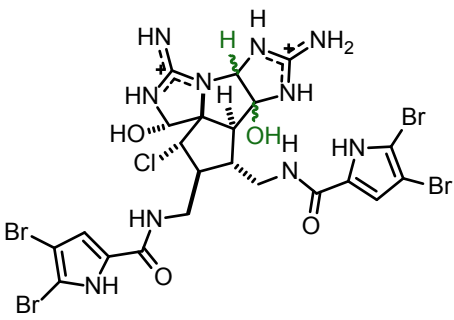


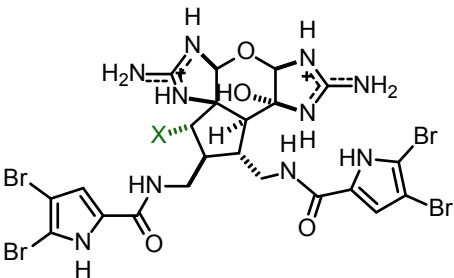
Natural Origin and Characteristics:



(-) Axinellamine A (OH, H = β)
 (-) Axinellamine B (OH, H = α)



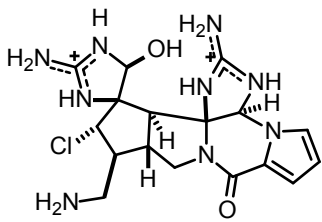
- Australian marine sponge
- Named: *Axinella* sp.
- Produces axinellamines A-D
- Axinellamines B-D showed activity against *Helicobacter pylori* at 1000 uM



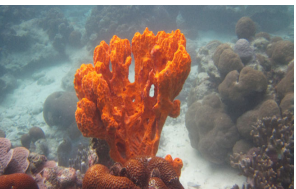
(-) Massadine (X = OH)
 (-) Massadine chloride (X = Cl)



- *Stylissa massa* sponge
- Contains both Massadines
- Massadine inhibits GGTase I with an IC₅₀ of 3.9 uM

