

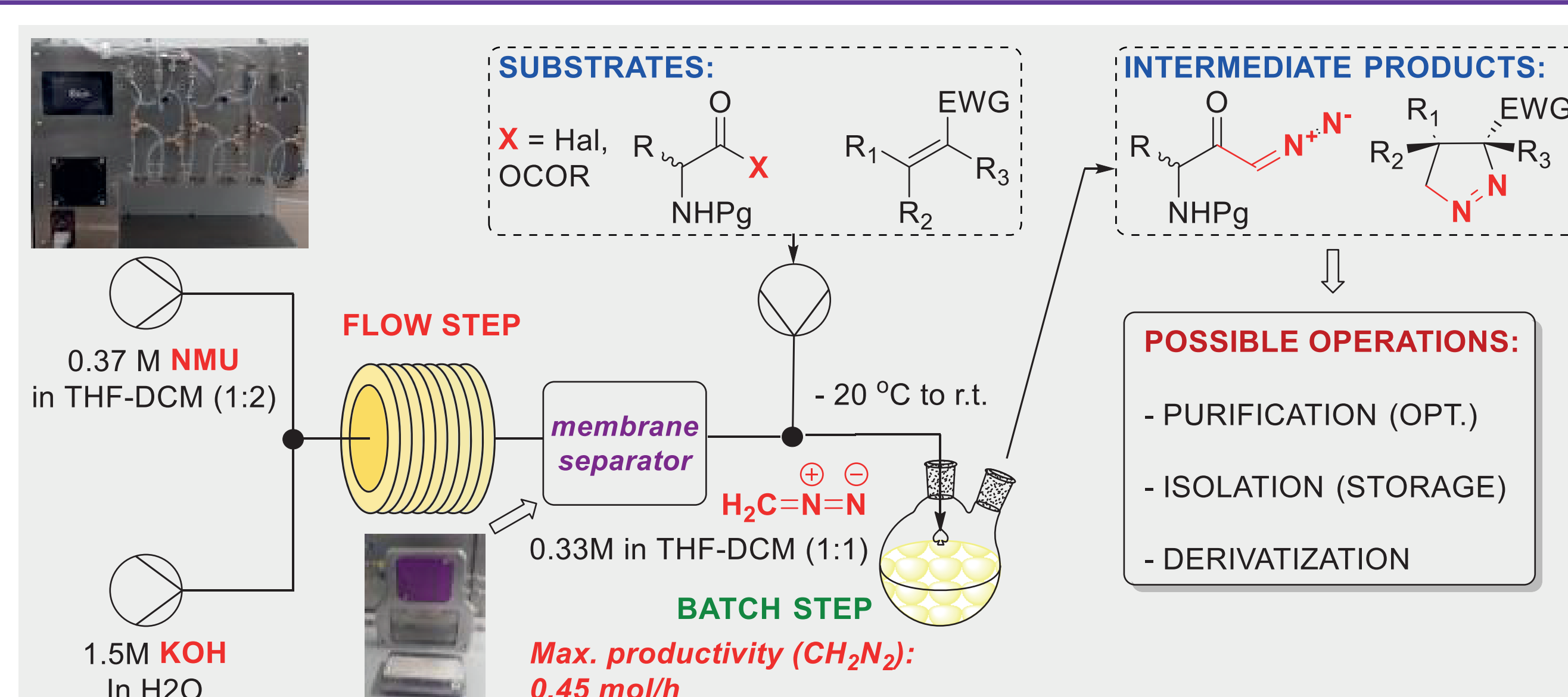
Safe, flow generation of “Dry diazomethane” in multigram scale for preparation MedChem relevant building blocks

