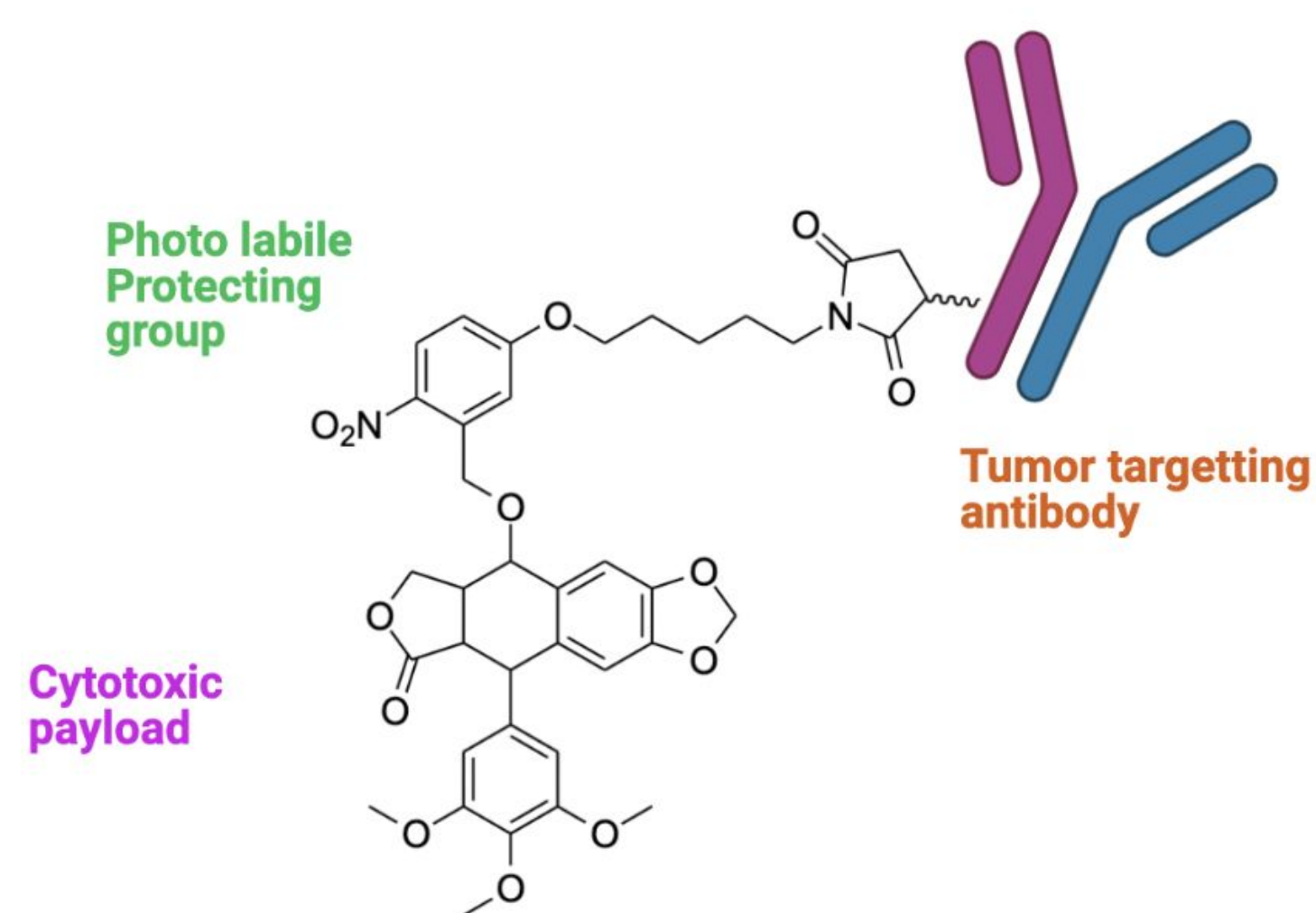


# Optimizing Conjugation and Linker Chemistry in the Development of a Novel Photoreleasable Antibody-Drug Conjugate Technology

