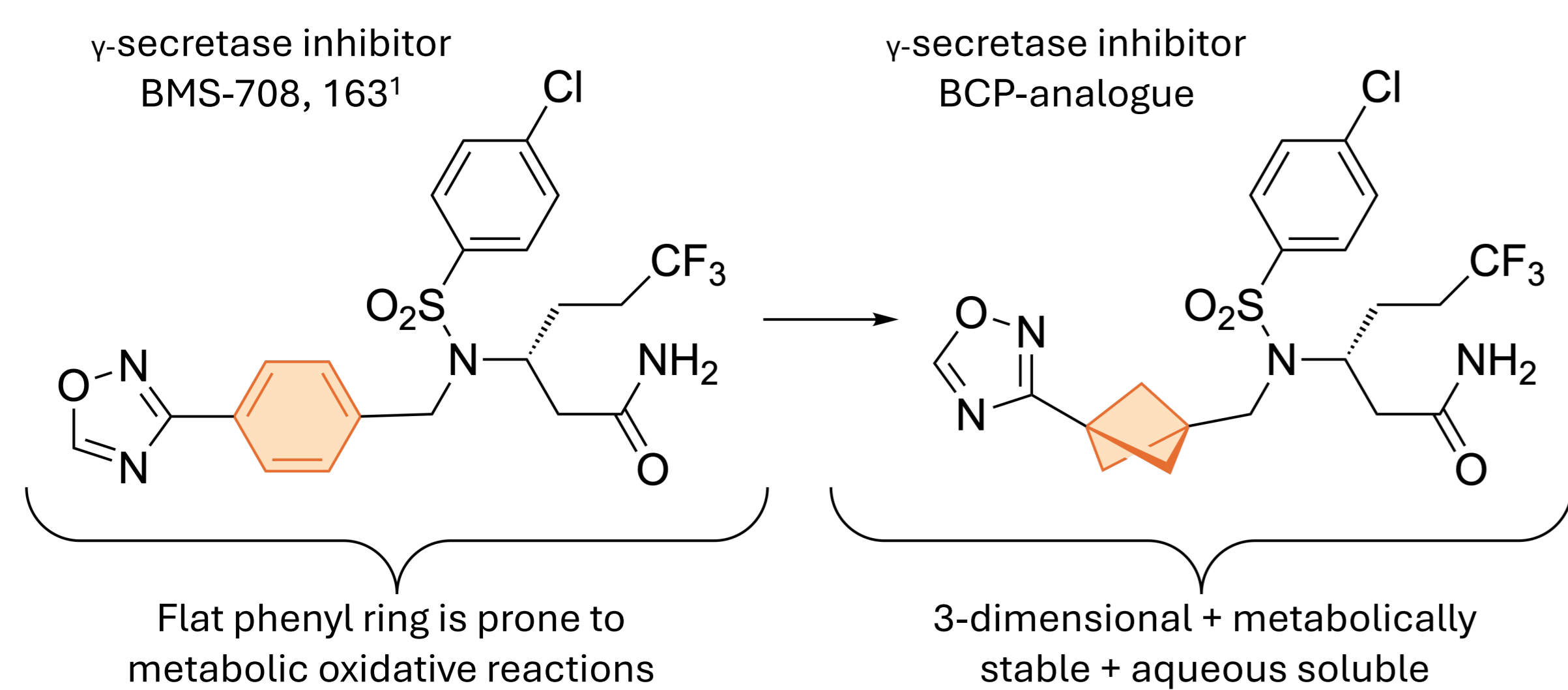


# Accessing three-dimensional space for novel pharmaceuticals

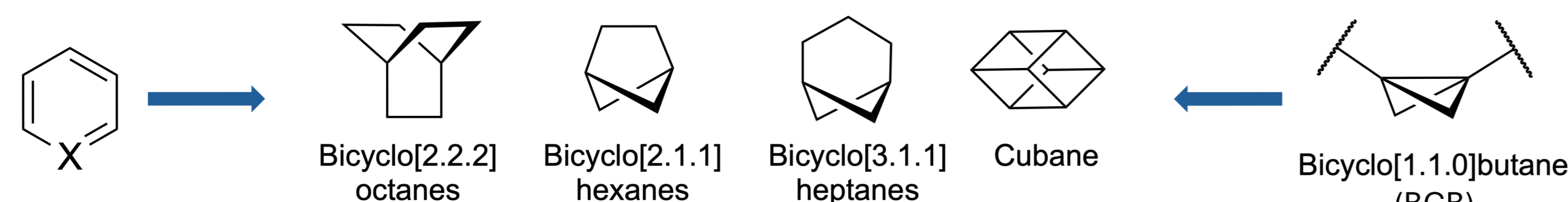
Erin Epp, Kushal Dhake, David Leitch\* - Department of Chemistry, University of Victoria, Canada

