

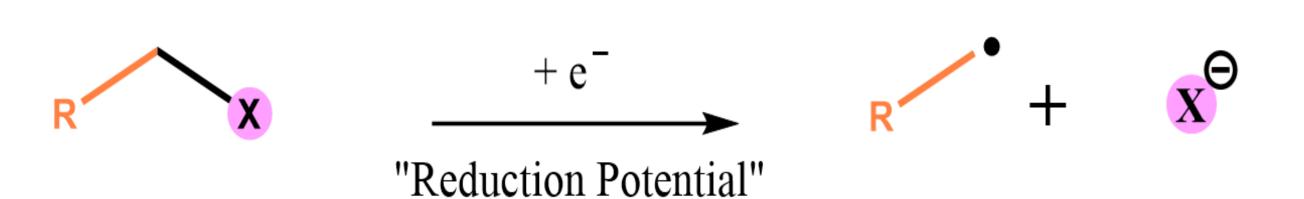
# Contextualizing Lutidine Salts in Photocatalytic, Substitution Reactions

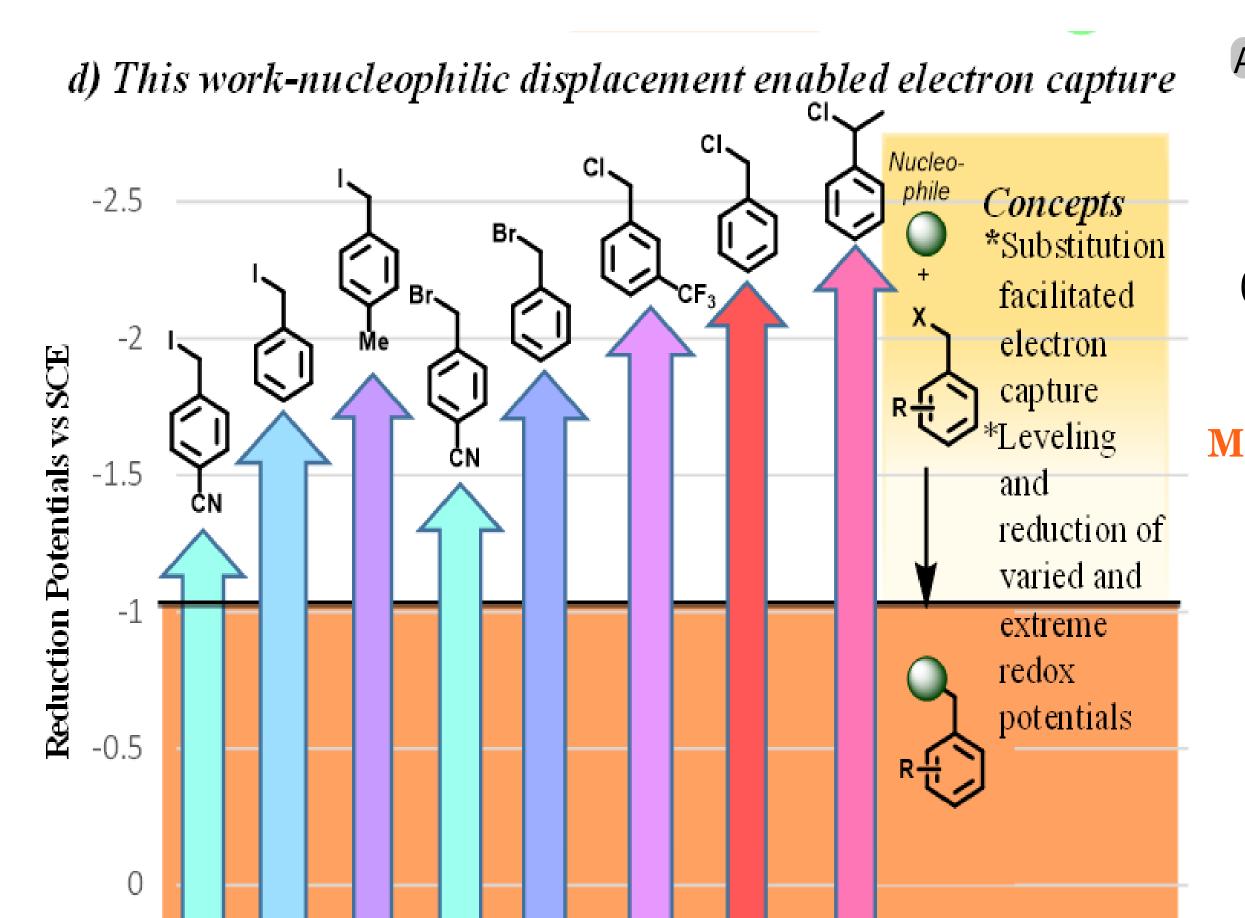
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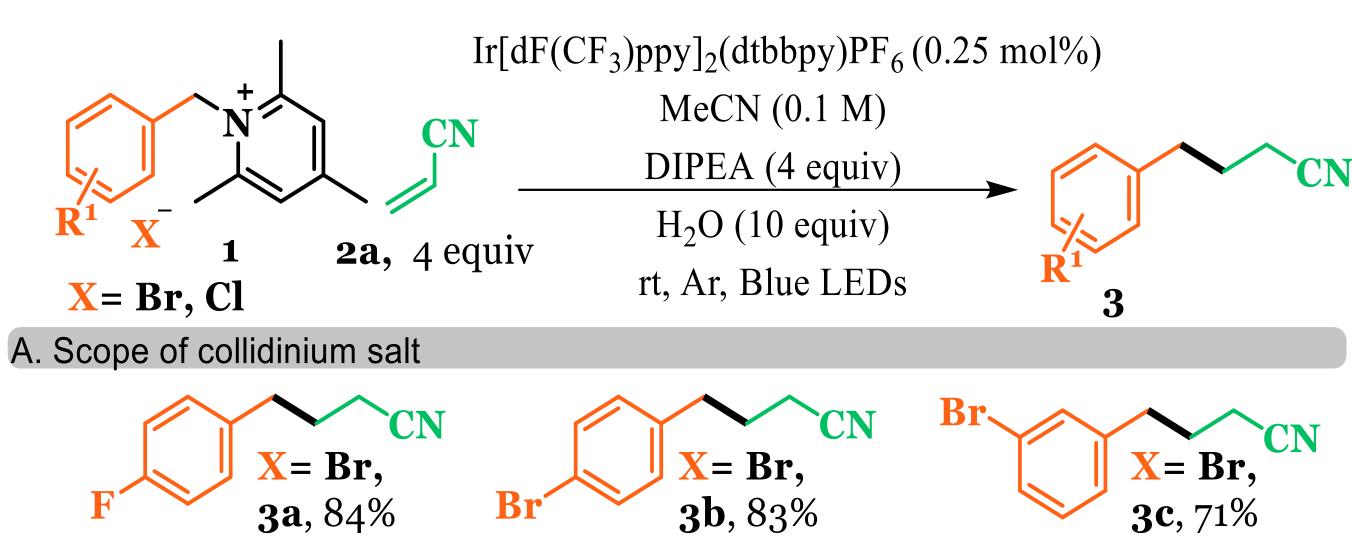
### **Radical Precursors to Normalize Reduction Potentials**