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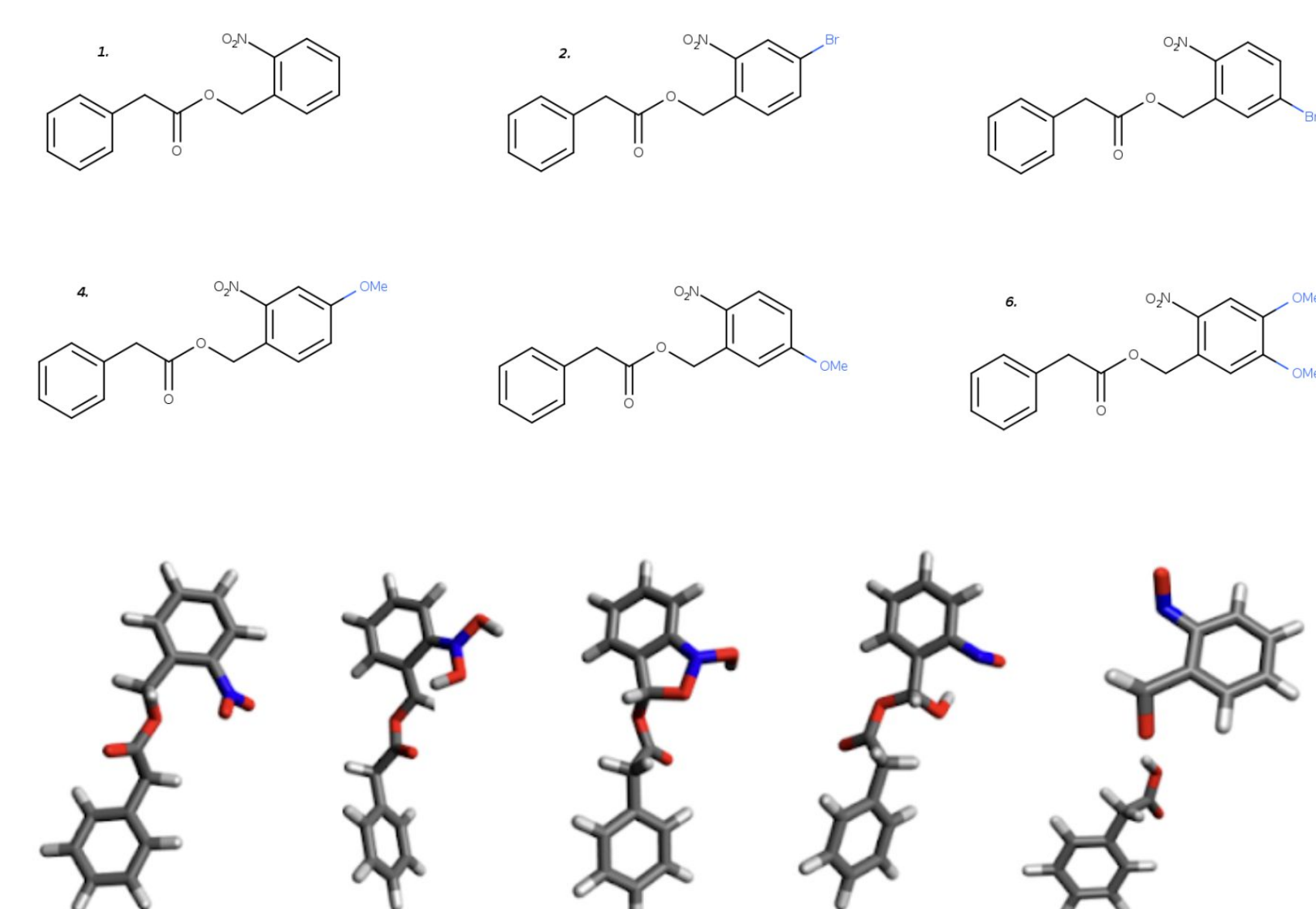
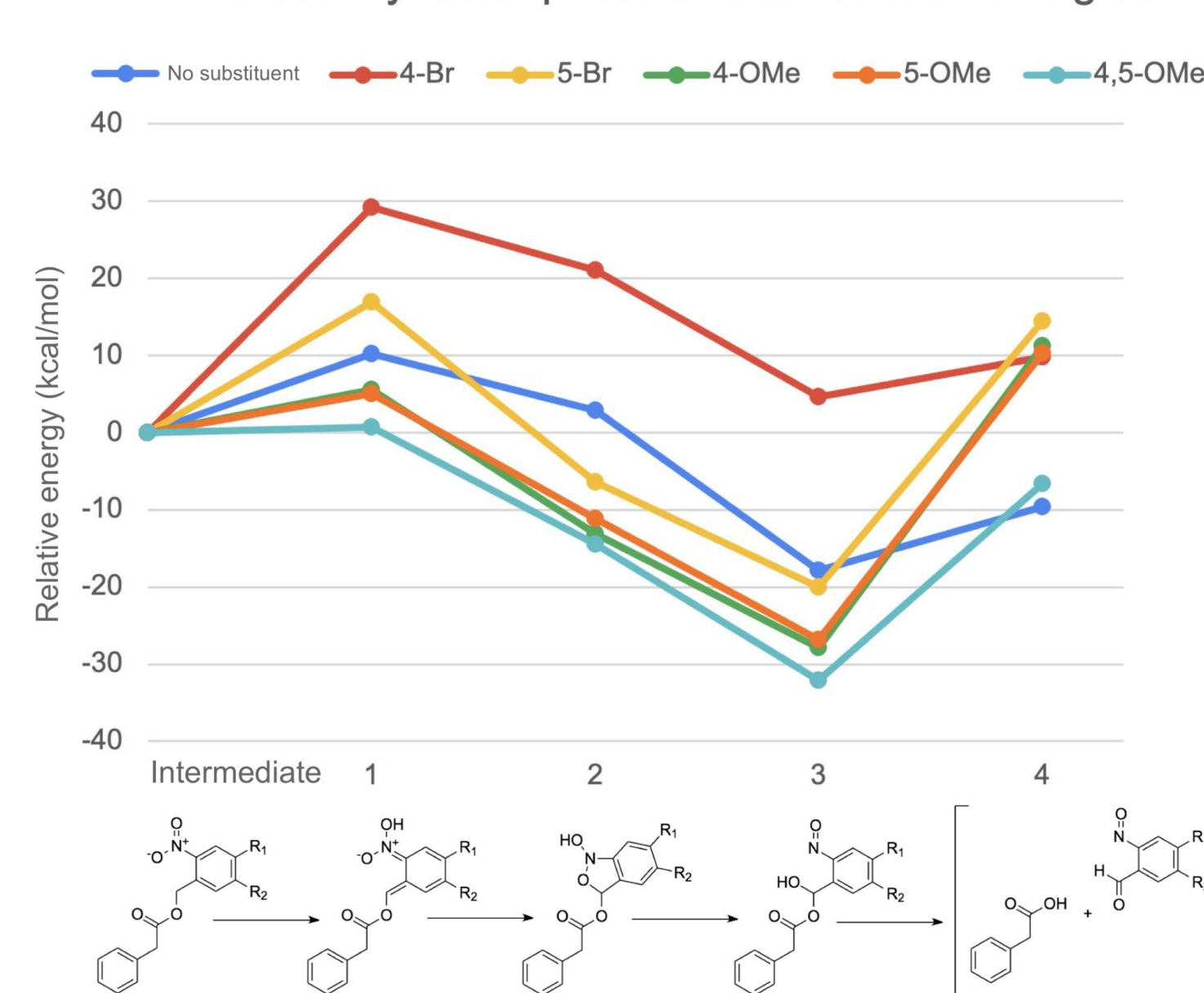
## Background