## BACKGROUND

### Bioisosterism:

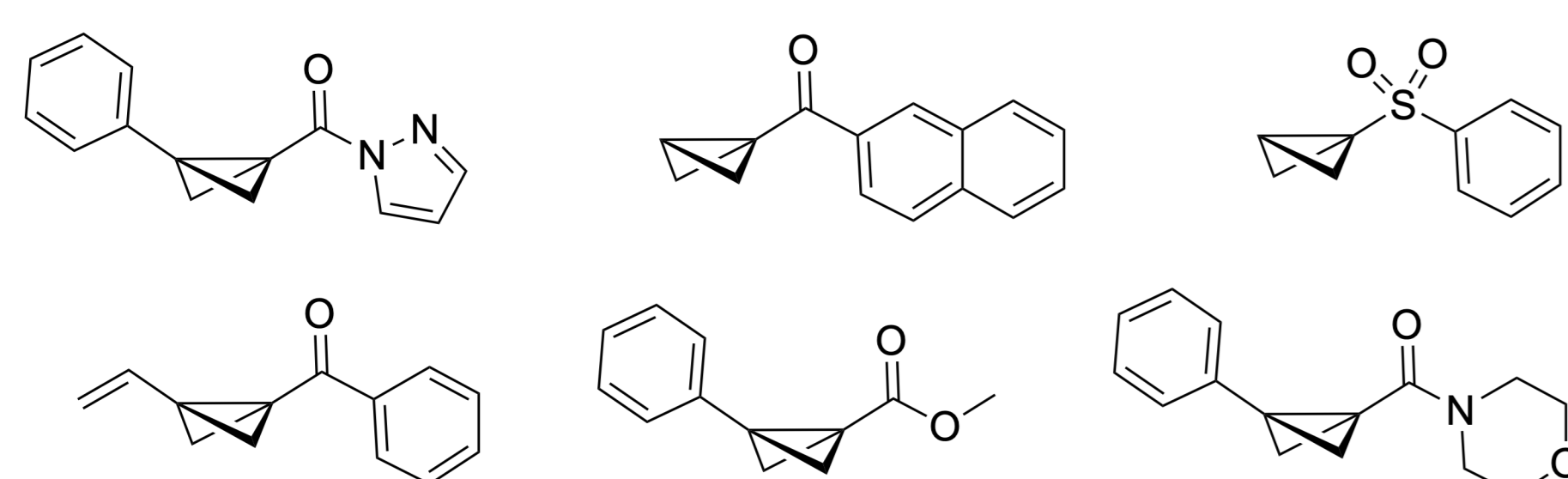


### Aromatic bioisosteric