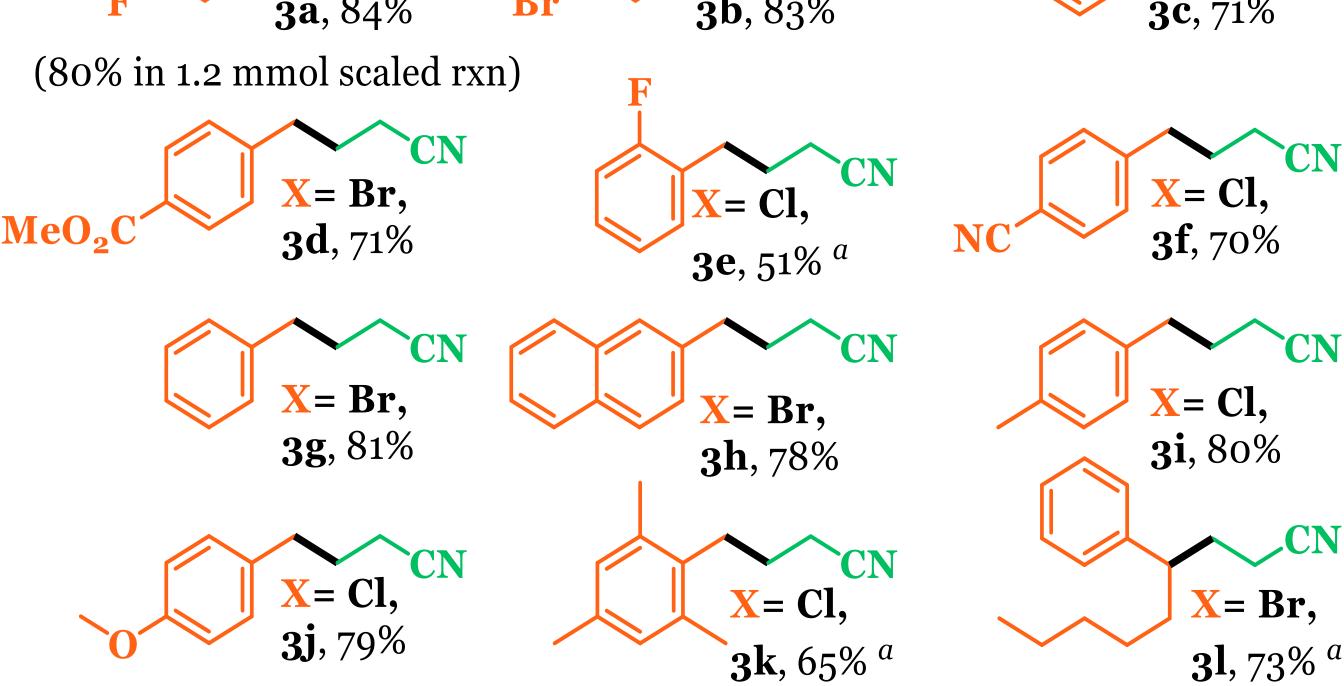
#### **Performance of Collidinium Salts in Giese Addition Reactions**

