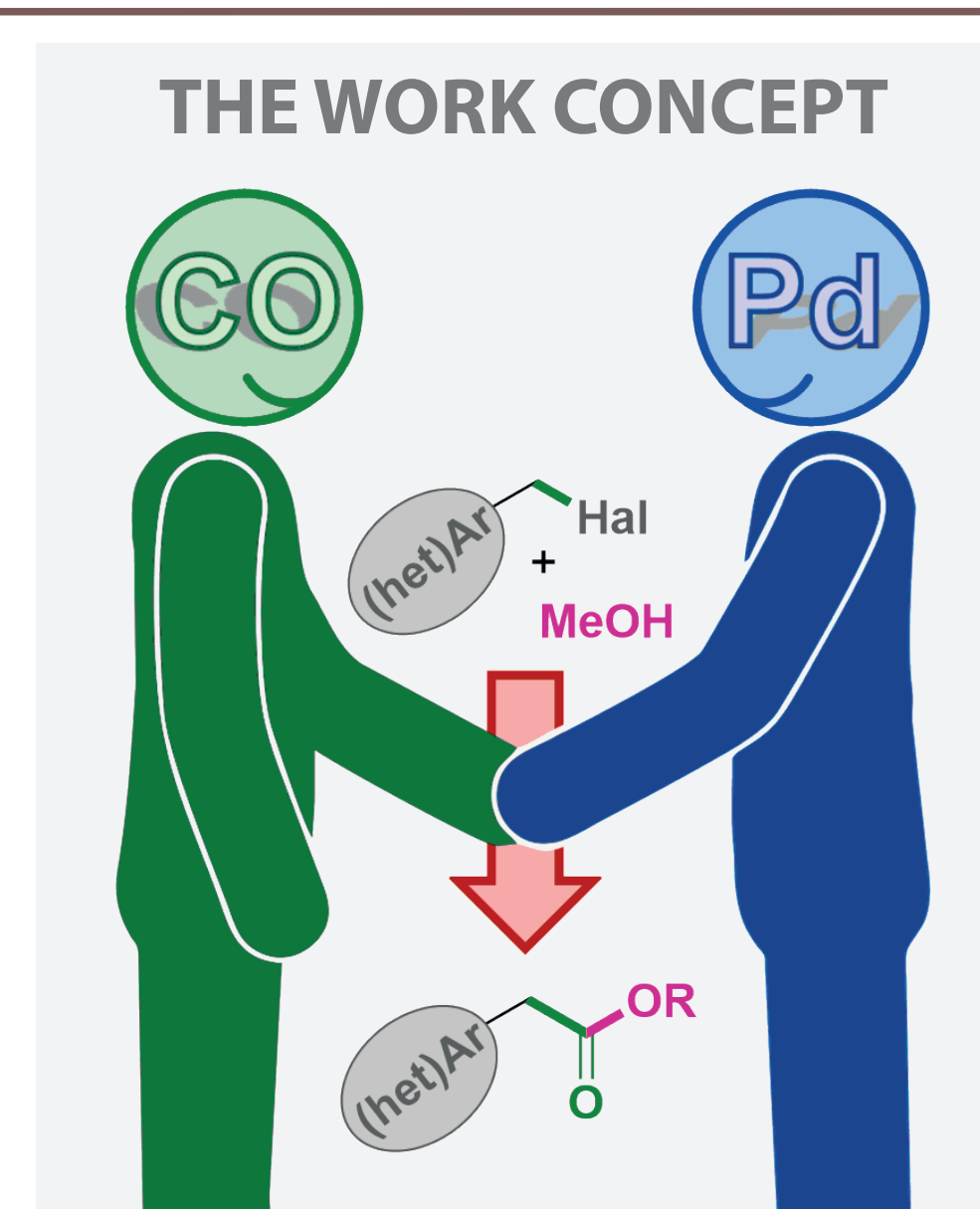
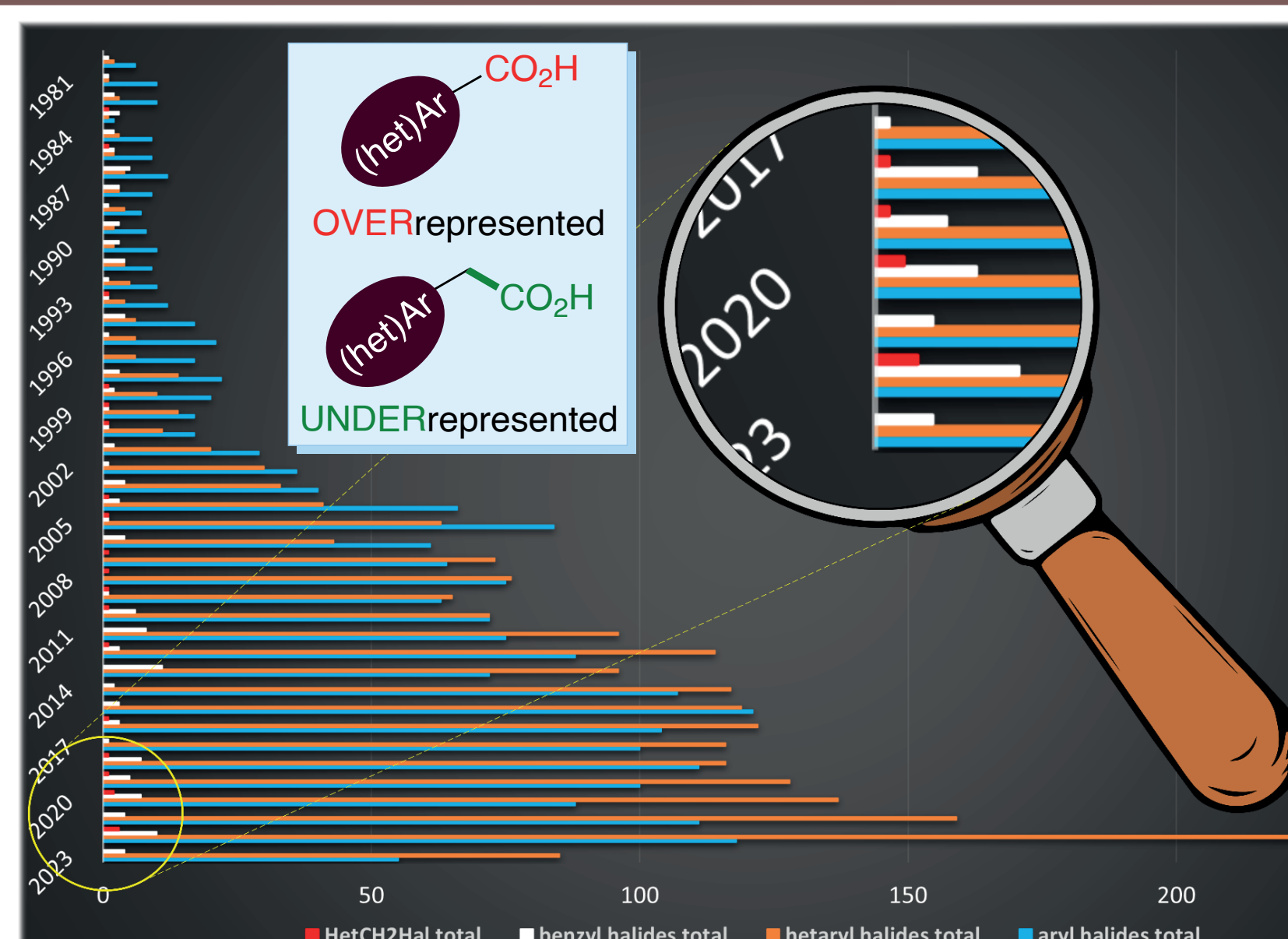