replacements:



## PREVIOUS WORK

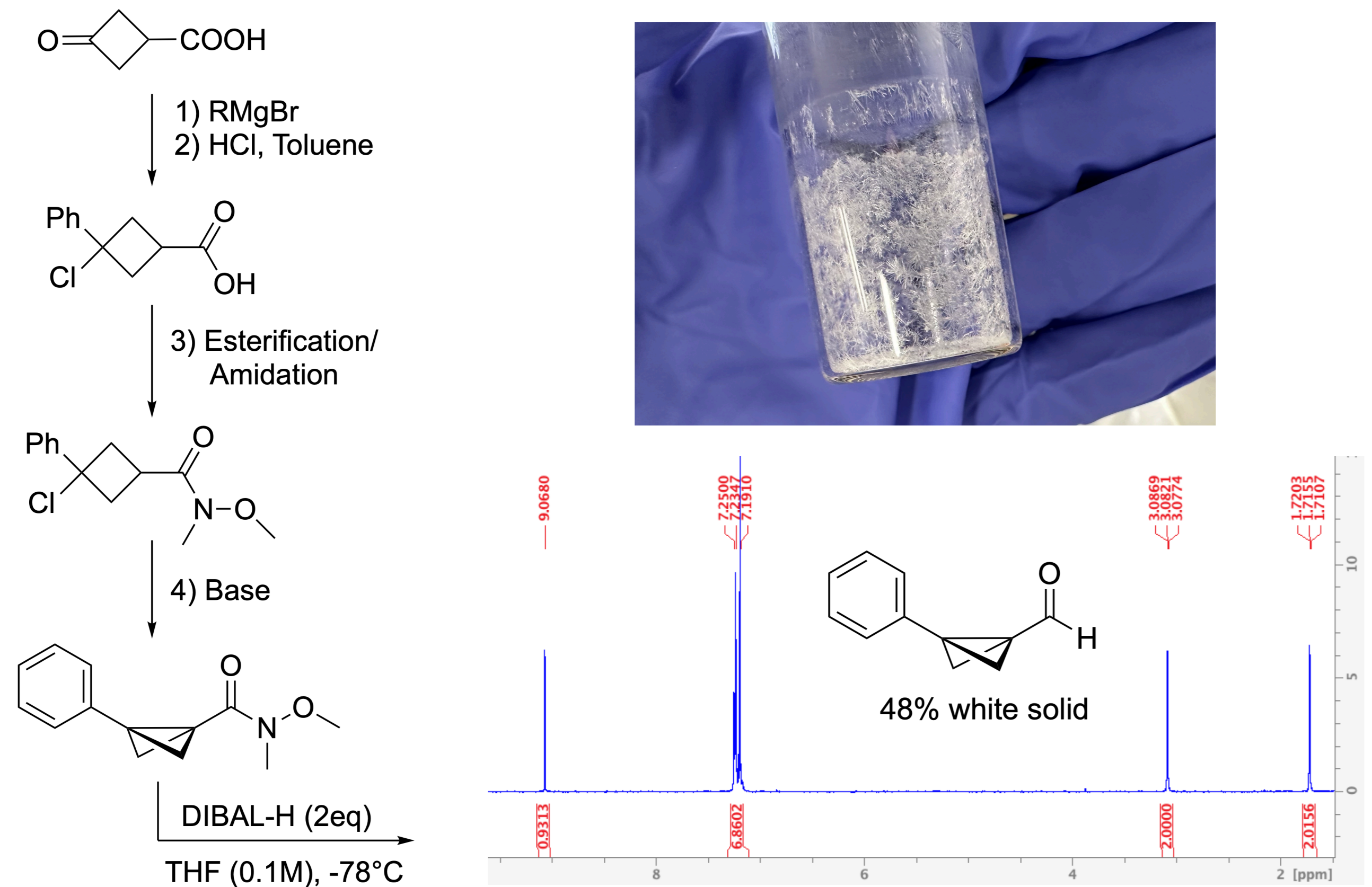
### Current BCBs<sup>2</sup>:



**Our objective**  
Aldehyde functionalized BCB

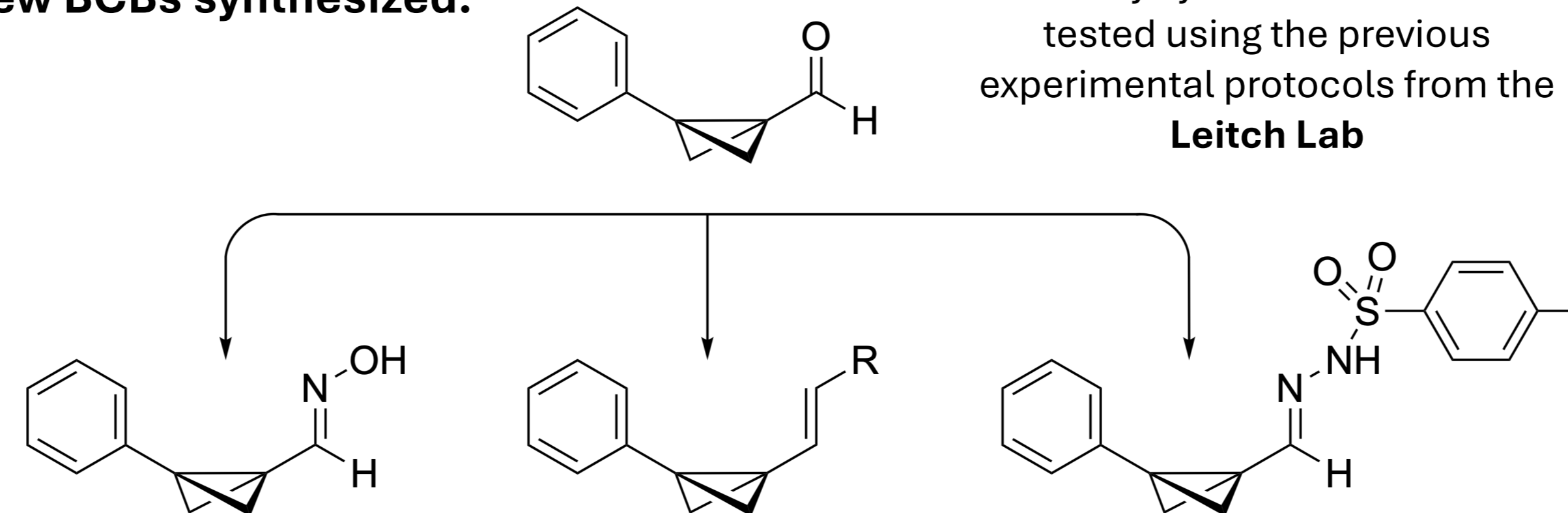
More reactive possibilities!