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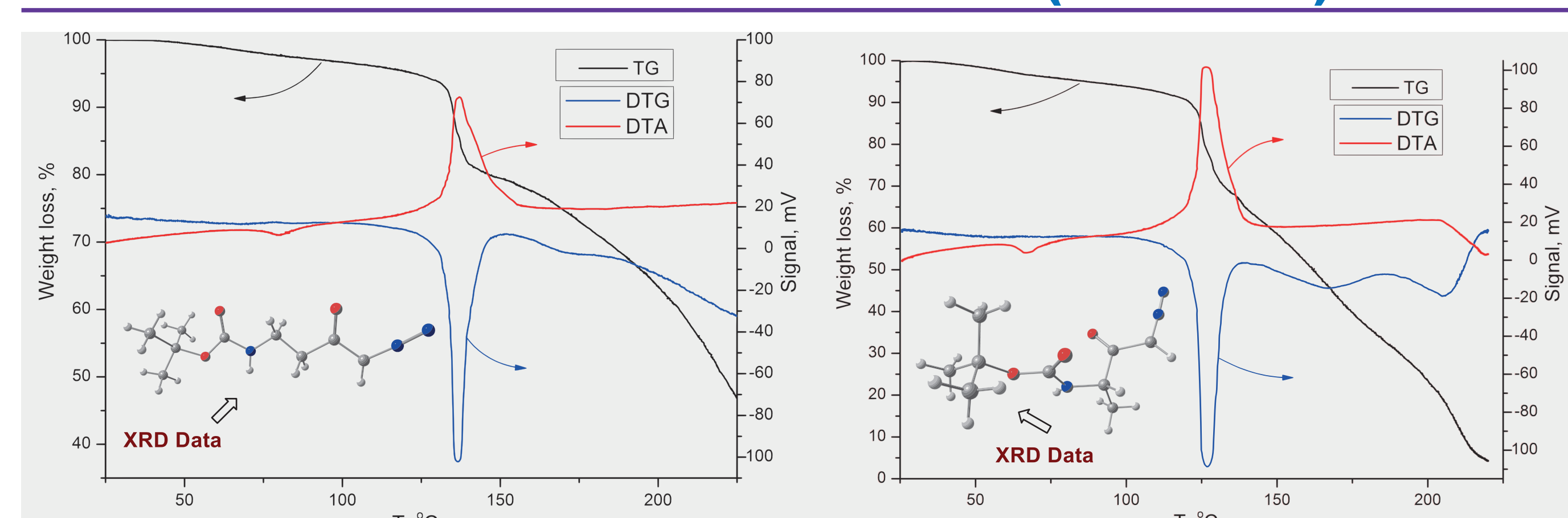
Background of the project

Dry Diazomethane in Flow: Safety, Large Scale, Wide Diversity of Products

- A flow system for generating diazomethane enables the synthesis of products and intermediates with productivity up to 0.45 mol/h, scalable to hundreds of grams per operation.
- Diazoketones, synthesized using this system, are valuable, bench-stable reagents¹ on their own, and can be used for synthesis of 2,4-thiazoles² and pyrazoles, as well as other cyclization reactions.
- The use of flow photoreactor enables the synthesis of β -amino acids³, azetidinones, piperidinones, and cyclopropanes, with the preservation of chirality of the starting materials.



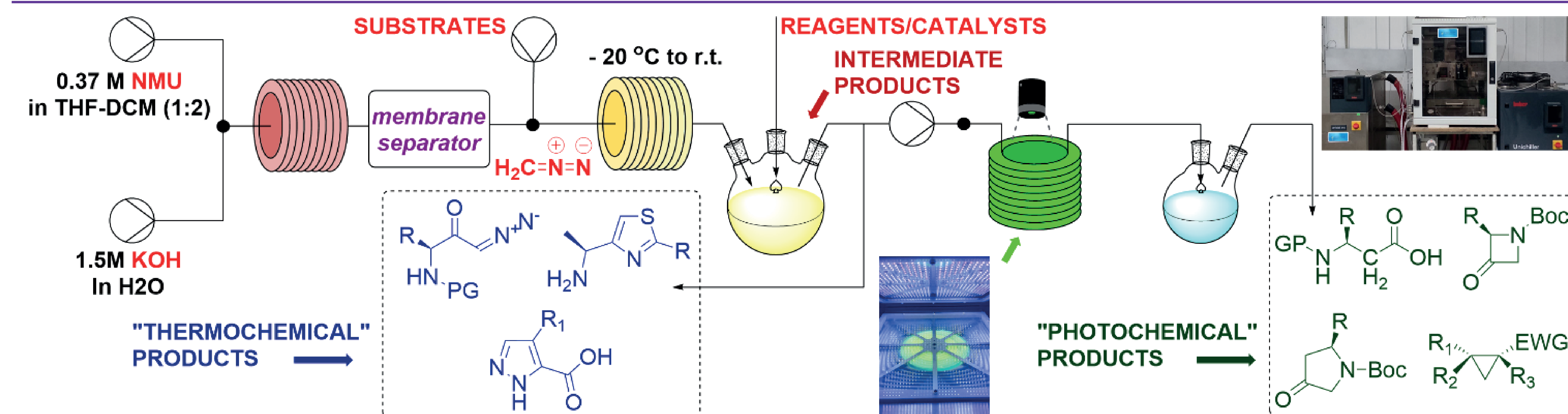
Amino Acid-Derived Diazoketones (AADDKs) Thermal Stability Summary: Safe, Bench Stable