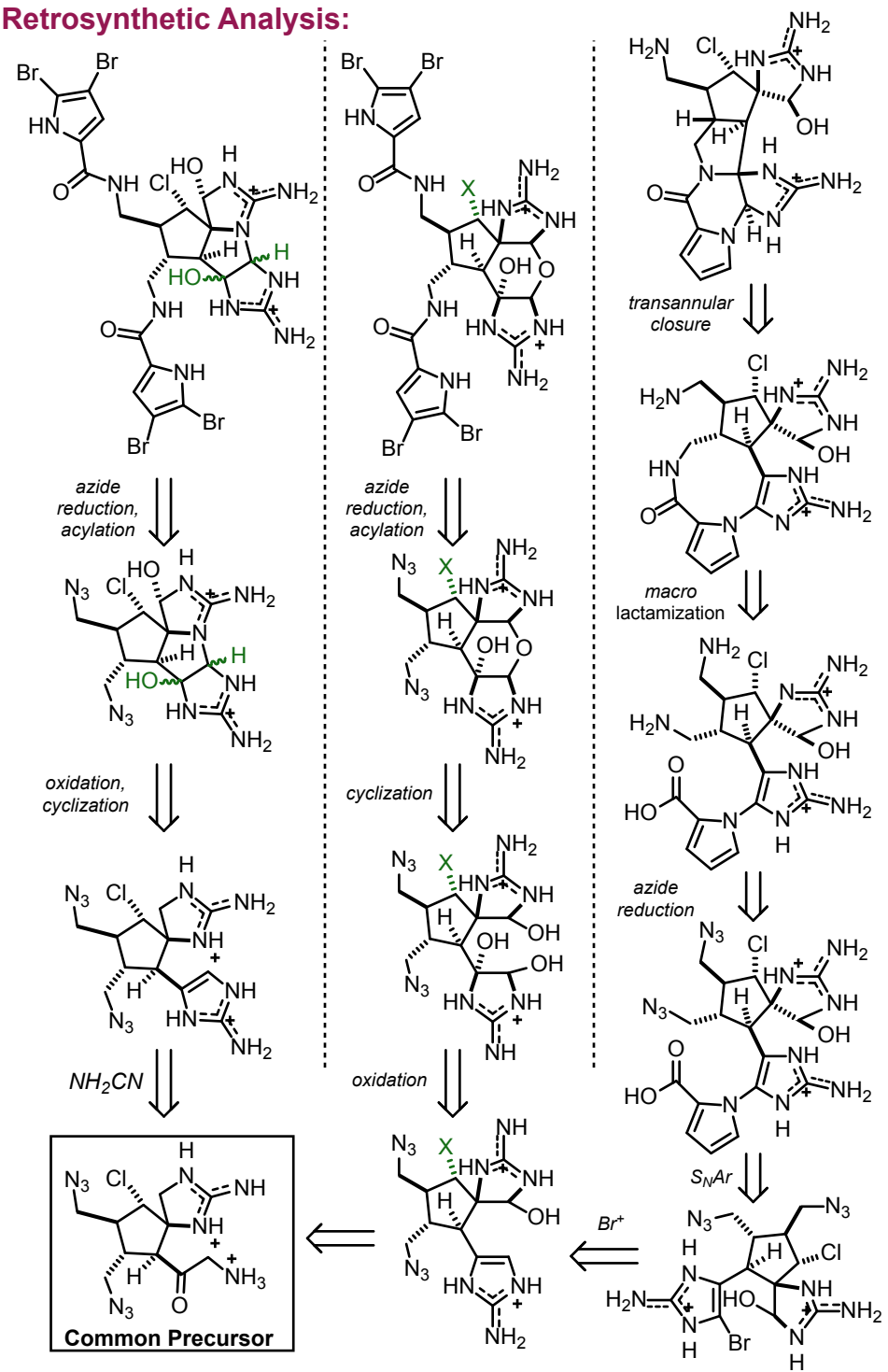


(-) Palau'amine

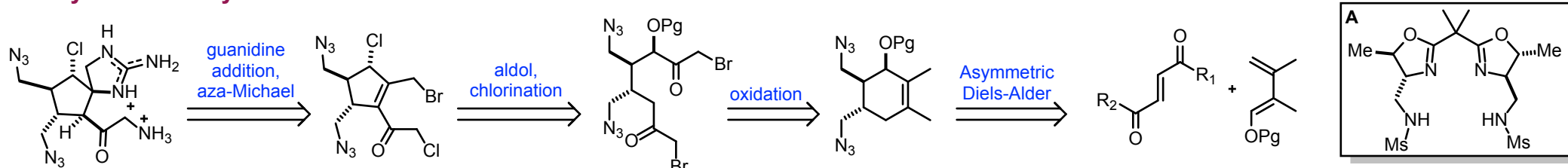


- *Stylotella agminata* sponge
- Releases palau'amine as a toxic deterrent to predators
- Palau'amine cytotoxicity reading: P-388 (0.1 ug/ml), A-549 (0.2 ug/mL)

Retrosynthetic Analysis:

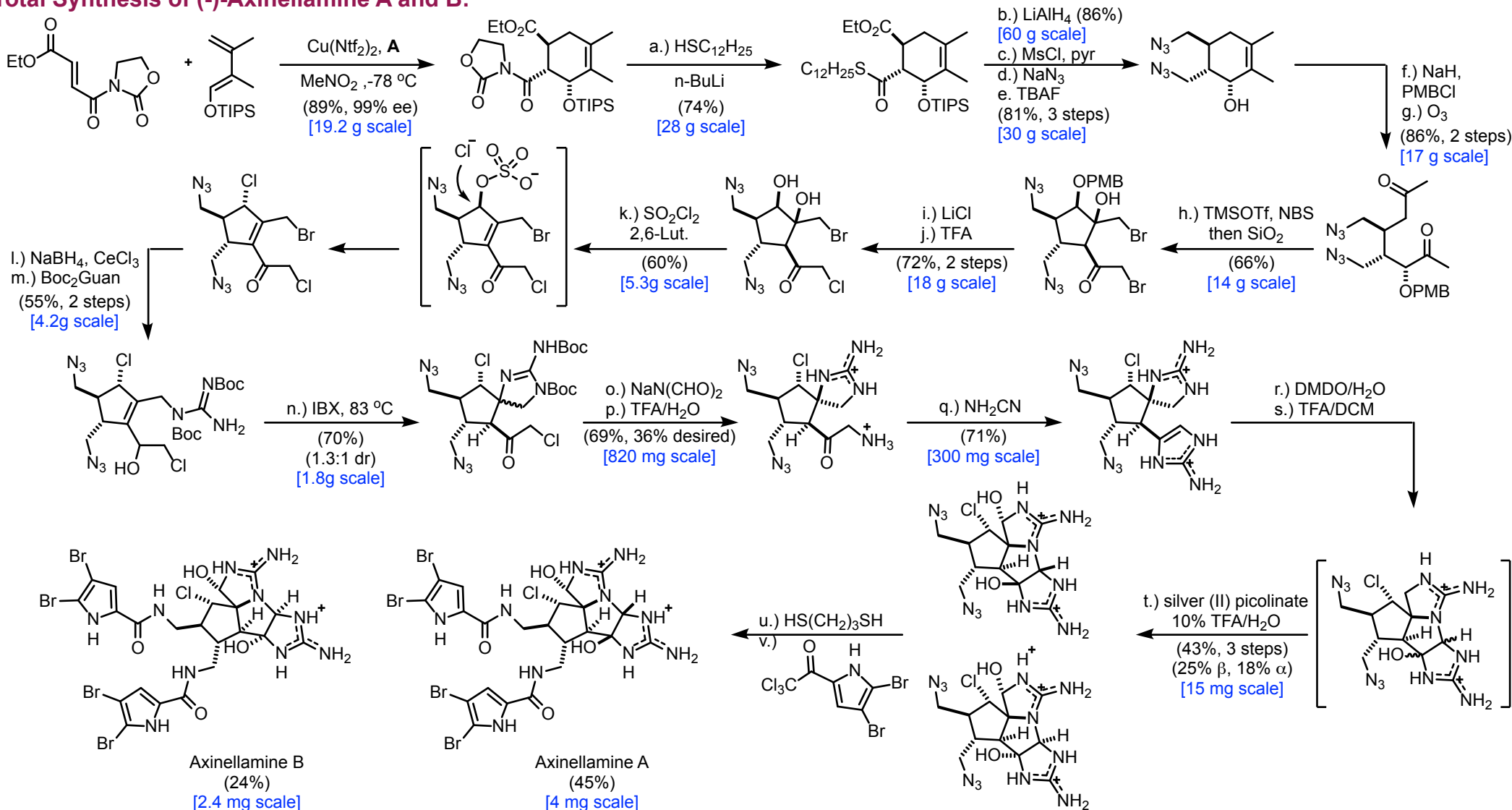


Retrosynthetic Analysis of the Common Precursor:

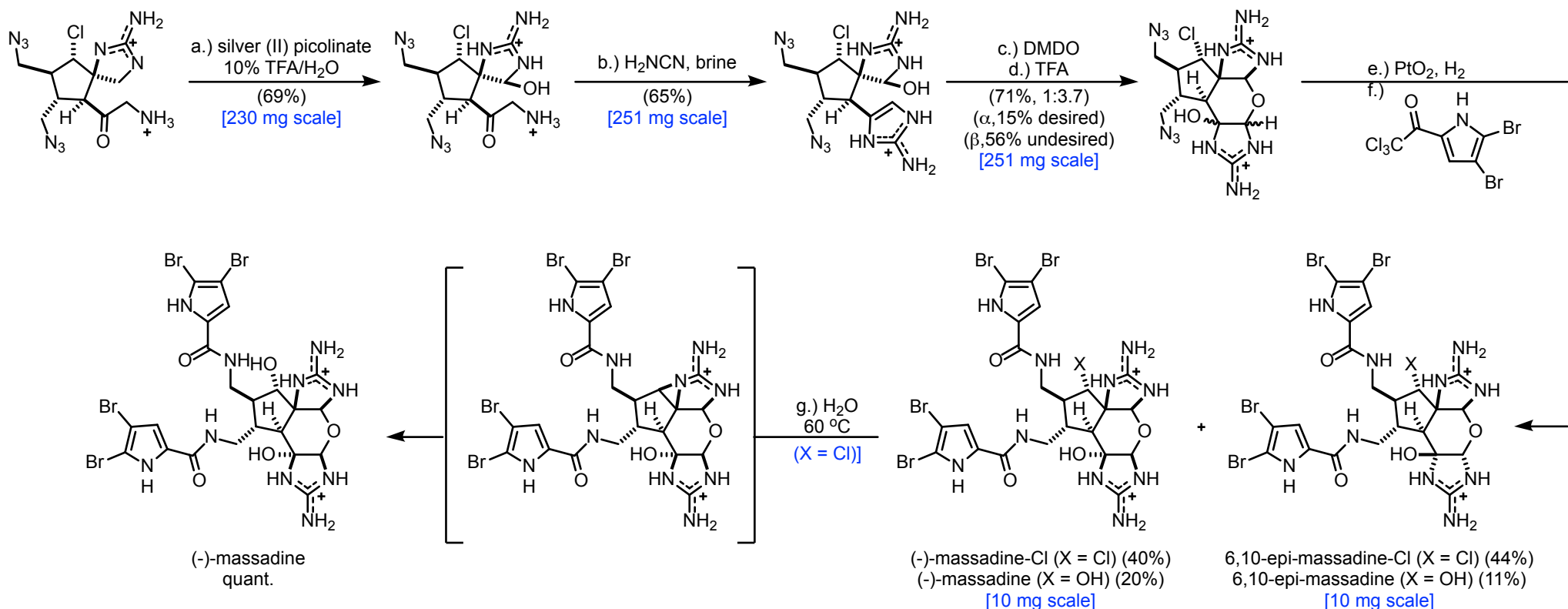


"As alluded to earlier, this disconnection was notably lacking in precedent, and thus its inclusion into the retrosynthesis was not without a significant amount of risk."

Total Synthesis of (-)-Axinellamine A and B:



Pushing Forward: The Total Synthesis of (-)-Massadine and (-)-Massadine Chloride:



One Last Time: The Total Synthesis of Palau'amine