### Synthesis of 3-phenylbicyclo[1.1.0]butane-1-carbaldehyde:

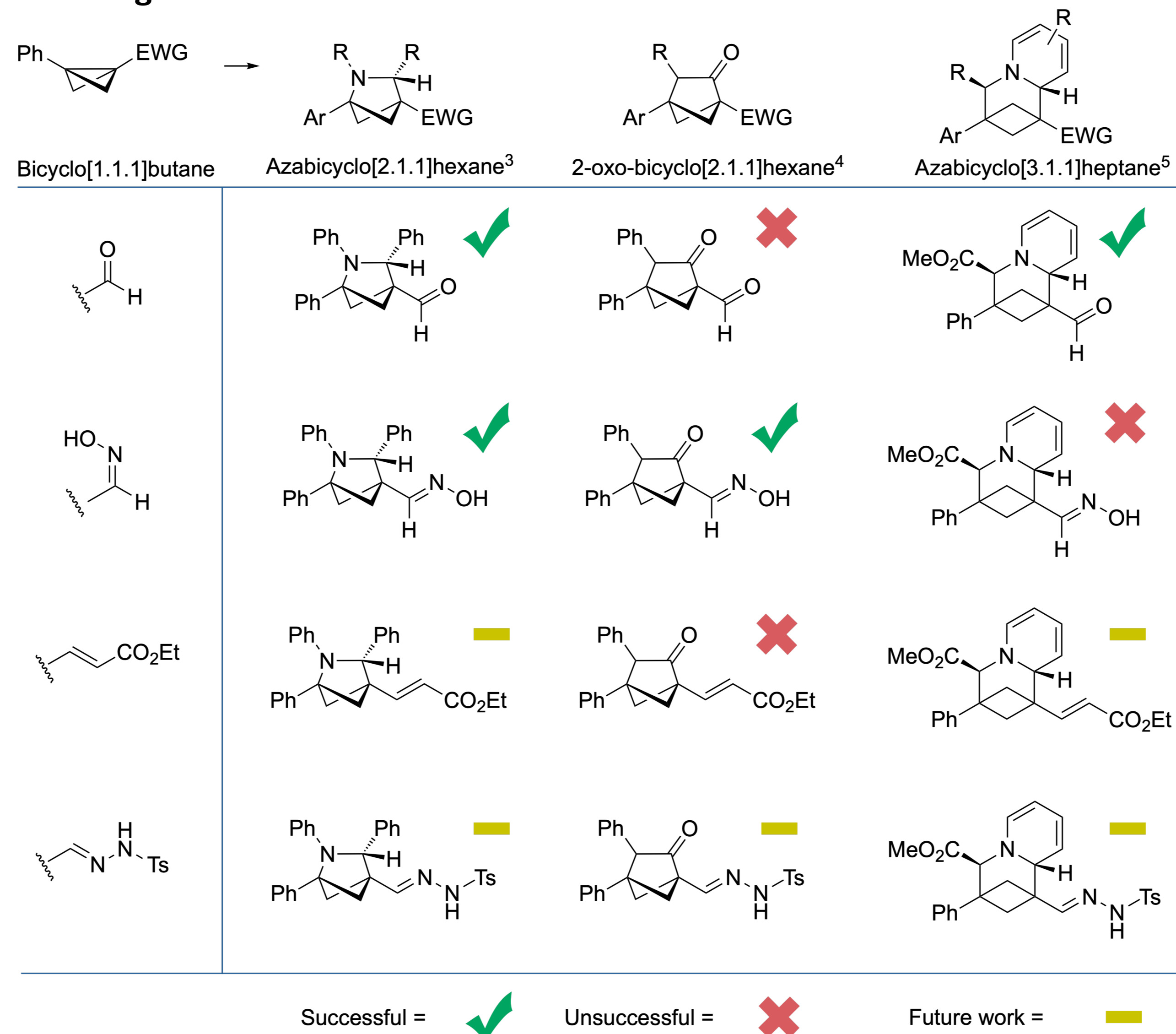


