



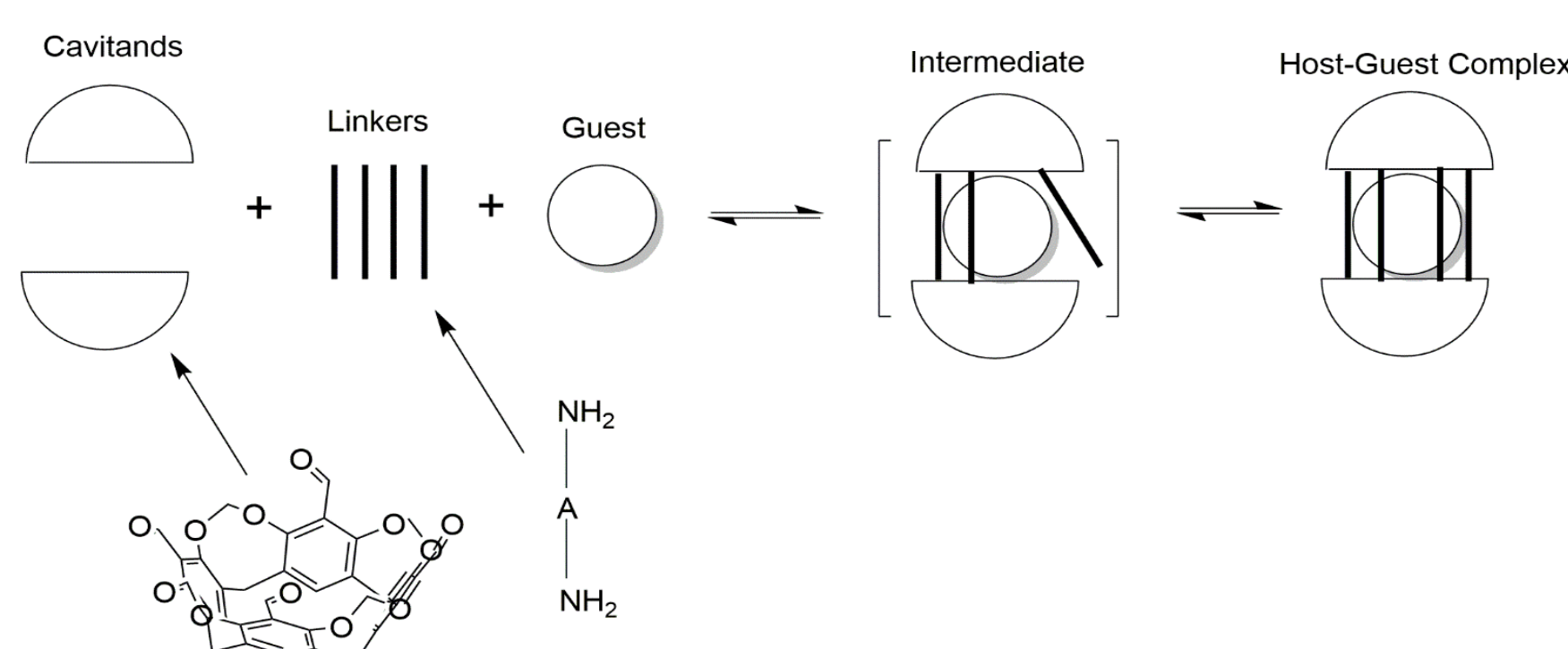
# Synthesis and Properties of a Water Soluble Octamine Hemicarcerand

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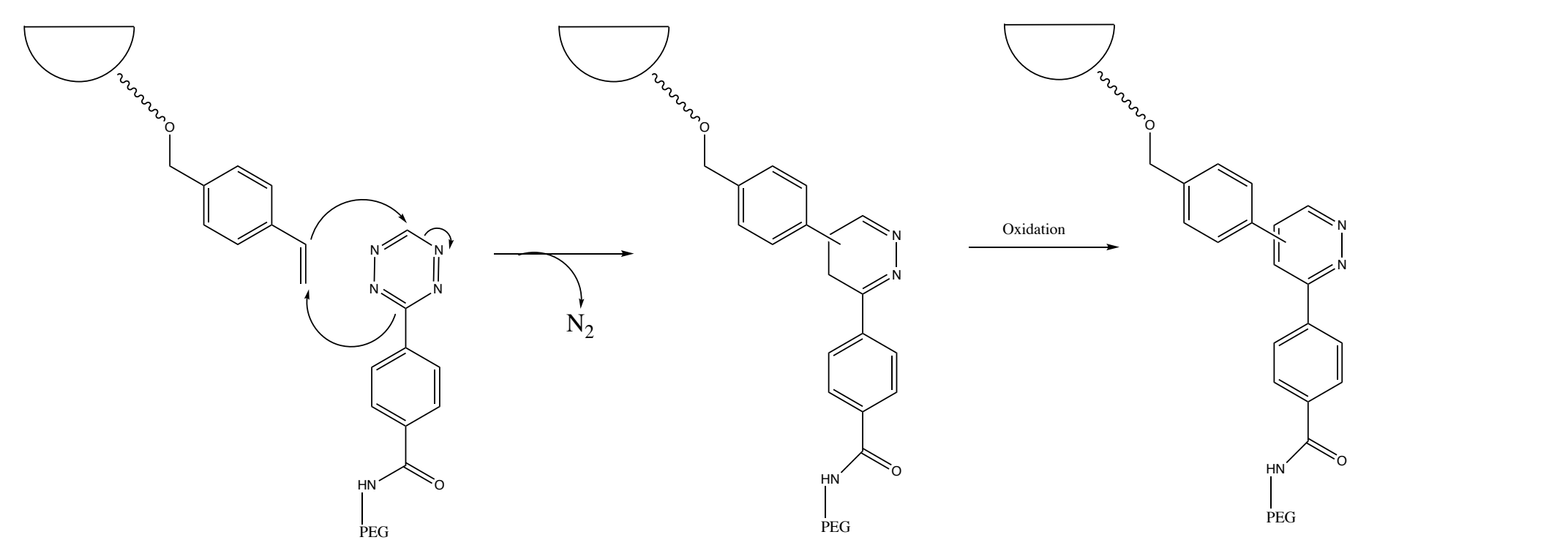