Over the past decade, antibody-drug conjugates (ADCs), a novel class of immunotherapeutics, have gained traction due to their highly specific delivery of cytotoxic payloads to tumor sites. Photorelease has shown immense potential due to its increased bio-orthogonality and ease of control. Through a new, simplified three-step synthetic route, our lab gained access to a completed photoreleasable ADC by combining our drug, photolabile group, and maleimide-conjugated antibody.

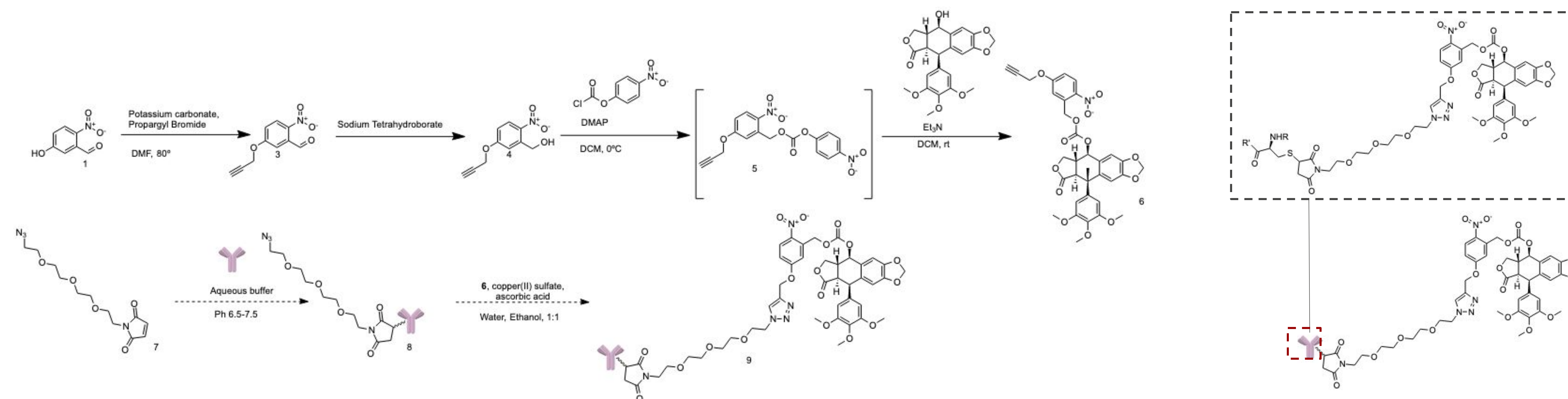


## Past Work on Aromatic Substitutions

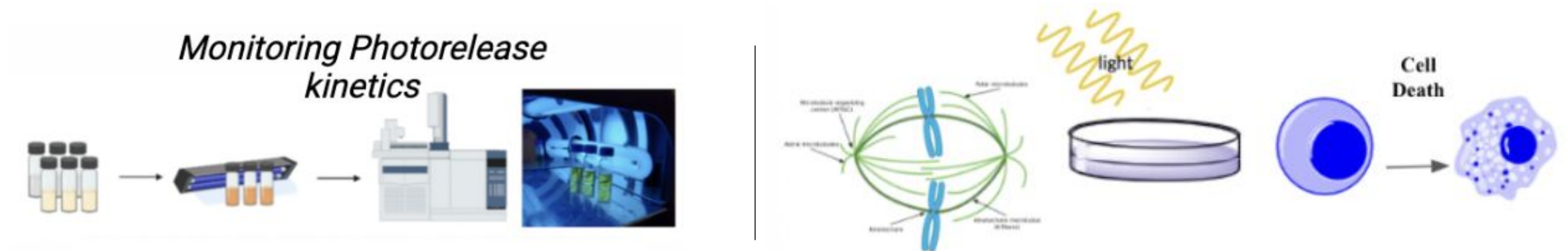
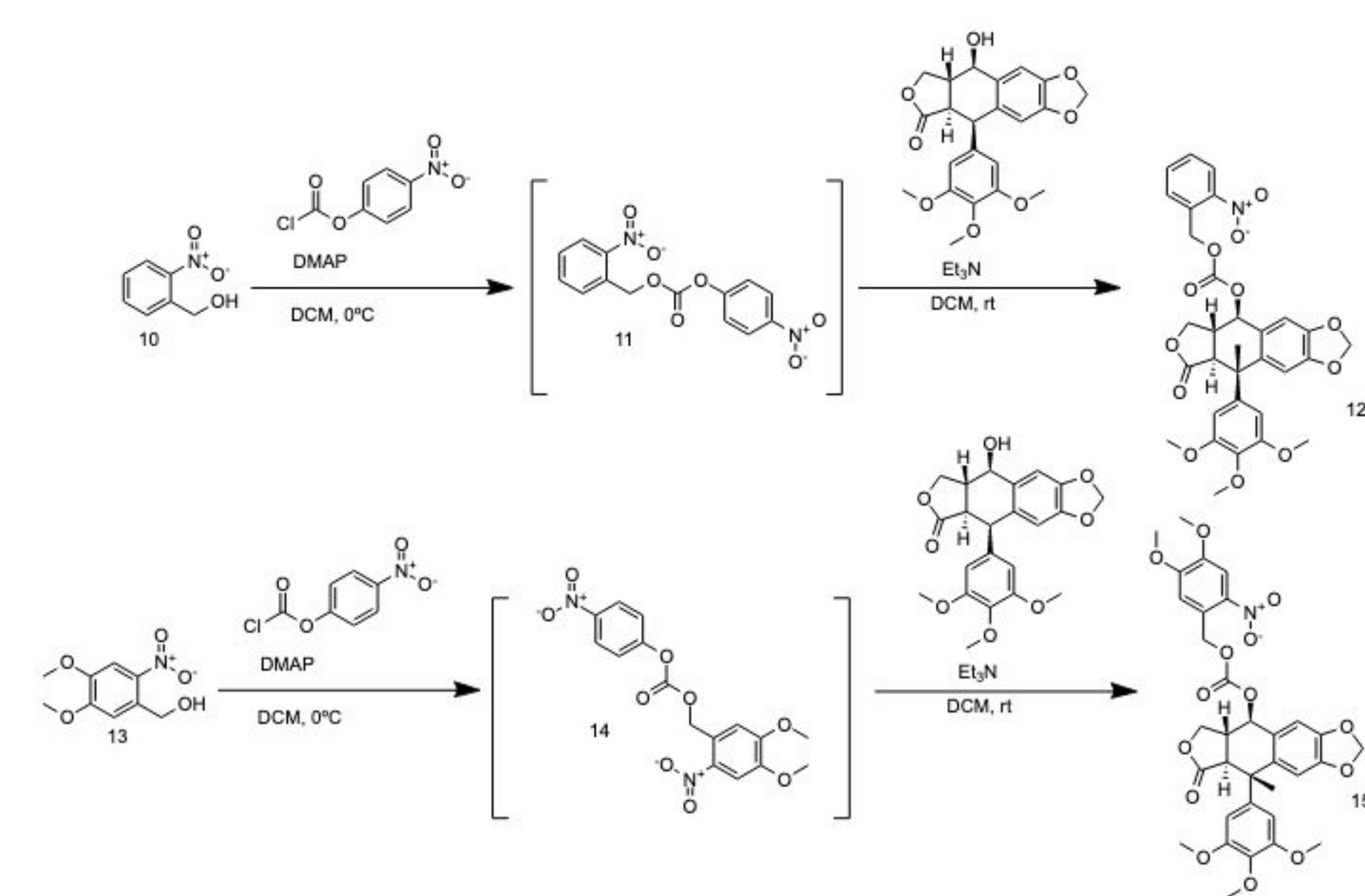
2-nitrobenzyl ester photorelease reaction energies



