

Deconvolution of HTL biocrude through FT-ICR MS

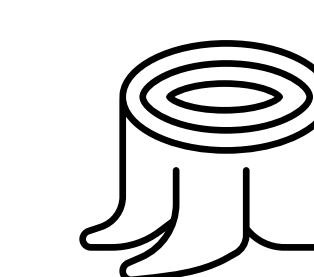
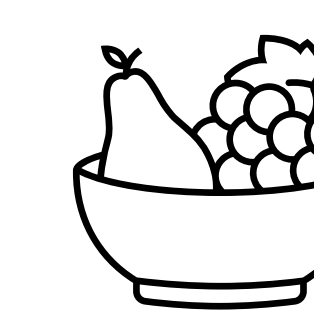
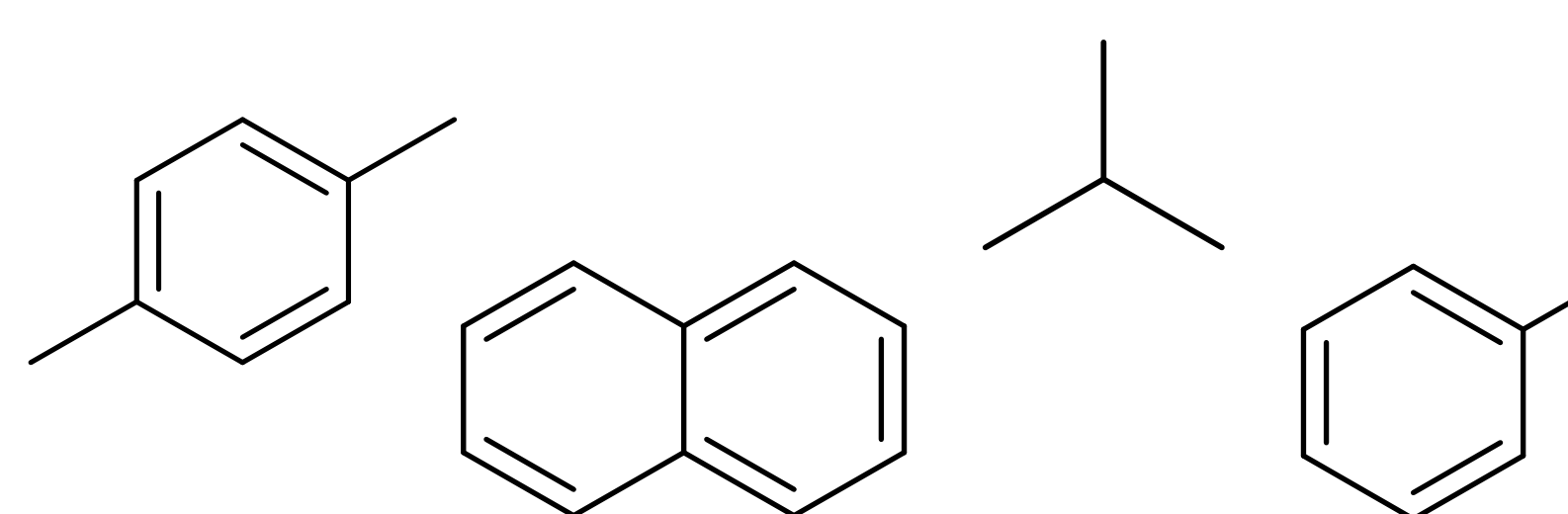