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## Introduction

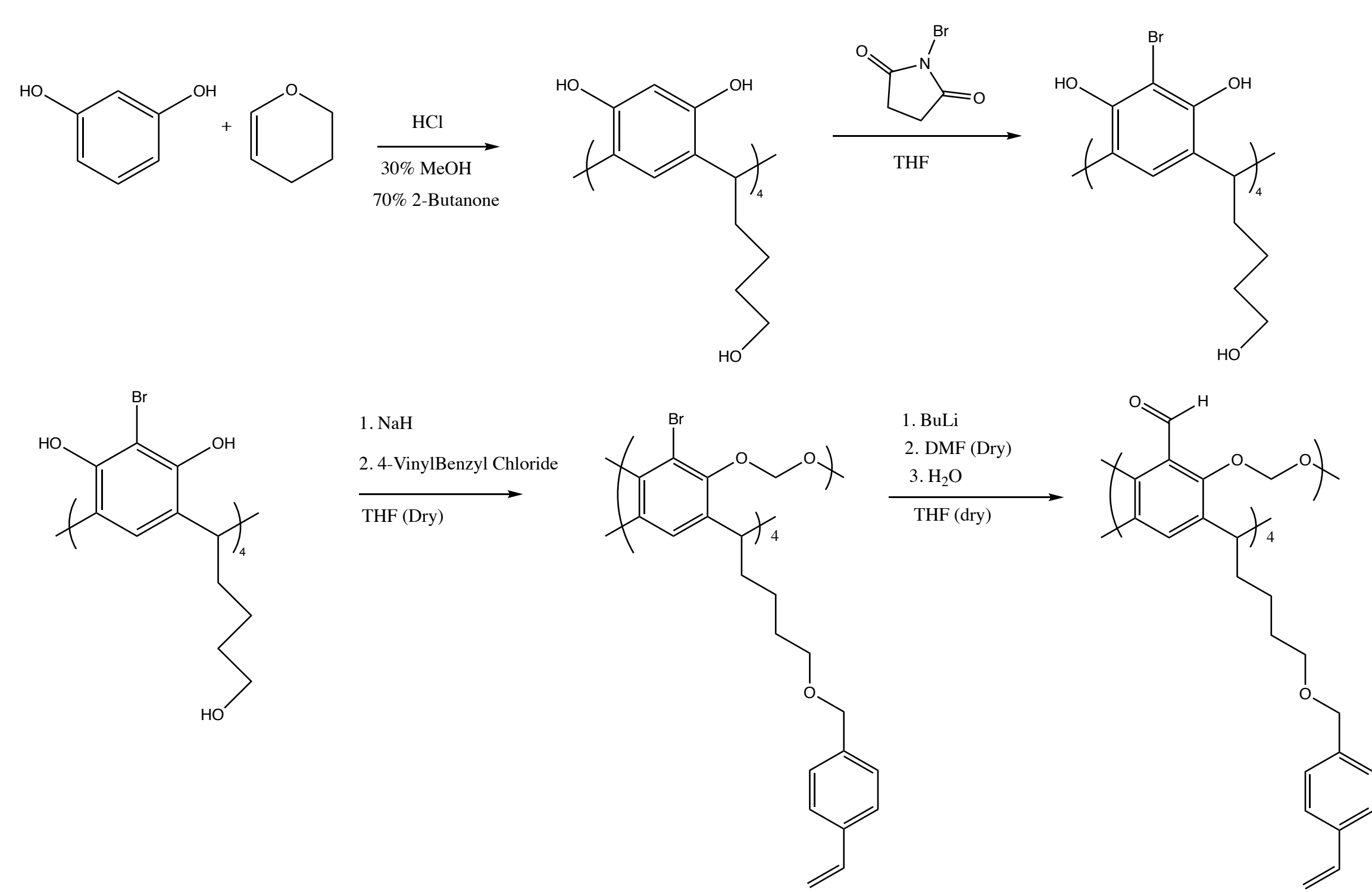
Hemicarcerands are nanocapsules which can form