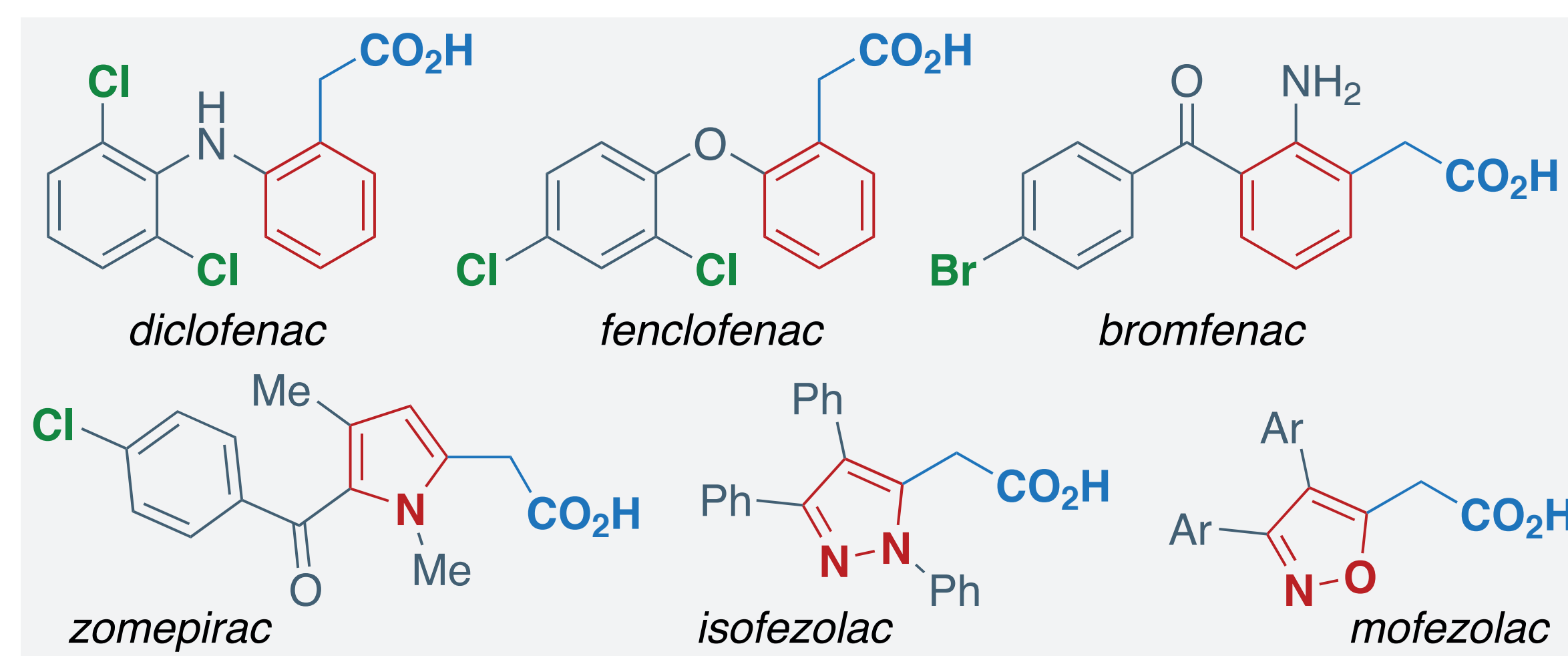