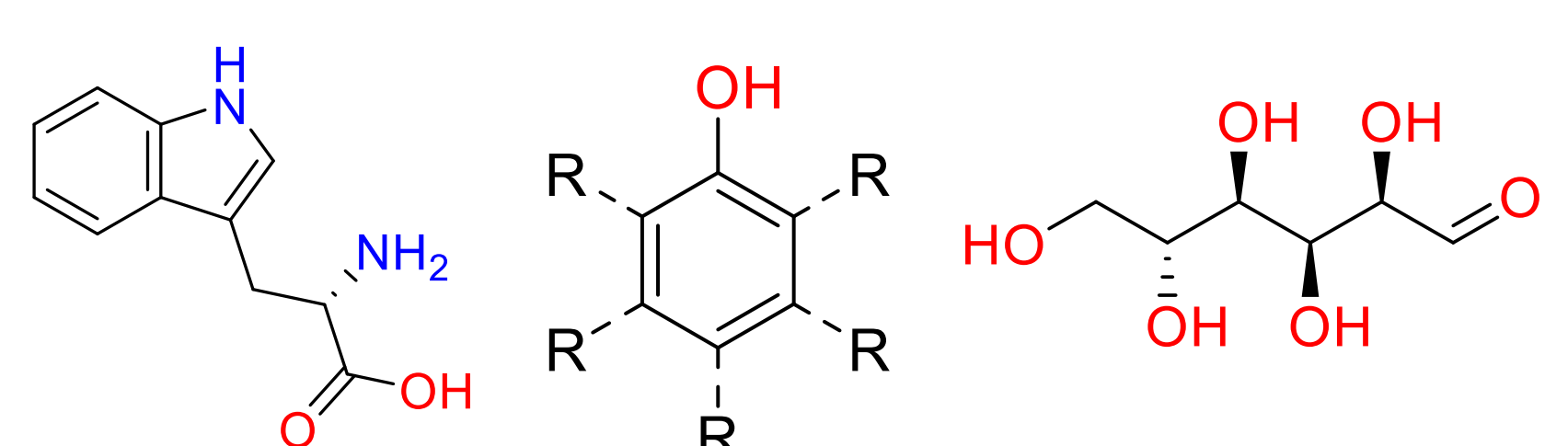
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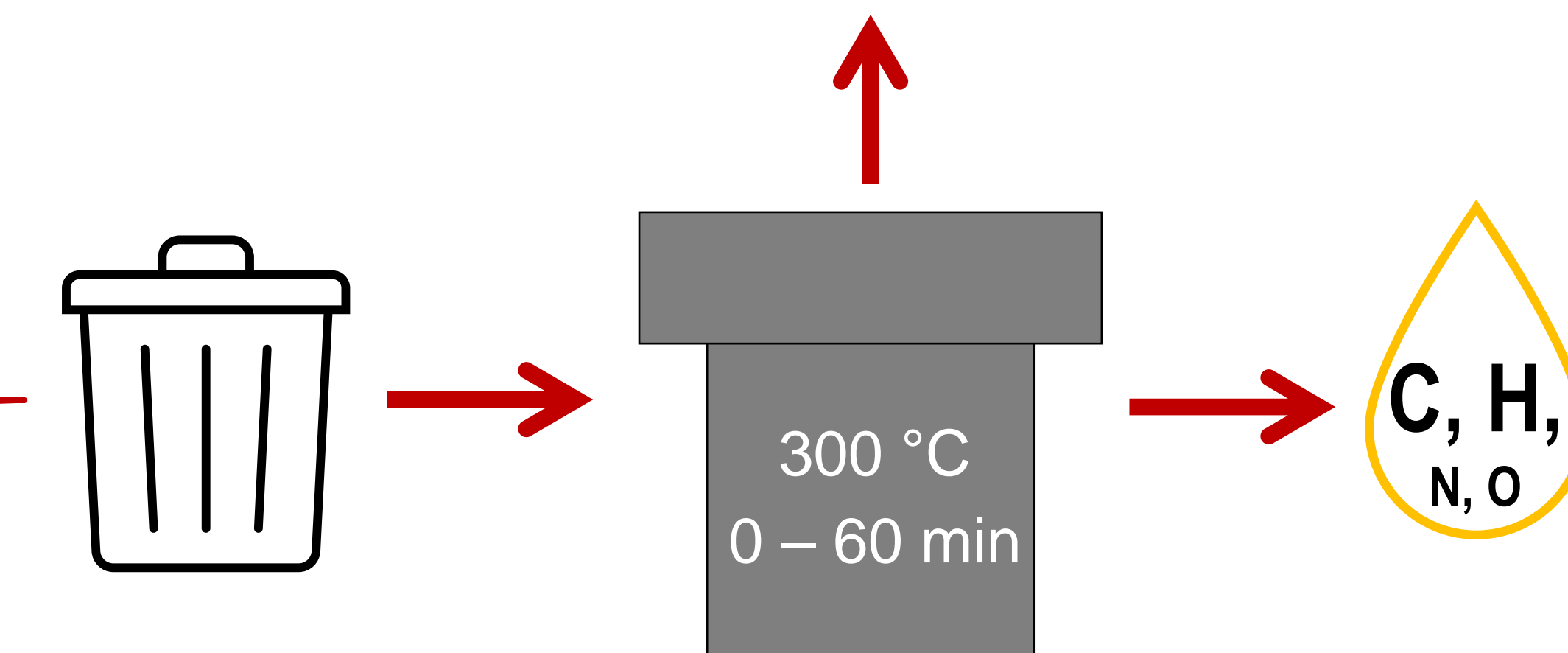
Motivation