## THIS WORK

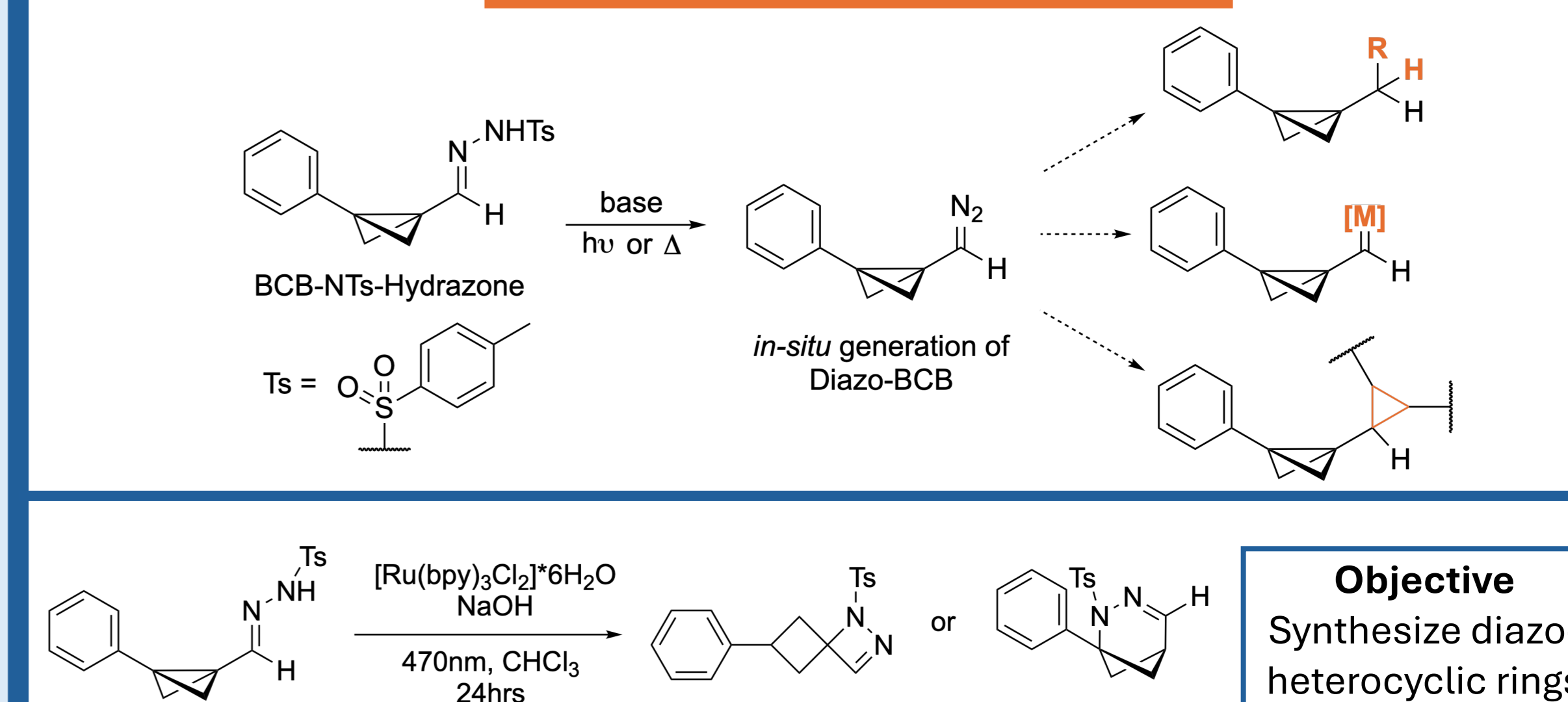
### New BCBs synthesized:



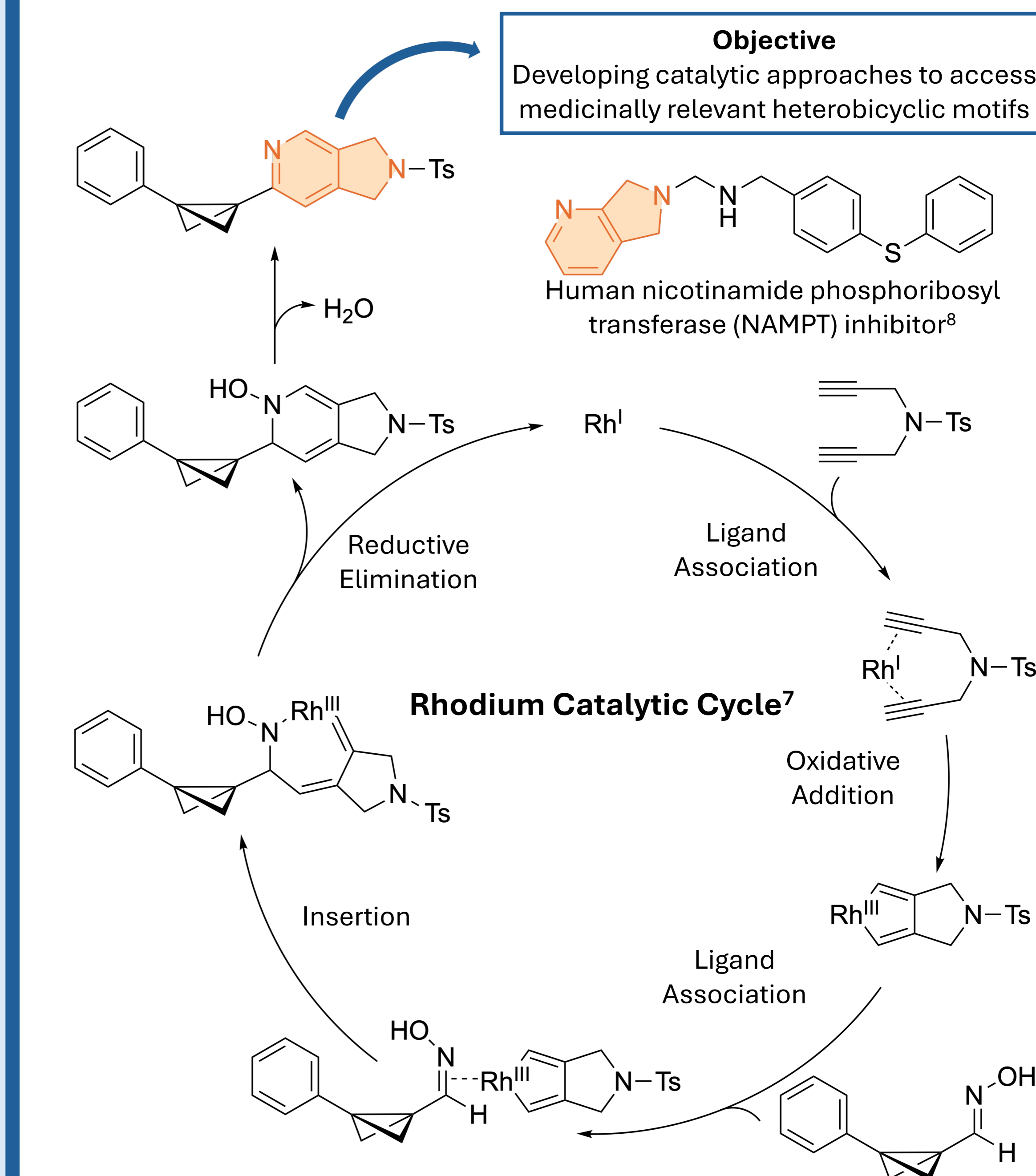
### Testing the new BCBs:



## HYDRAZONE

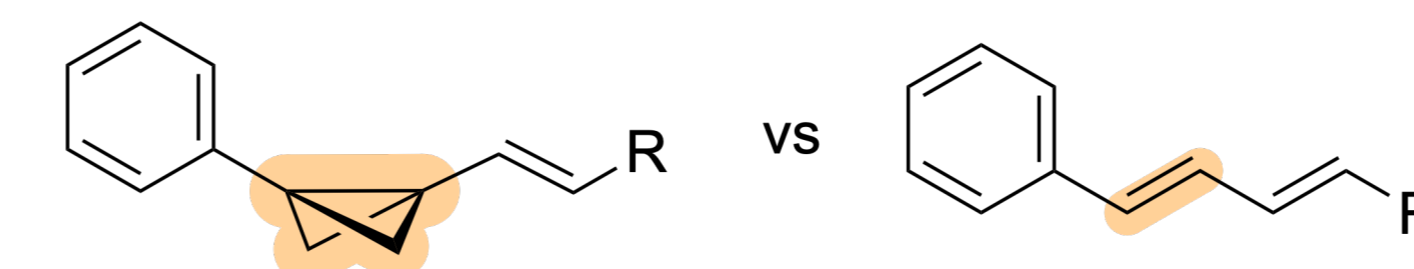


## OXIME

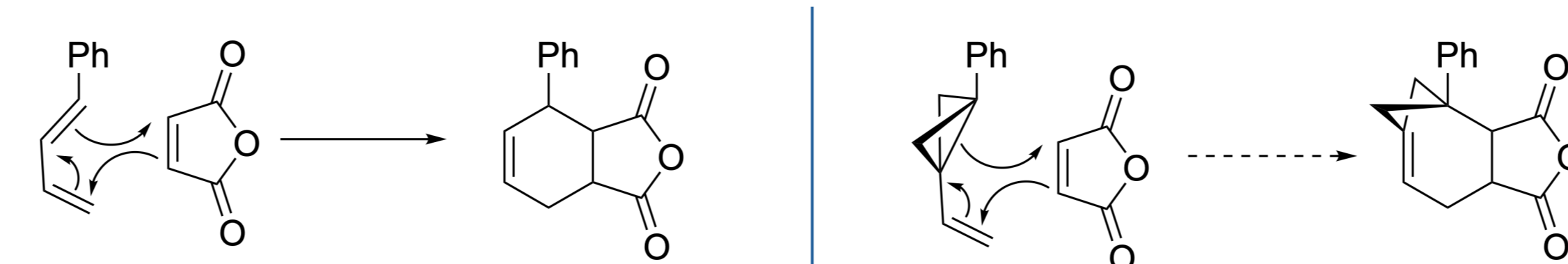


## ALKENE

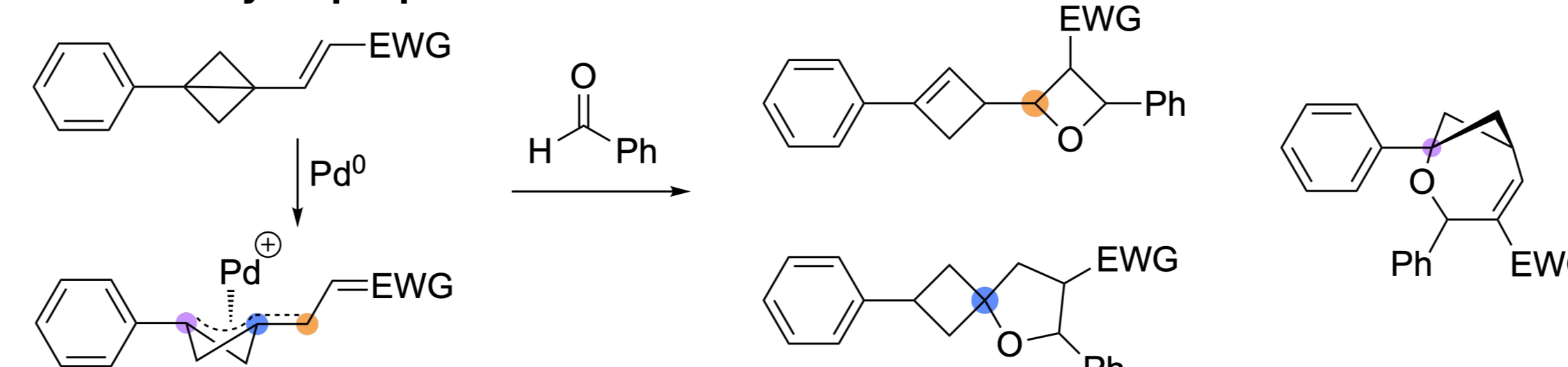
Objective: Test BCB alkene in comparison to standard conjugated systems



### Diels-alder proposal:



### Palladium catalysis proposal<sup>6</sup>:



## ACKNOWLEDGMENTS



References: 1. *J. Med. Chem.* **2012**, *55*, 7, 3414-3424; 2. *CCS Chem.* **2025**, *7*, 1903-1934; 3. *Angew. Chem. Int. Ed.* **2022**, *134*, e202204719; 4. *Chem. Commun.* **2023**, *59*, 13847-13850; 5. *Chem. Commun.* **2024**, *60*, 13008-13011; 6. *Nat. Synth.* **2025**, *4*, 124-133; 7. *Org. Chem. Front.* **2023**, *10*, 127-132; 8. *Bioorg. Med. Chem. Lett.* **2013**, *23*, 17, 4875-4885