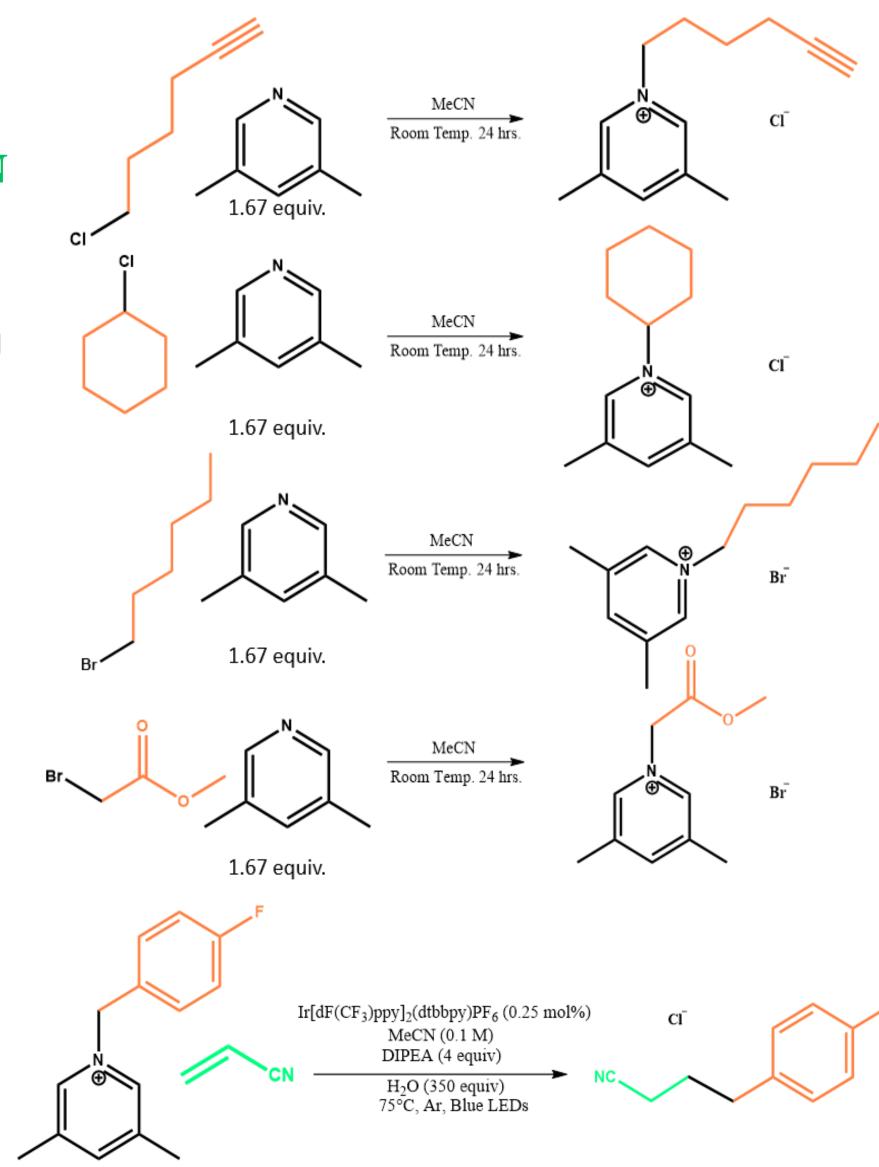
#### **Current Findings**











No salt formation upon workup. Increasing the reaction temperature may drive the reaction to the desired product.

Some precipitate isolated upon workup, but NMR did not confirm formation of the desired salt. Currently investigating the impact of temperature on the reaction.