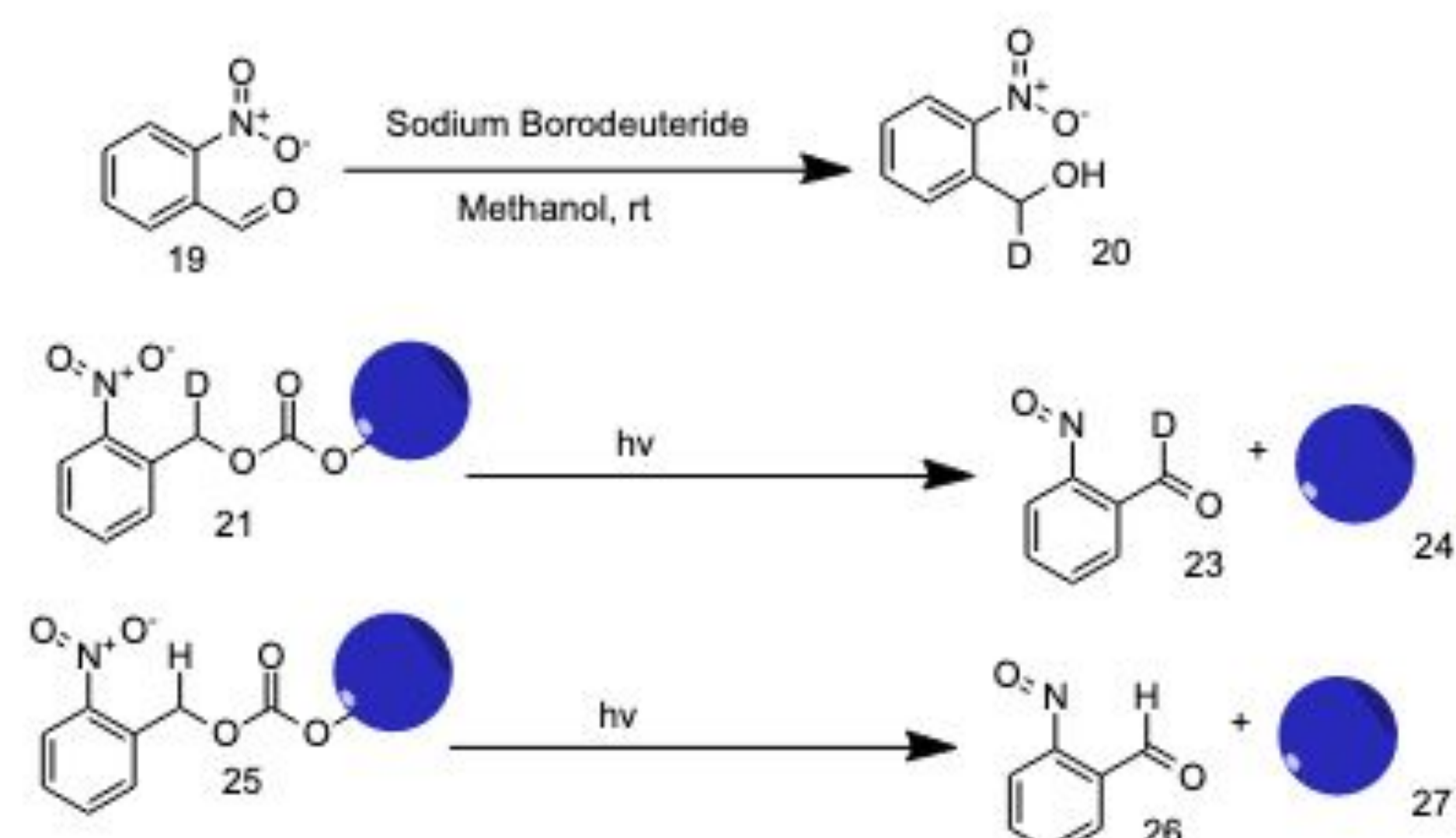
## Linker Synthetic Route



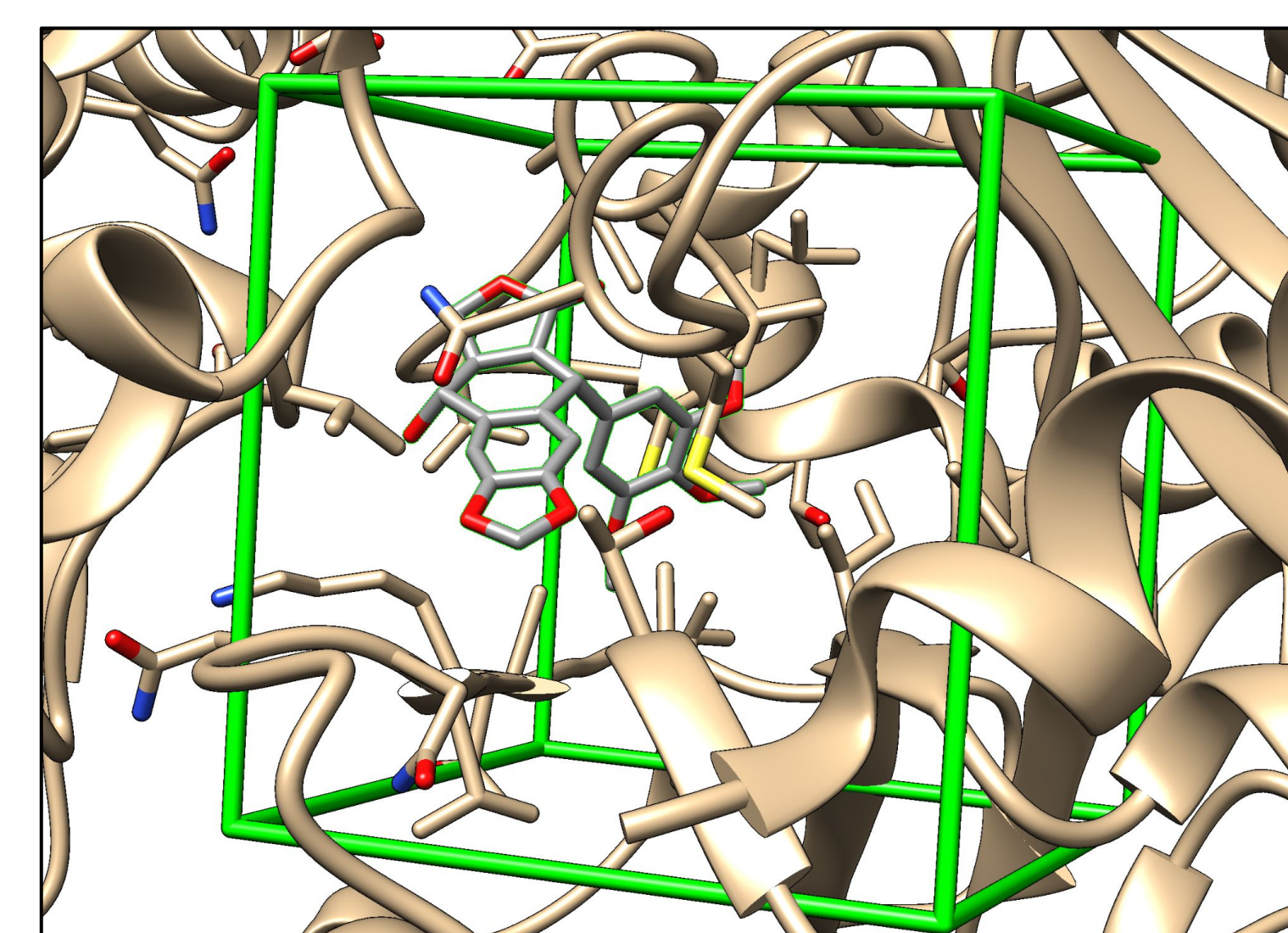