stable complexes called hemicarceplexes at ambient temperatures.



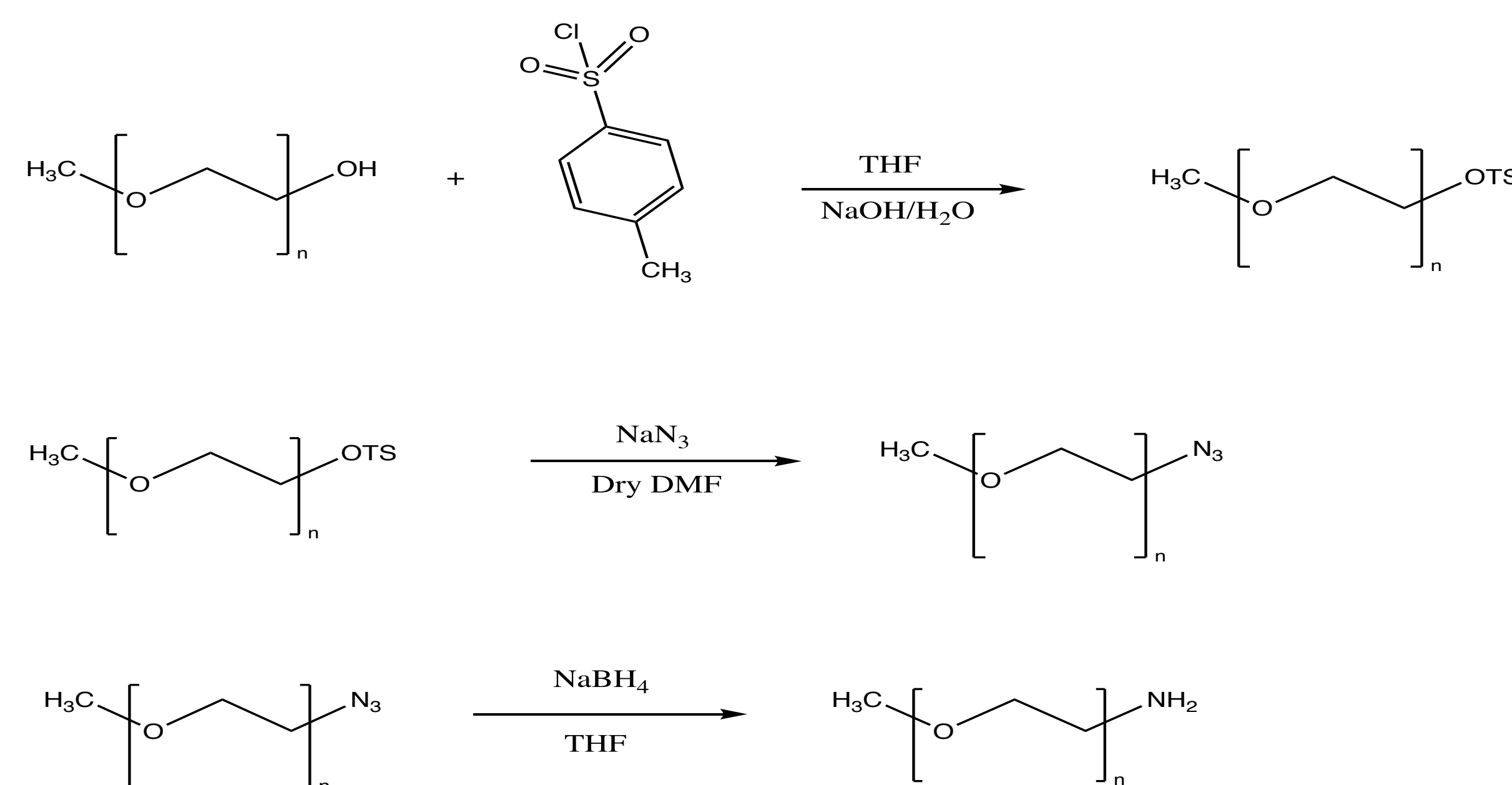
In order to make these capsules water-soluble we create a modified polyethylene