Efficient access to (het)arylacetic acids: one step for synthetic chemistry, a leap for drug design research

M. Nechayev, V. Dudko, O. Yurchenko, D. Lega, S. Ryabukhin, D. Volochnyuk

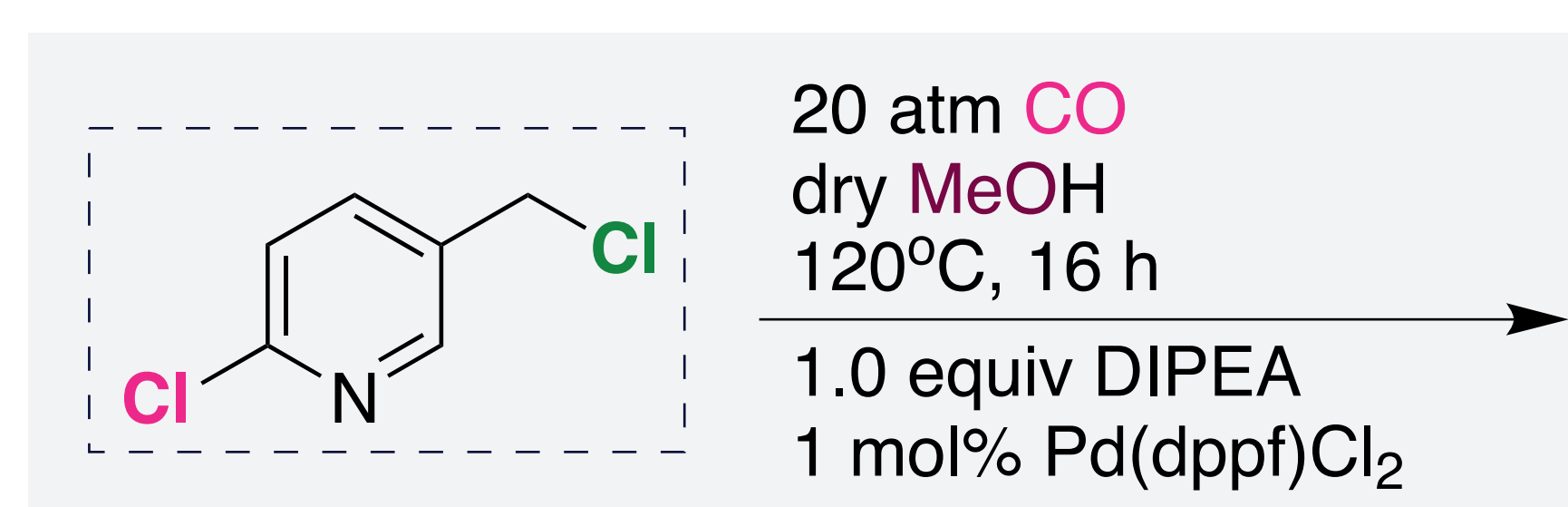
Background of the project

- comprehensive analysis of the commercial BBs showed the lack of (het)arylacetic acids in comparison with (het)aryl ones