Salt isolated and confirmed by NMR.
The salt's reactivity under
photocatalytic conditions is currently
under investigation. So far it has not
successfully undergone Giese addition.

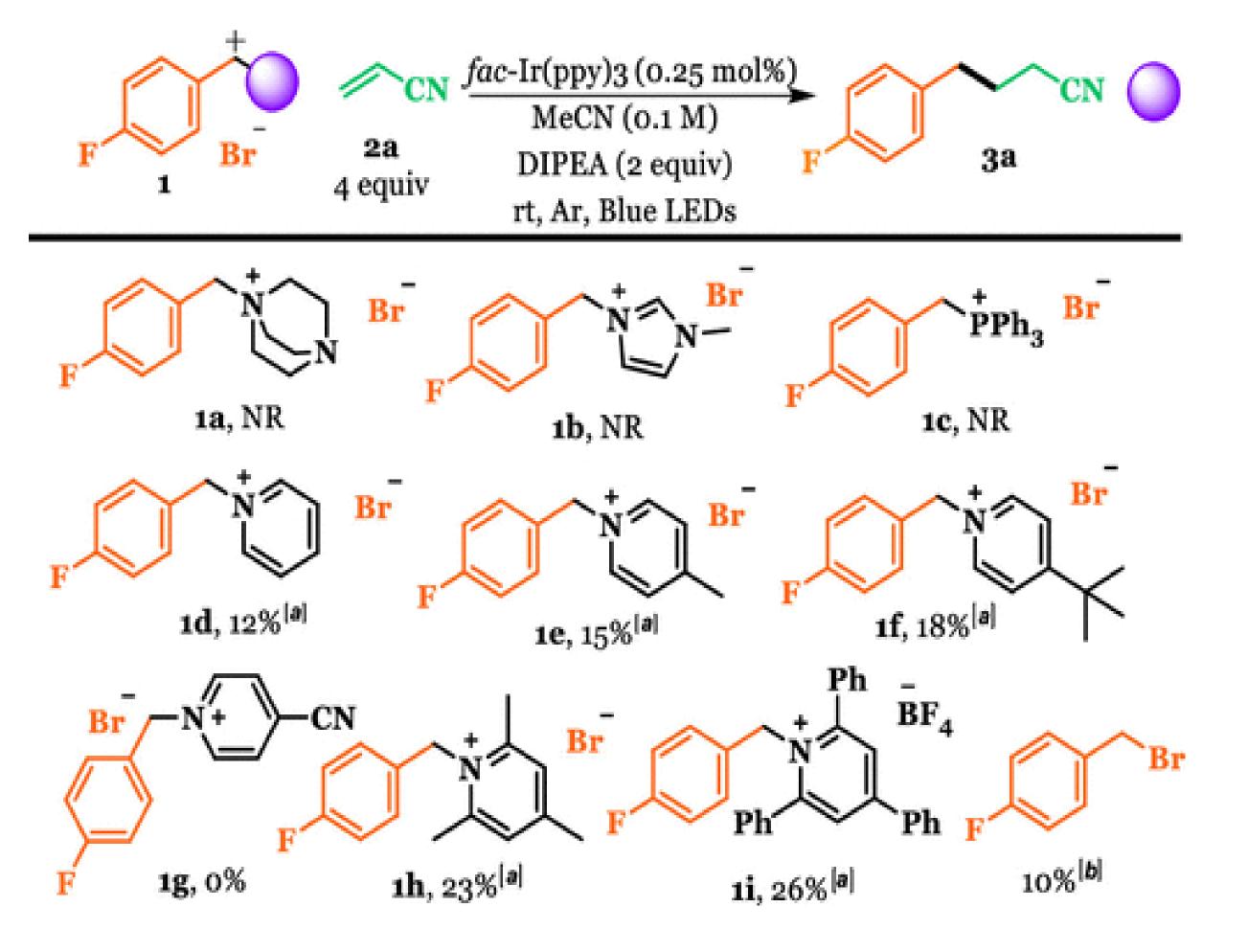
Salt isolated and confirmed by NMR. The salt's reactivity under photocatalytic has yet to be explored.