~300 million tons of waste are discarded annually in the US

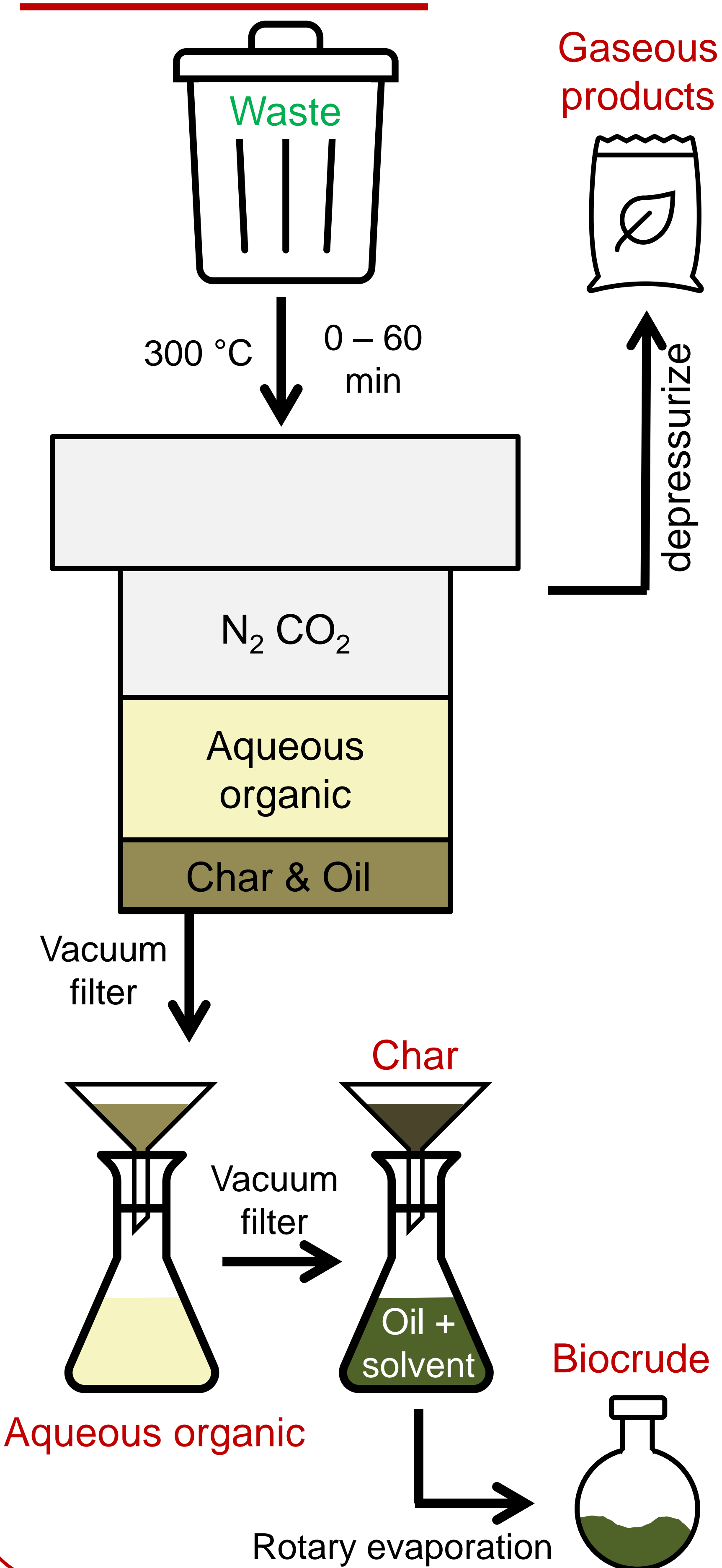


2. Fate of heteroatoms

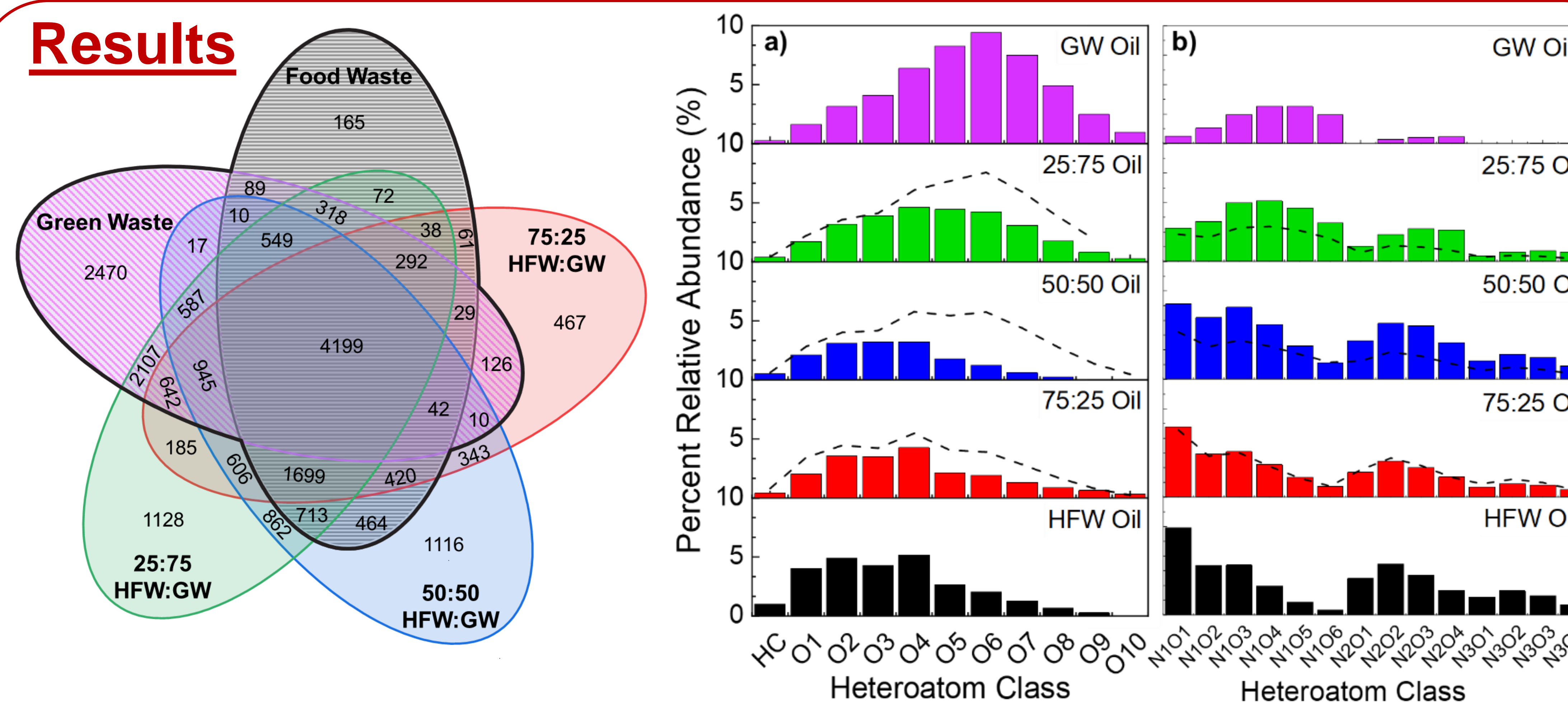