## Podophyllotoxin Prodrug



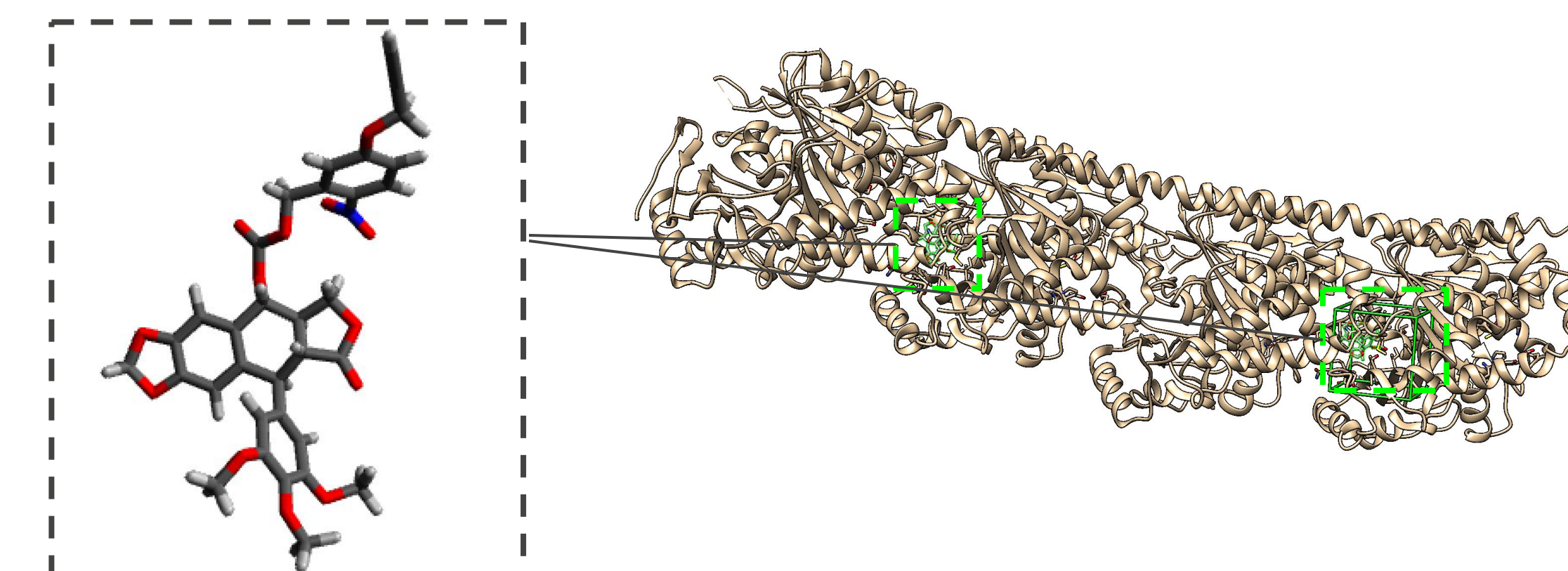
## KIE Photorelease Study