glycol tetrazine compound that attaches to a styrene tail of the capsule through Inverse Electron Demand Diels-Alder Reaction (IEDDA).



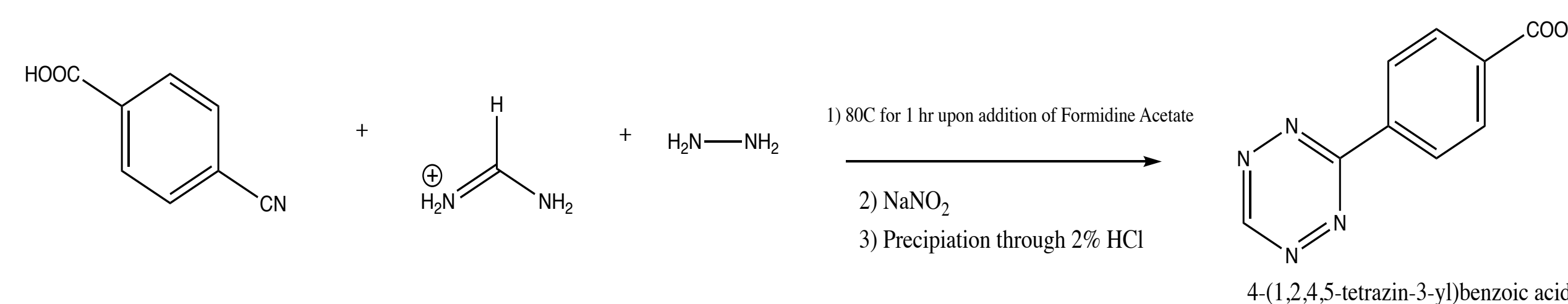