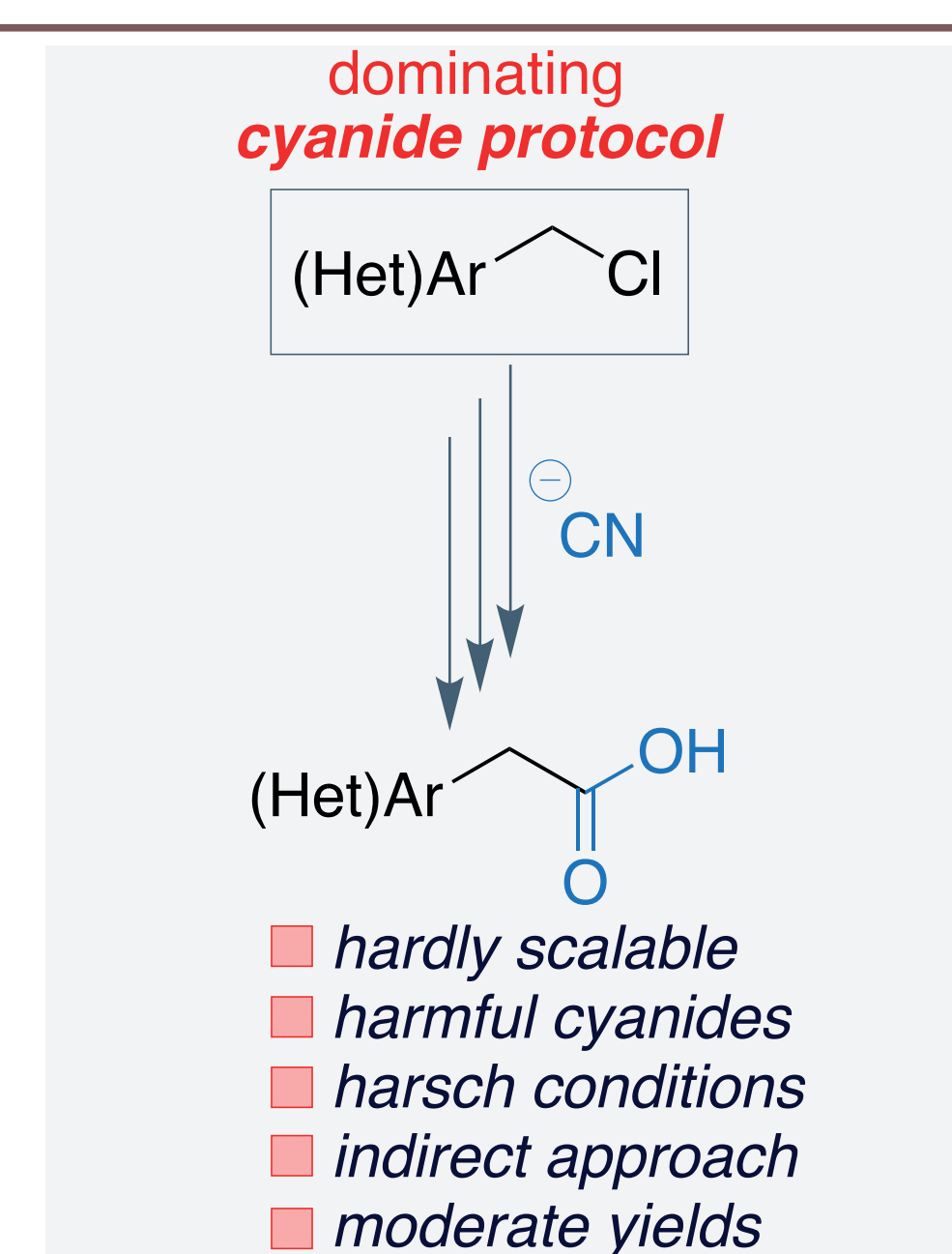