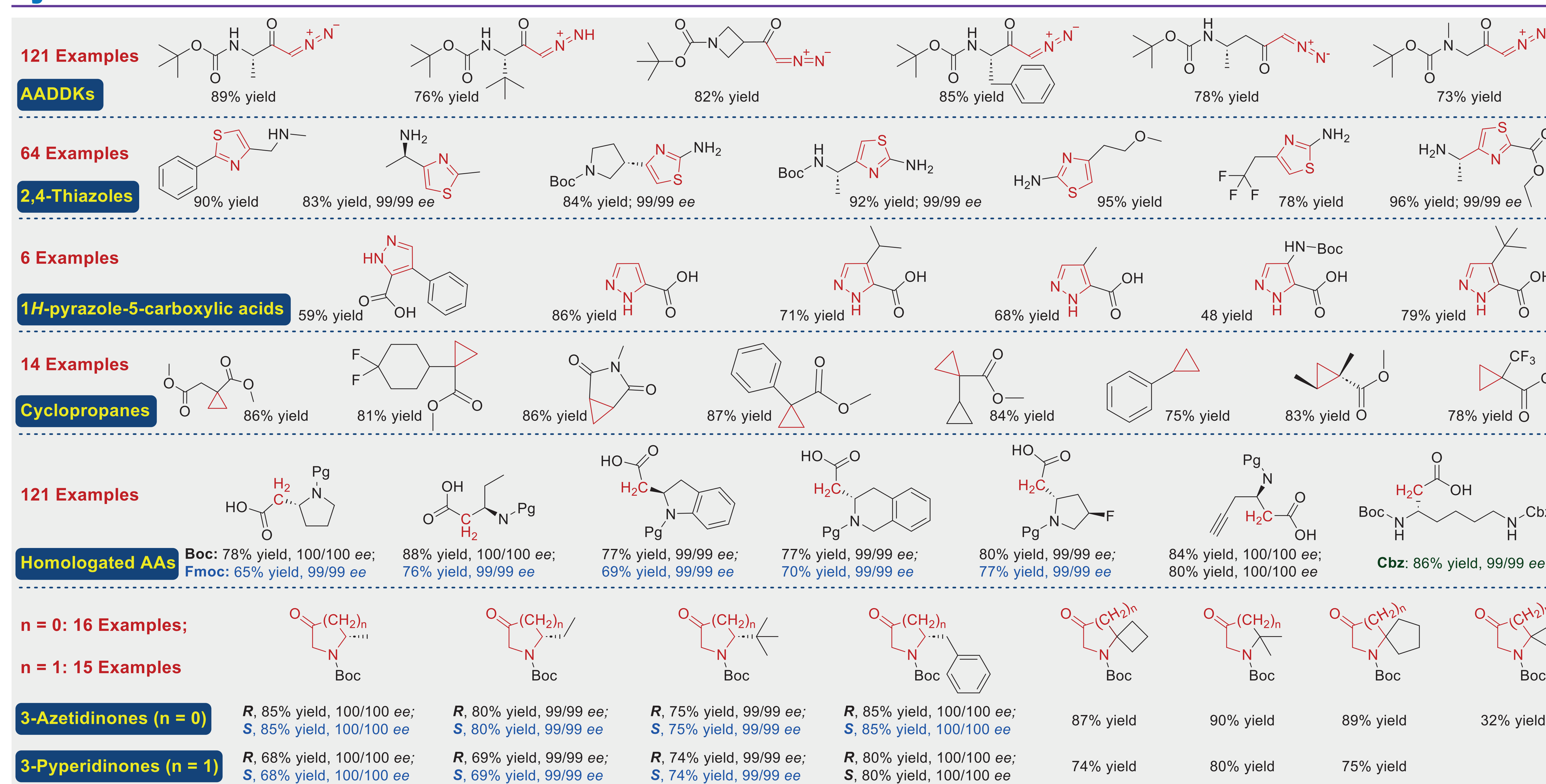
- AADDKs can act as bench-stable synthetic equivalents for halogenoketones.
- TGA of AADDKs show their decomposition between 110-142 °C, exothermically, indicating medium thermal risk and reaction hazard indices.

T(1 st process), °C	137	142
T(2 nd process), °C	160	167
E _A (1 st process), kJ/mol	220	115
T, °C range for EA	140-153	142-160

Flow-Generated Diazomethane in Reaction Cascade: Setup and Scope of the Products



Synthetic results



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References

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