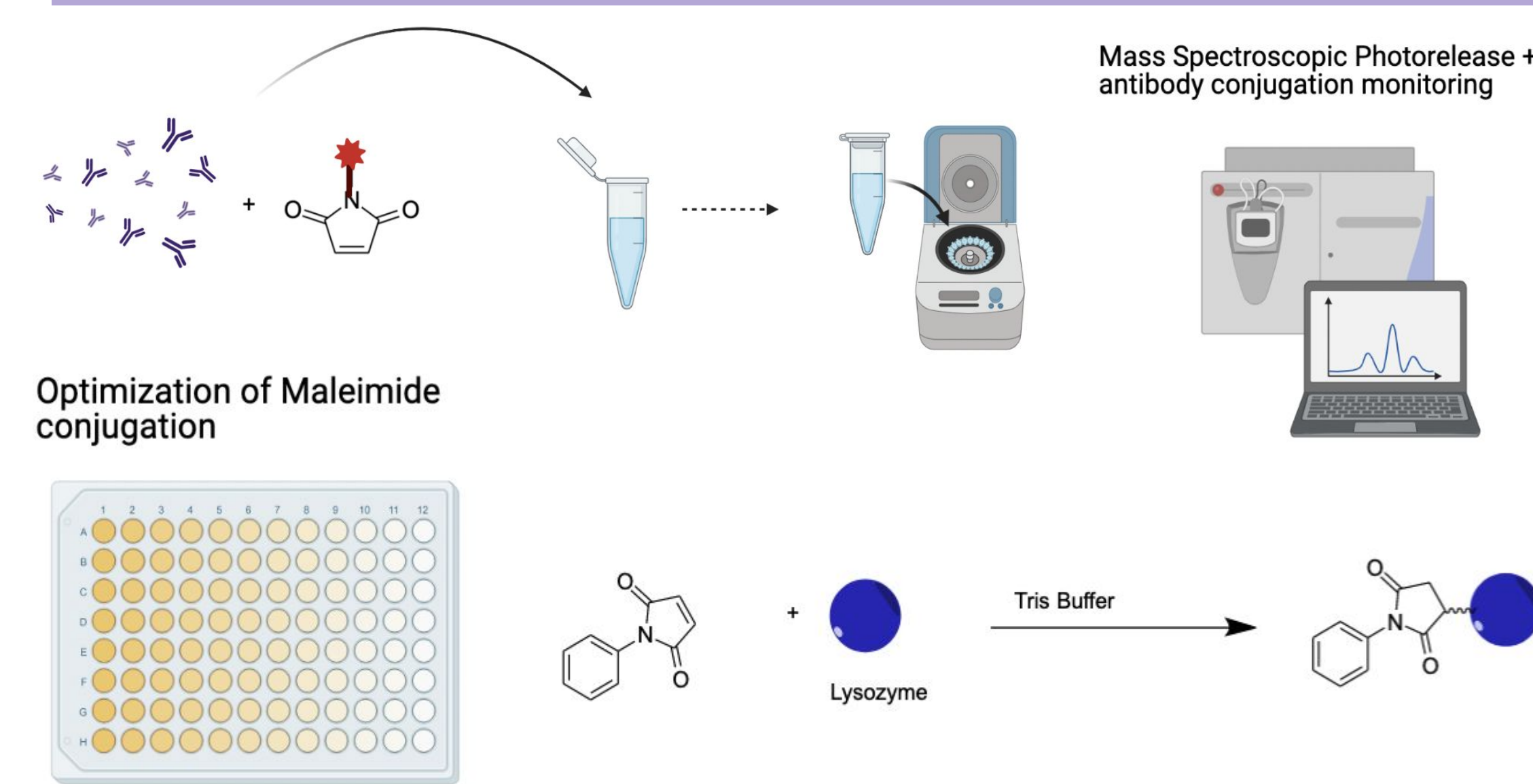
## In Silico Evaluation



Podophyllotoxin binding to 1SA1 (tubulin-podophyllotoxin)

