

(+)-sieboldine A

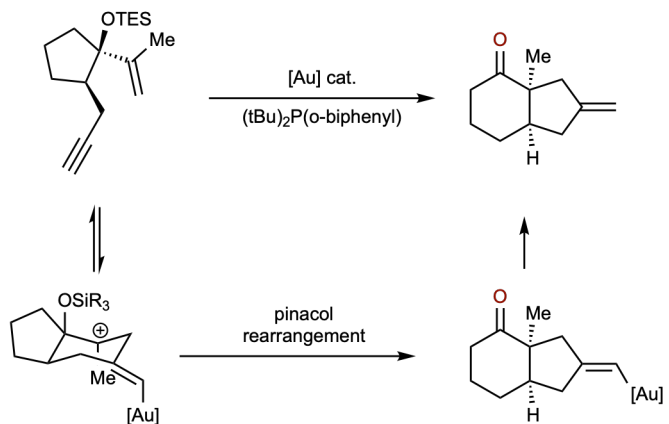
- Isolated in 2003 by Kobayashi and co-workers from *Lycopodium sieboldii*
- Structure determined by 2D-NMR and X-ray crystallography
- Shown to inhibit electric eel acetylcholinesterase with comparable activity to other *Lycopodium* alkaloids
- "It was the uniqueness of its structure, rather than its biological properties that provoked our interest in its synthesis."
 - Unusual N-hydroxyazacyclononane ring embedded in bicyclo[5.2.1]decane-N-O-acetal
- Core constructed through gold catalyzed cyclization, europium catalyzed HDA and oxidative rearrangement.



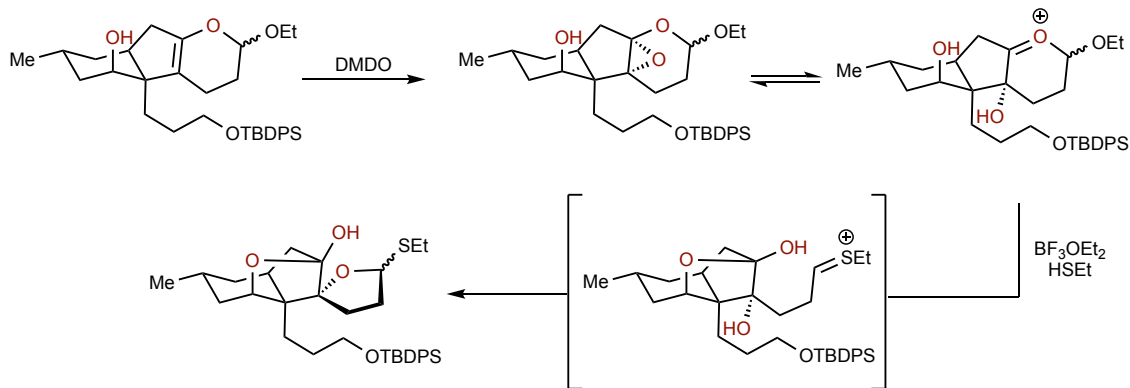
Key Steps

Pinacol terminated cyclization cascade

Kirsch (2008)



DMDO oxidative rearrangement



References

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2. *Org. Lett.* 2008, 10, 12, 2605–2607 <https://doi.org/10.1021/ol8008733>
3. *Tetrahedron*, 65, 9 1880-1888 <https://doi.org/10.1016/j.tet.2008.11.103>
4. *J. Am. Chem. Soc.* 1983, 105, 11, 3716–3717 <https://doi.org/10.1021/ja00349a064>