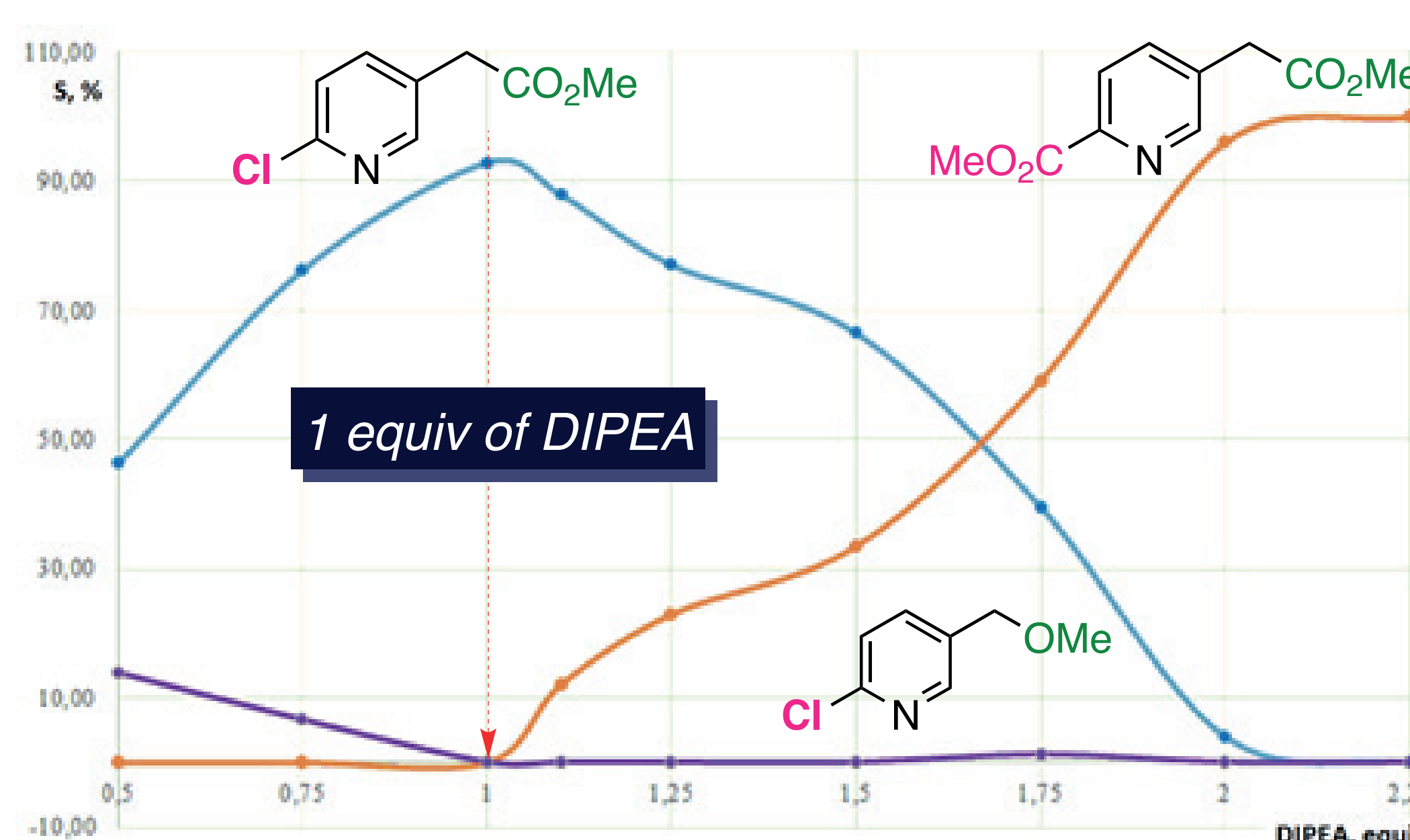
Optimization of the CO protocol