1. Macromolecular structure-activity relationship

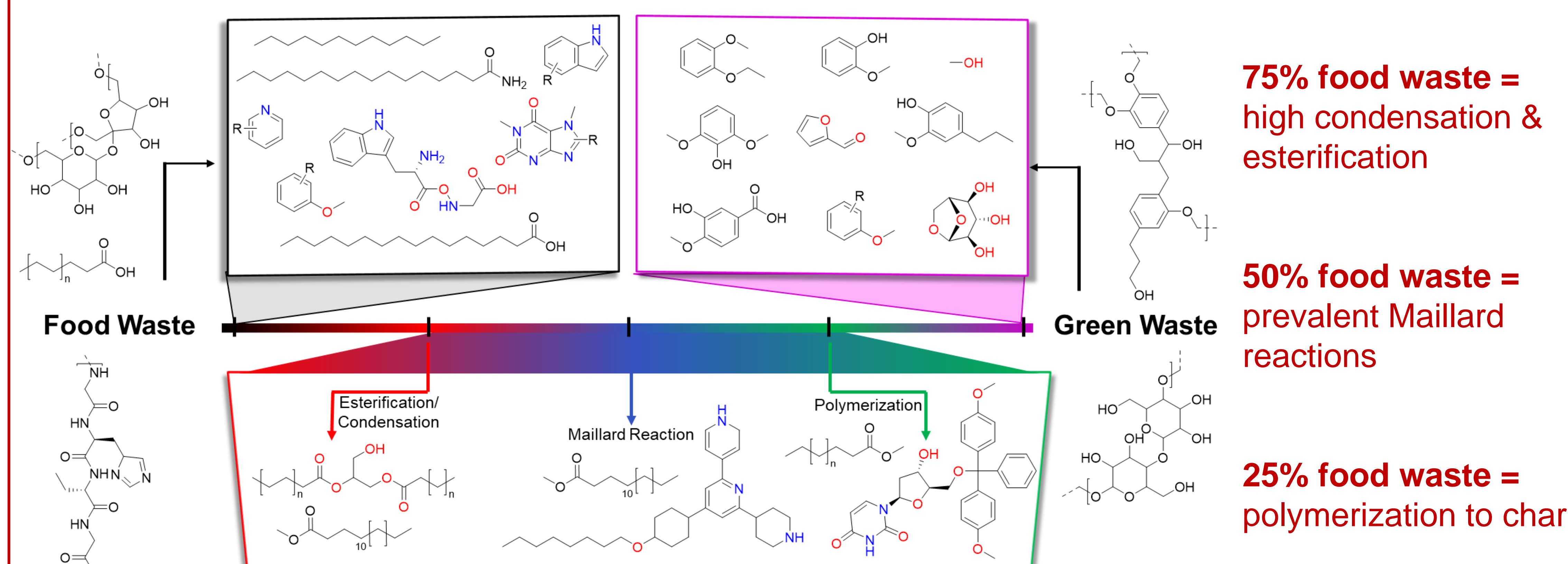
HTL Process



Results

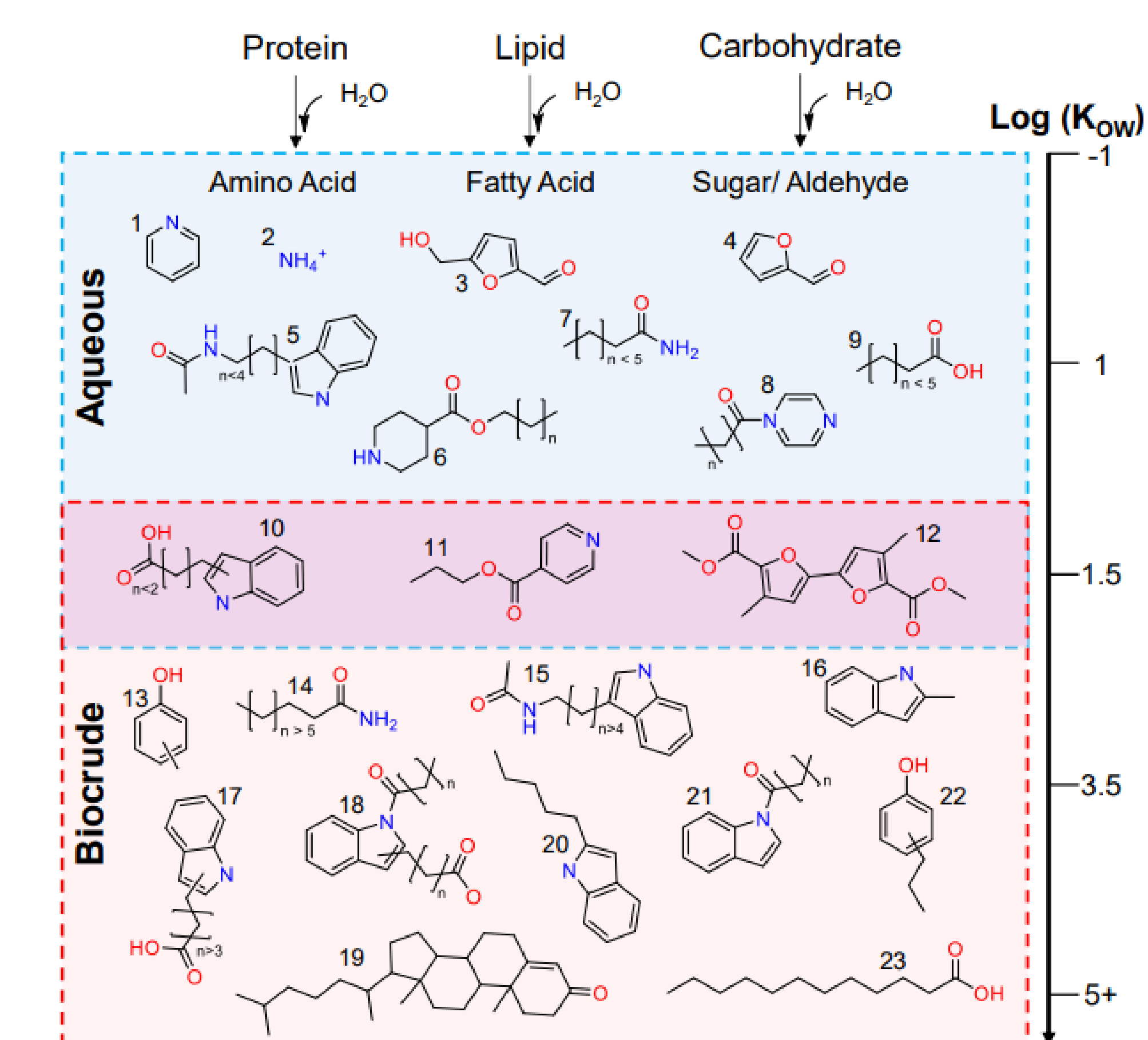


Mixed waste feeds result in emergent chemical compounds



*solid black molecules confirmed by GC-MS
*colored molecules are speculative based on FT-ICR MS heteroatom class and literature

Conclusions



- FT-ICR MS was instrumental in determining the fate of heteroatoms in HTL biocrude
- This work revealed key chemical pathways for biocrude formation from varying feedstock composition

Acknowledgements



Learn more about my work here!