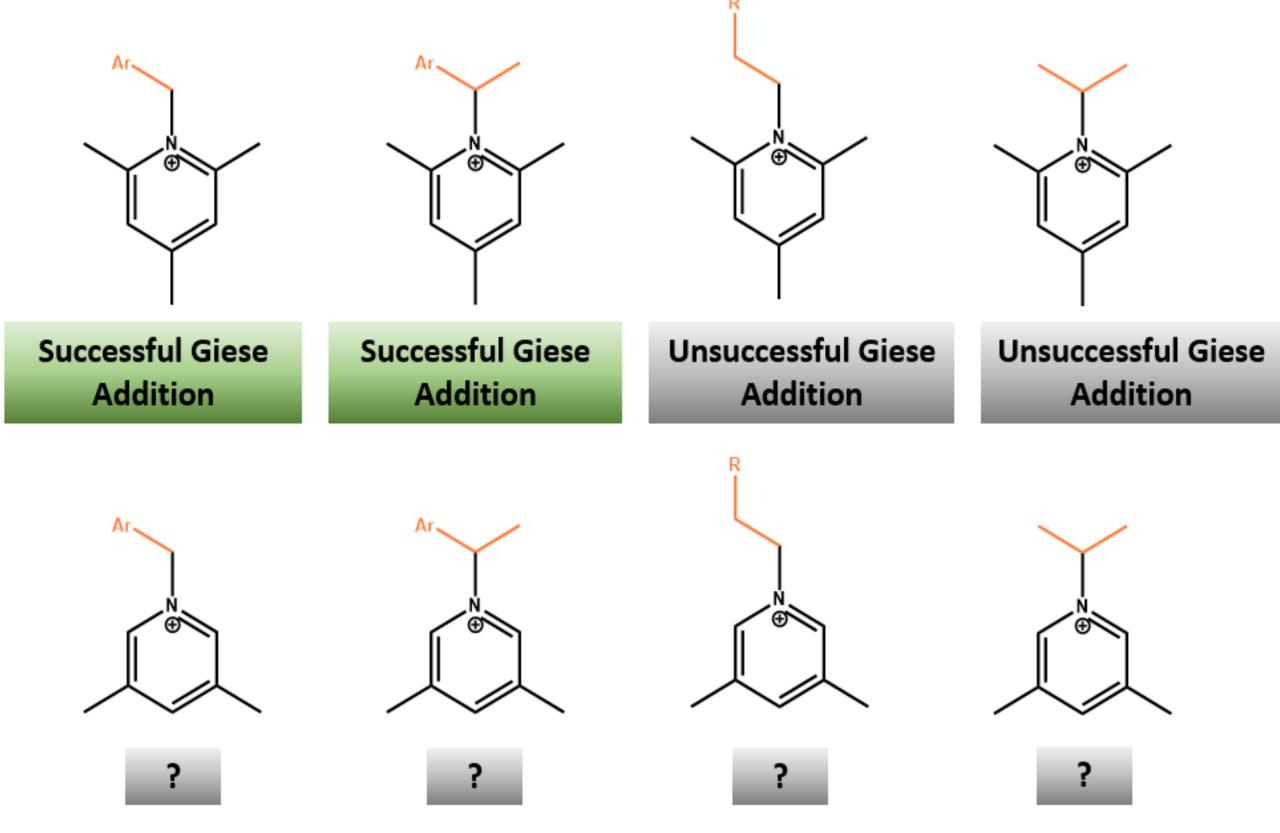
Roshini was able to obtain 85% yield from a Giese addition on this salt. The salt was also made *in situ*.

