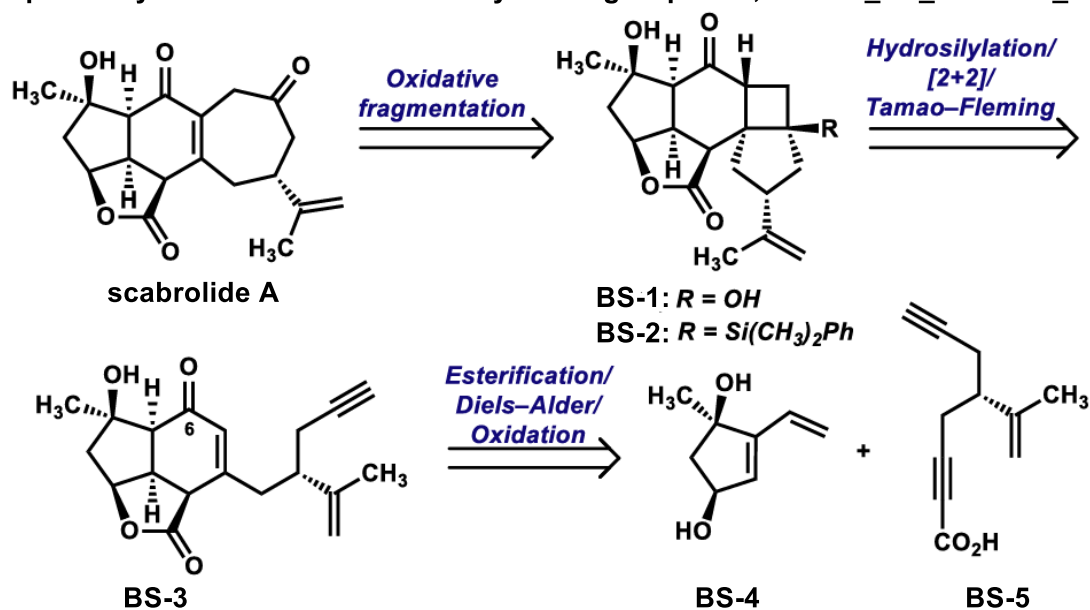
### •Proposed biosynthesis





*Chem. Rev.* **2017**, *117*, 7878.

·The 21-step total synthesis of scabrolide A by Stoltz group: See, 200606\_PS\_Takahiro\_Watanabe



*J. Am. Chem. Soc.* **2020**, *142*, 8585.