A continuous flow platform for the safe use of ozone in Medicinal Chemistry

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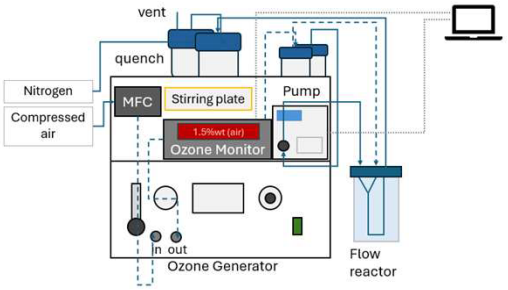
KEY FEATURES

- **Ozone reactions GO ACCESIBLE for Medicinal Chemistry**
- **Developed an inherently SAFE flow platform: NO NEED OF NEAT OXYGEN, uses laboratory hood compressed air**
- **Precise control of OZONE STOICHIOMETRY**
- **FULLY VALIDATED with a broad scope of substrates**
- **ON-DEMAND PRODUCTION of Medicinal Chemistry relevant compounds**

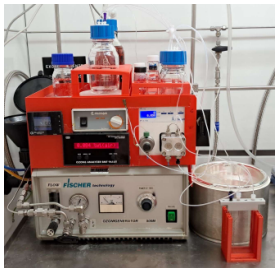
IN-HOUSE FLOW OZONOLYSIS PLATFORM



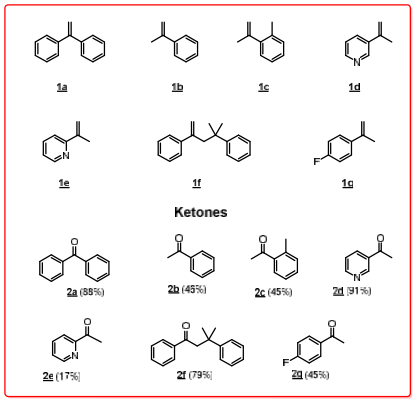
- Easy-to-use platform with in-house software control
- Real-time ozone concentration monitoring
- Low-volume reactor chip for better heat and mass transfer

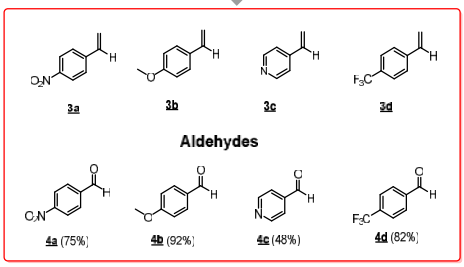
TYPICAL REACTION CONDITIONS:

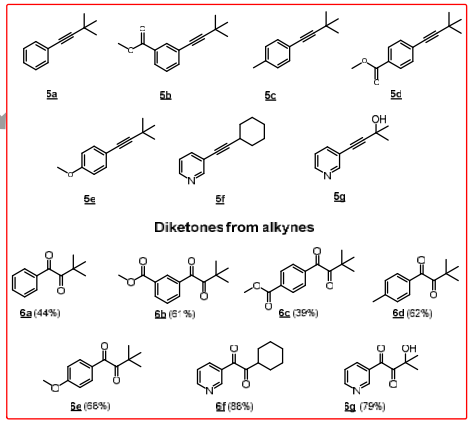
- SM concentration = 0.05 - 0.1 M
- Air flowrate = 80 mln/min
- Liquid flowrate = 0.1 - 0.8 ml/min
- O_3 concentration = 1.0 - 2.0 %wt./wt.
- Residence time = 4 - 34 s
- Ambient temperature
- Easy reductive work-up with solid-supported PPh_3



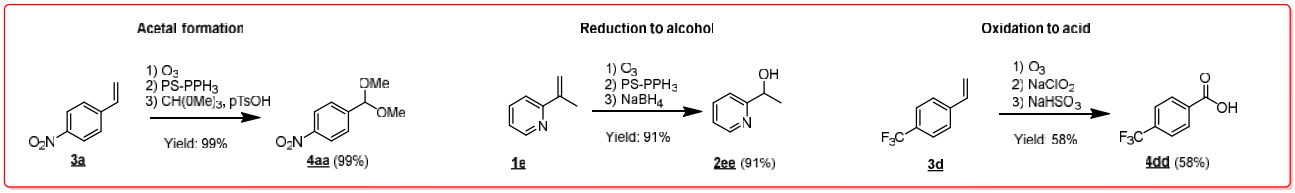
PLATFORM VALIDATION AND SCOPE OF SUBSTRATES



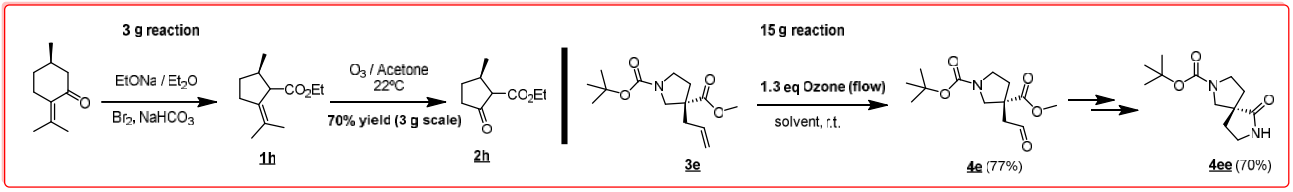




Sequential transformations



Multigram examples



CONCLUSIONS

- Fast, convenient setup to perform ozonolysis reactions from mg to >10 gr
- Automated and unattended control of ozone/substrate equivalents
- Validated with scope of substrates, from alkenes to alkynes
- On-demand production of aldehydes for telescope processes

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