#### The Search for Redox-Active Salts

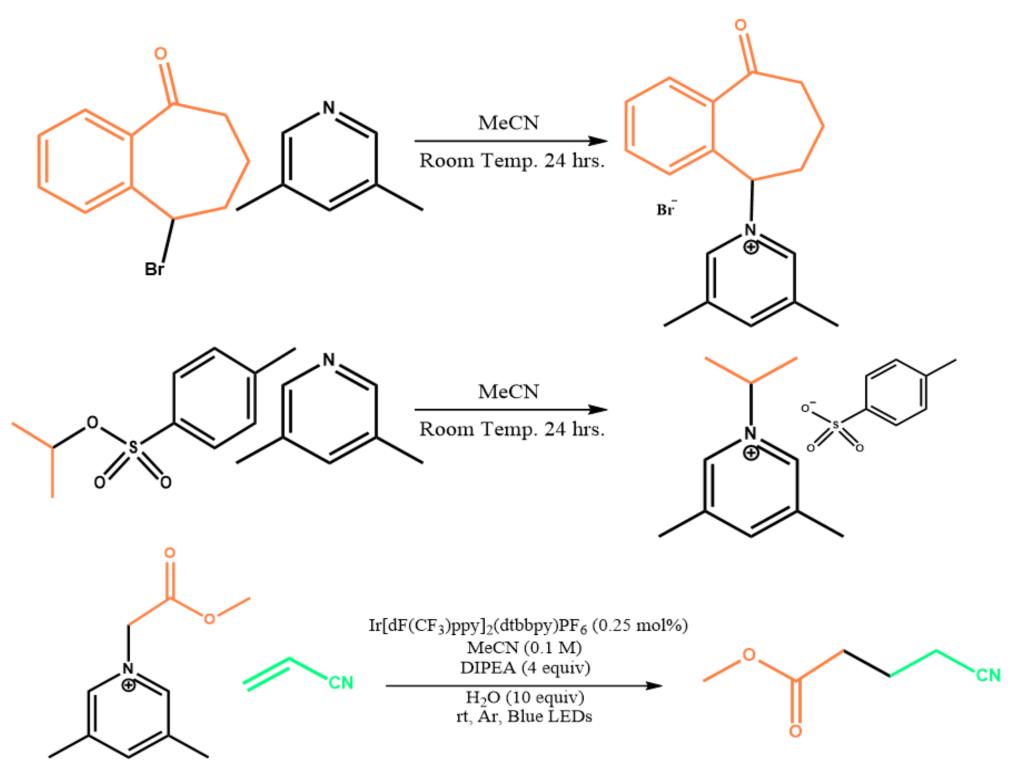
#### **Lutidinium vs. Collidinium Salts**

# **Proposed Reactions Moving Forward**





Reduced steric demand of lutidine expected to increase nucleophilicity while still preventing pyridine functionalization. This could enhance our ability to form the salts *in situ*.



Currently working on the starting material for these proposed salts.

This is an example of the procedures for the Giese addition. I plan to investigate all the salts I can successfully produce under these reaction conditions.

## References

Coupling Photocatalysis and Substitution Chemistry to Expand and Normalize Redox-Active Halides

Manjula D. Rathnayake and Jimmie D. Weaver

Organic Letters 2021 23 (6), 2036-2041

DOI: 10.1021/acs.orglett.1c00173