## Cavitand Synthesis



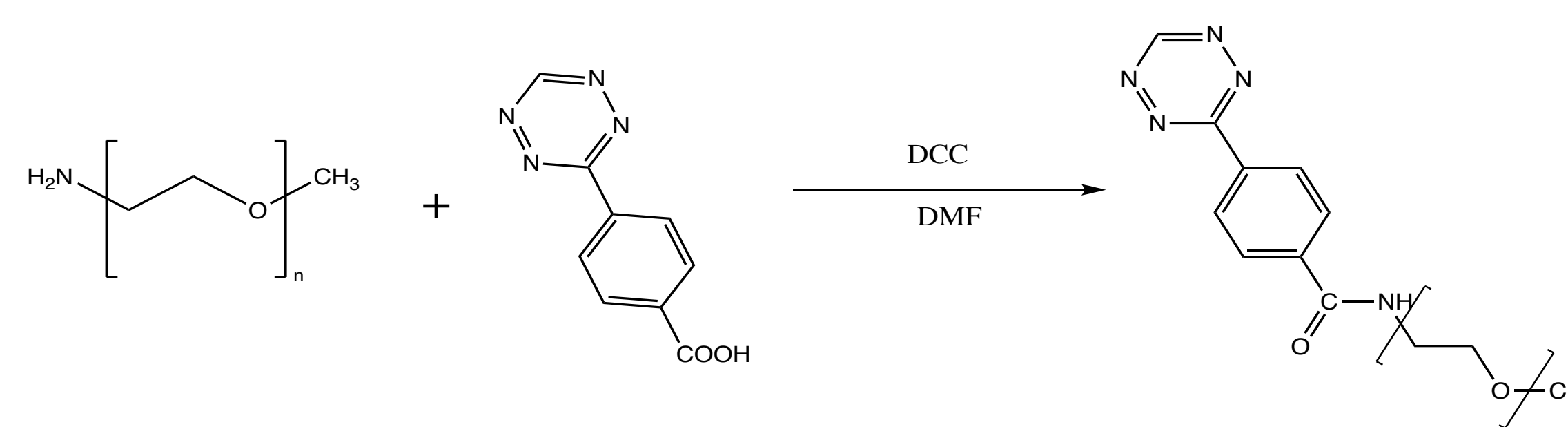
## PEG-amine Synthesis



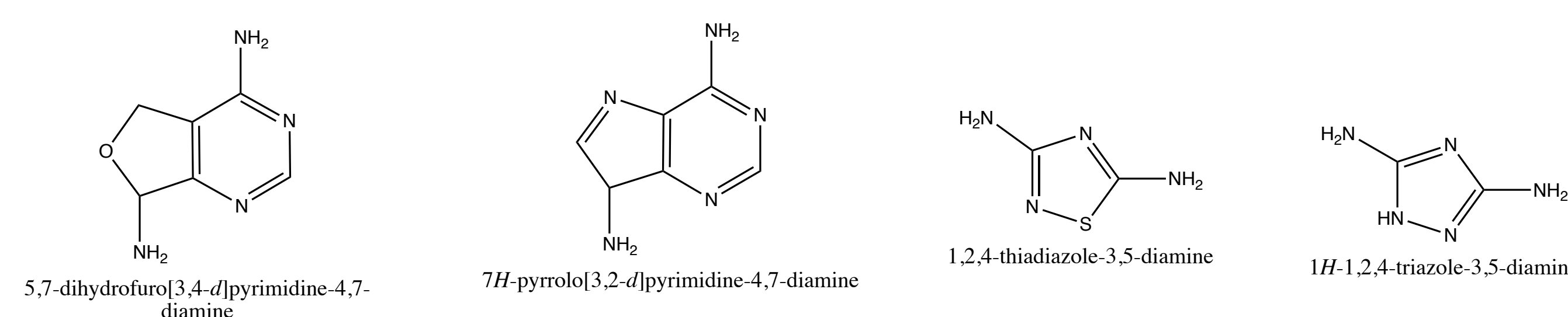
## Tetrazine Synthesis



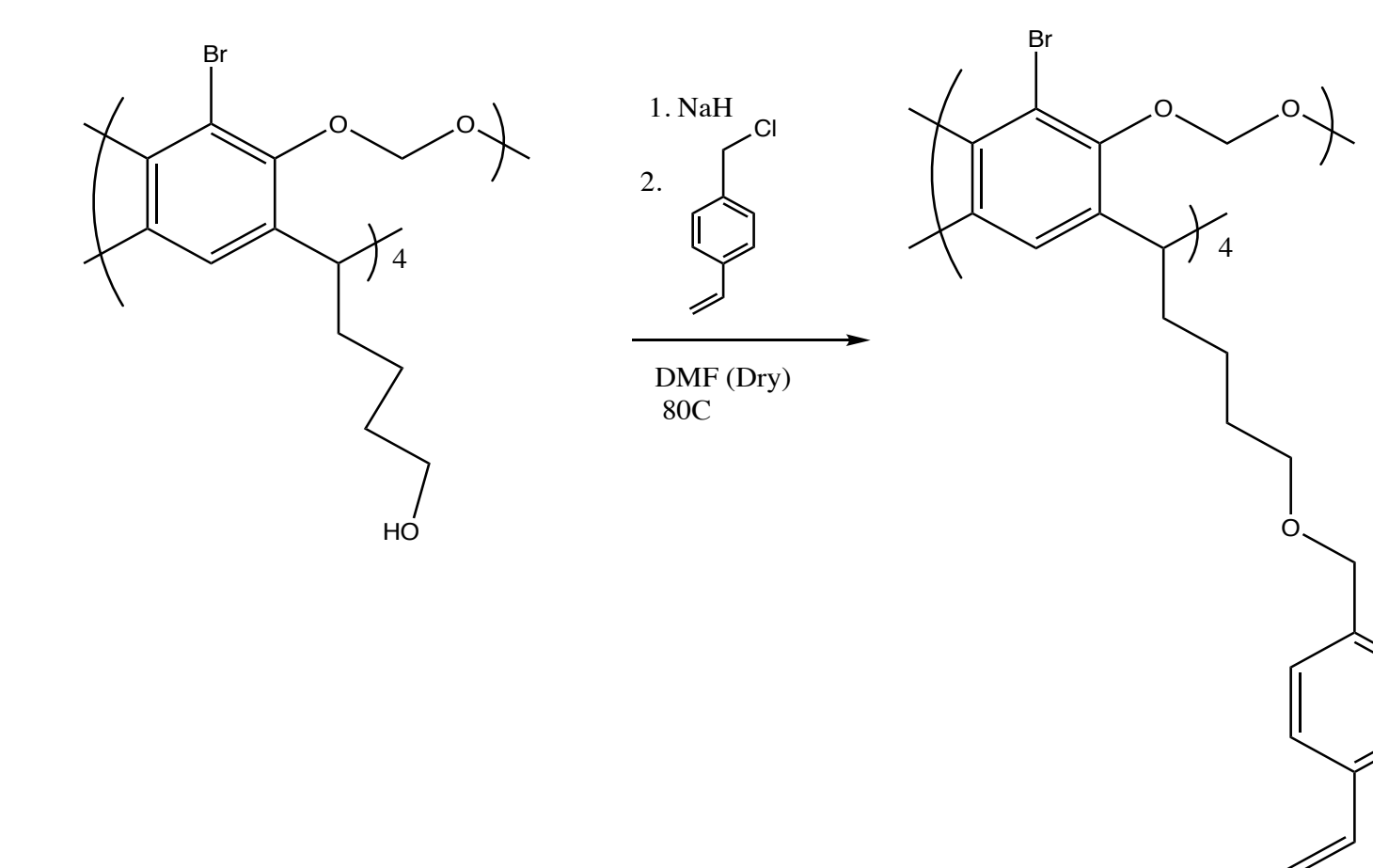