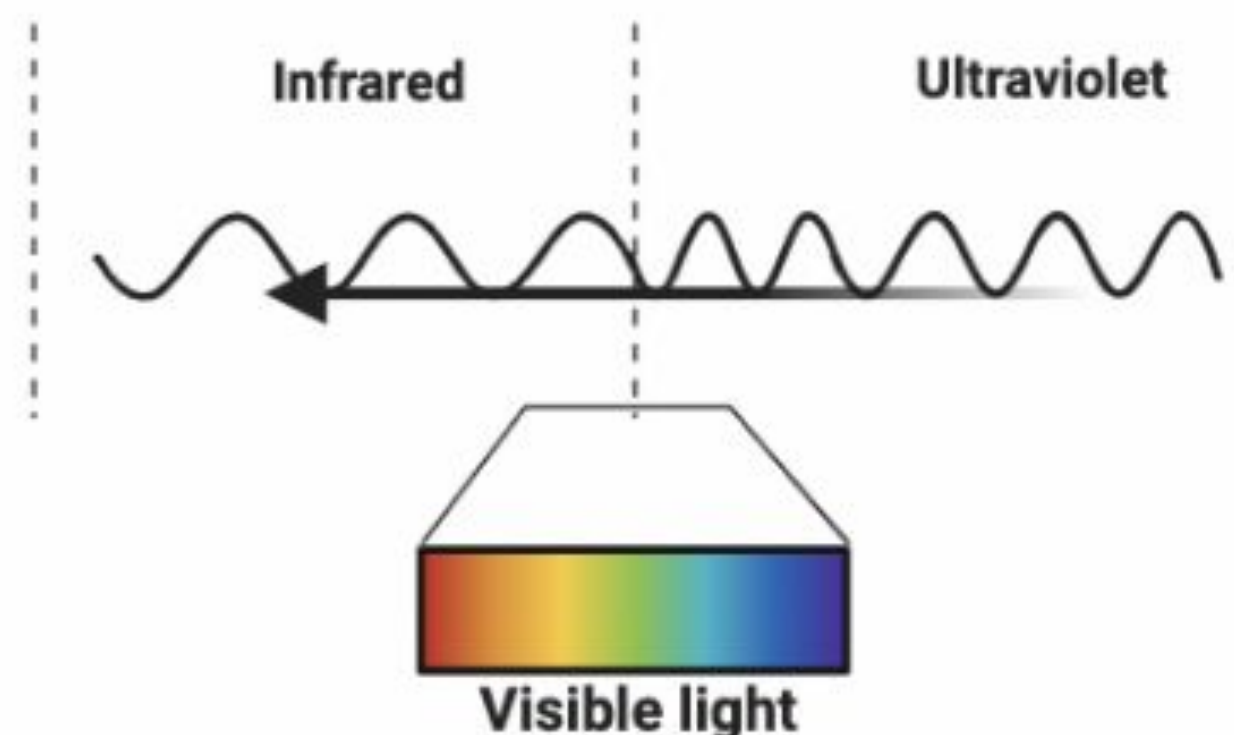


## Maleimide Conjugation

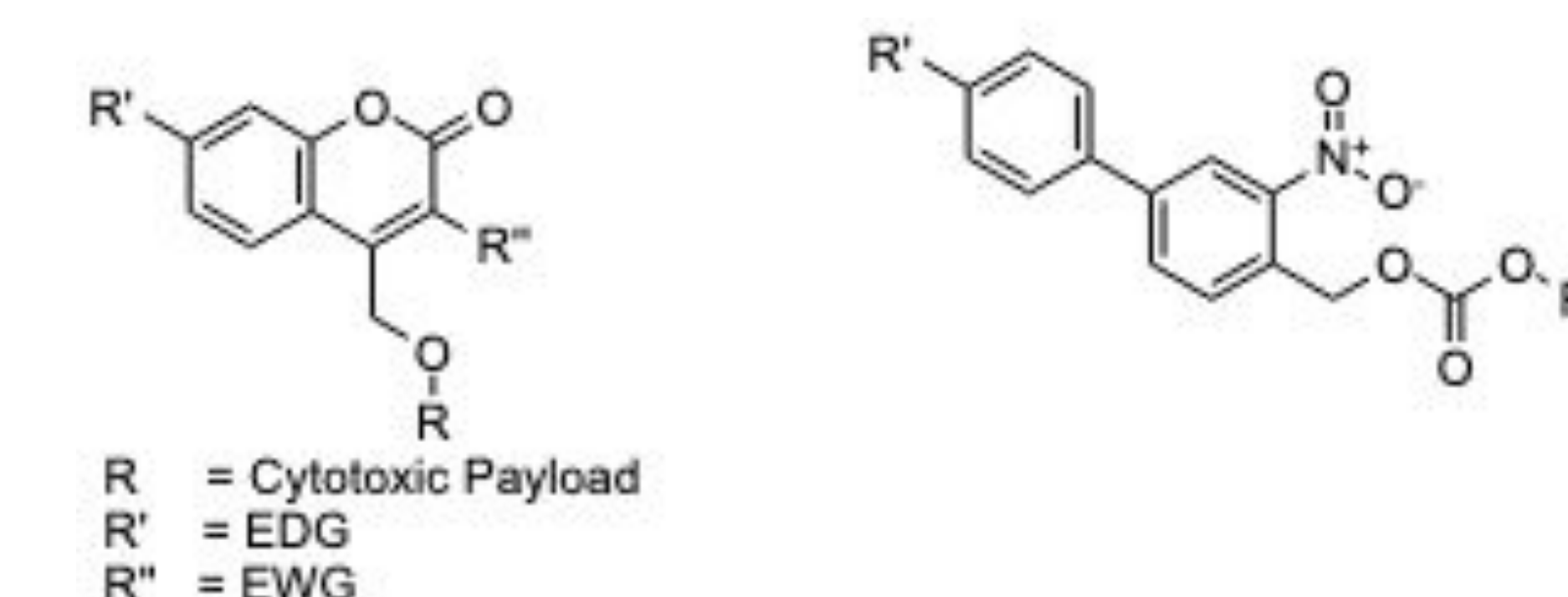


## Conclusion and Future Directions

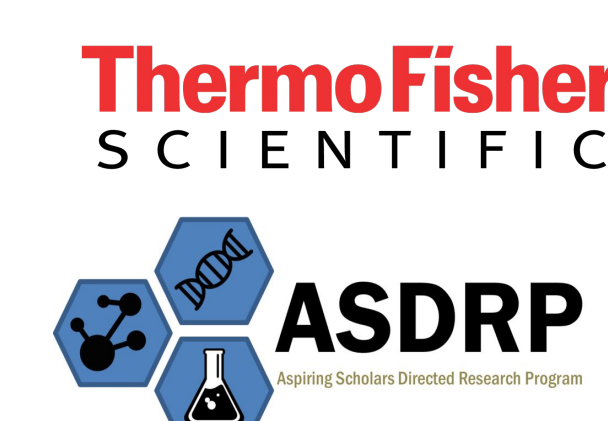
### Varying wave lengths



### Red Shift Photorelease



## Acknowledgements



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