- Csp³-Cl vs Csp²-(Cl,Br) selectivity
- carbonylation vs SN process



The reaction outcome is driven by DIPEA amount taken:

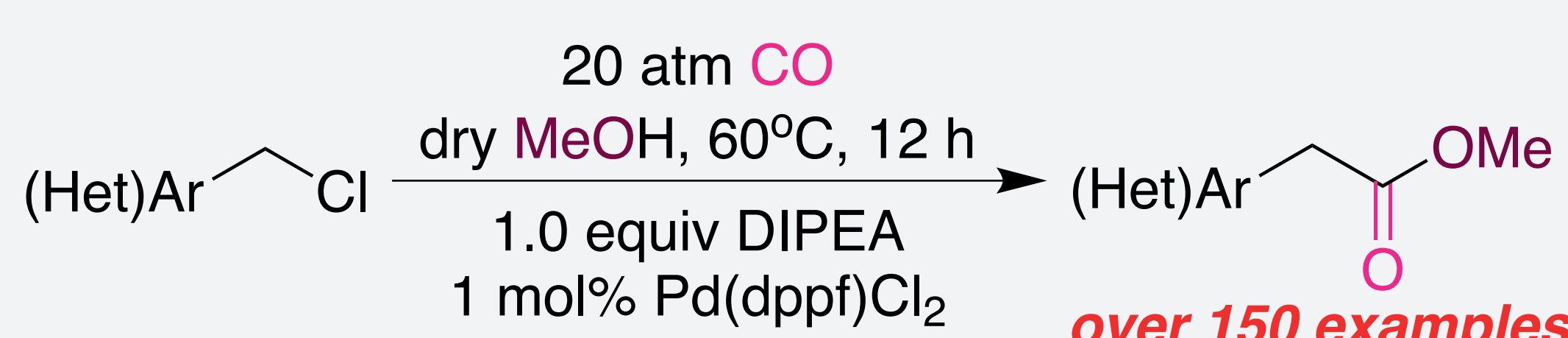
- 1.0 equiv of DIPEA enables for specific sp³-Cl carbonylation



Outline of the synthetic results

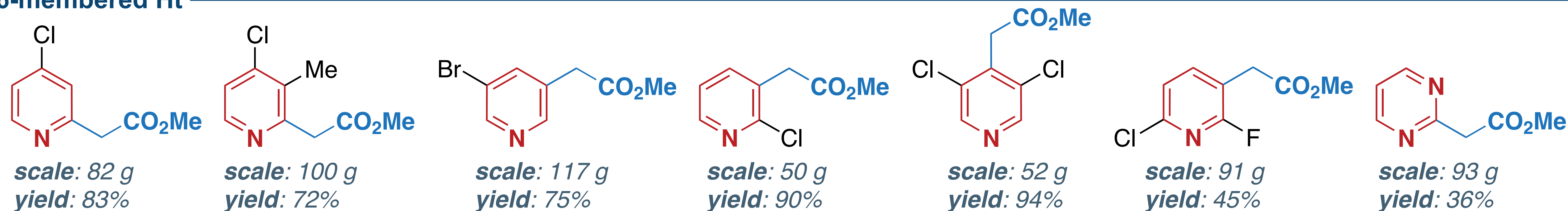
TOTAL SCREENING:

- impressive range of benzylic substrates
- heteroaromatic analogs
- C(sp³) vs C(sp²) selectivity
- Cl vs Br vs I selectivity

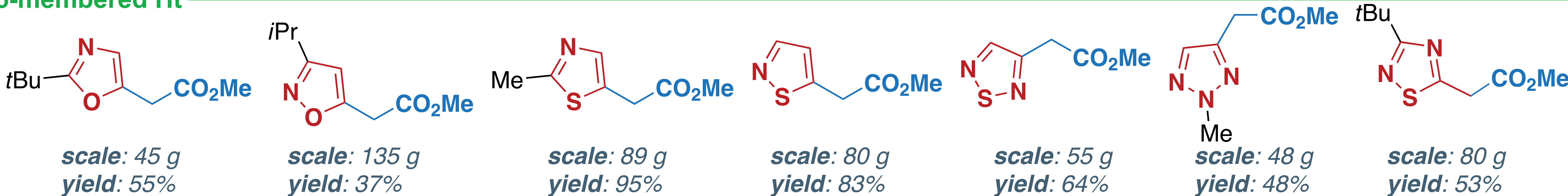


- Reproducibility, mild conditions
- High yields, easily scaleable (up to 100+ g)
- Technogenic gas, easy work-up / purification
- Excellent Csp³-Cl over Csp²-(Cl,Br) selectivity
- Wide scope, one-step access

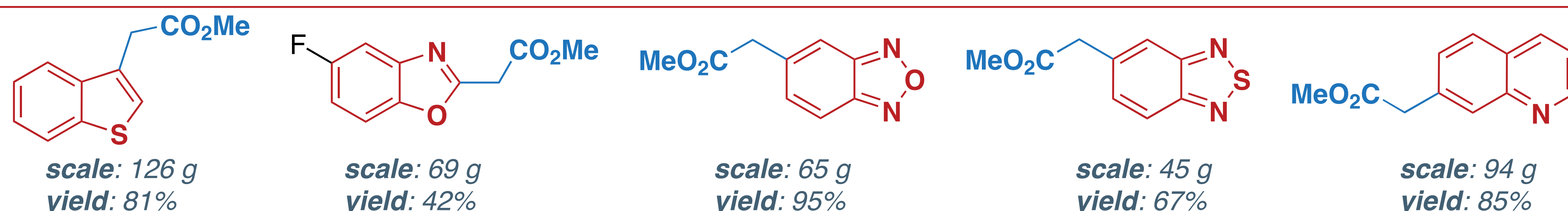
6-membered Ht



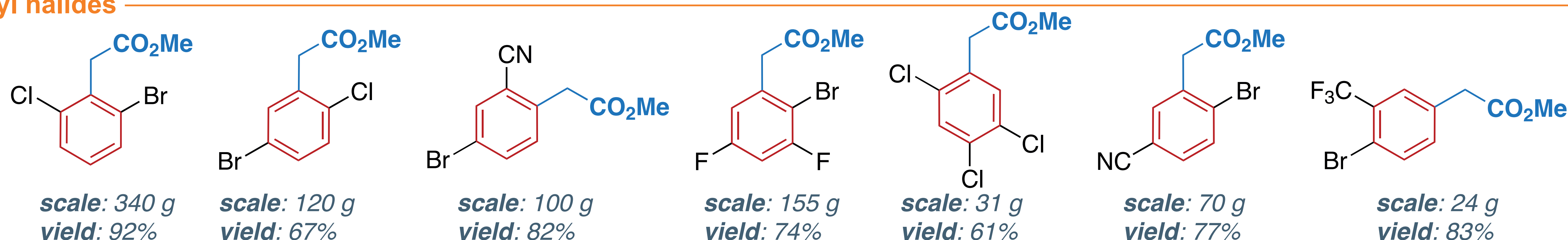
5-membered Ht



Condensed Ht



Benzyl halides



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