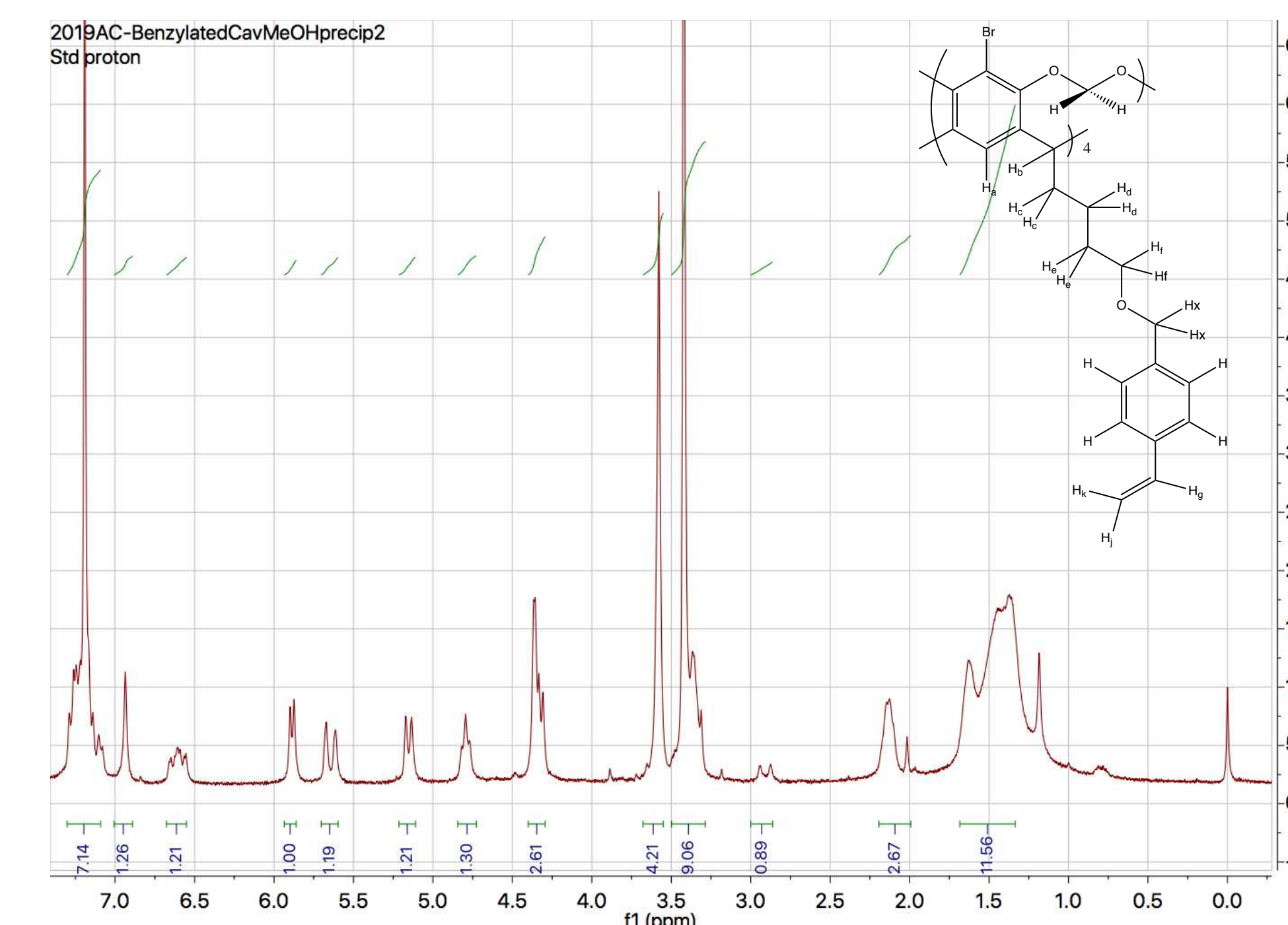
## Connection reaction



## Possible linkers



## NMR



## Conclusion

- Polyethylene Glycol Modified Tetrazene is predicted to make hemicarcerand water soluble
- Further studies involve the investigation of the regioselectivity of the IEDDA reaction when attaching the styrene tail to the modified PEG compound.

