



SONEAS

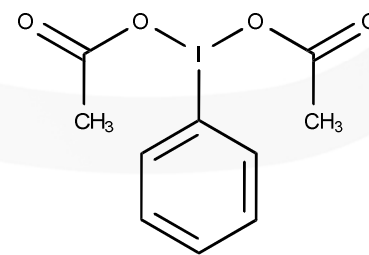
(Diacetoxiyodo)benzene

PIDA, DIB, DAIB

Available at SONEAS on a commercial scale

Fruzsina Szabó, PhD

PIDA/(Diacetoxyiodo)benzene

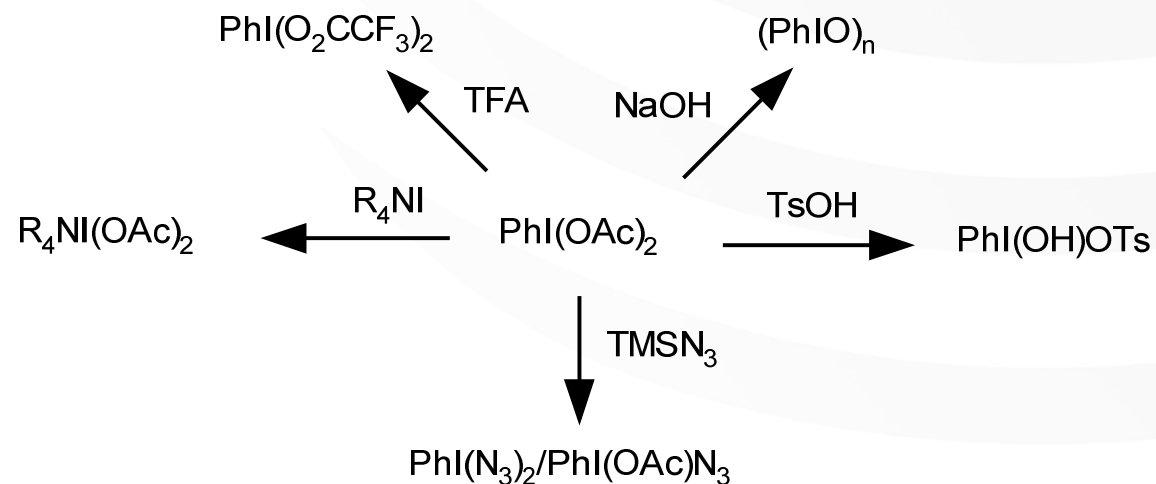


(Diacetoxyiodo)benzene

CAS: 3240-34-4

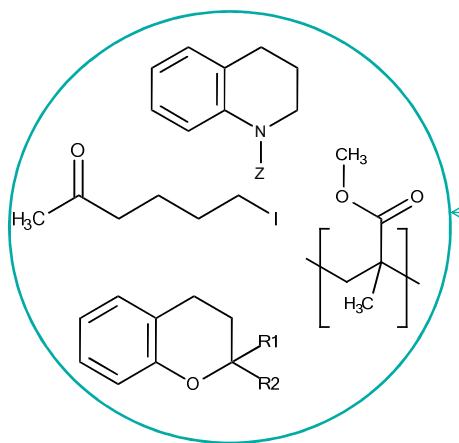
- Stable to air, non-hygroscopic and non-toxic metal-free oxidant
- Provides a wide range of oxidative transformations
- The basis of hypervalent iodine chemistry

Formation of hypervalent iodine reagents¹



Highly electrophilic reagents, reaction with various nucleophiles results in diverse chemistry

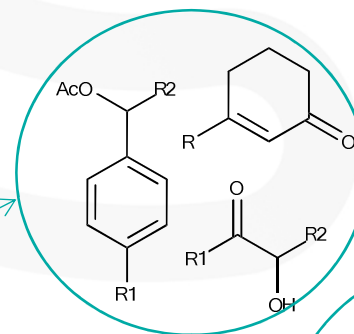
PIDA Chemistry



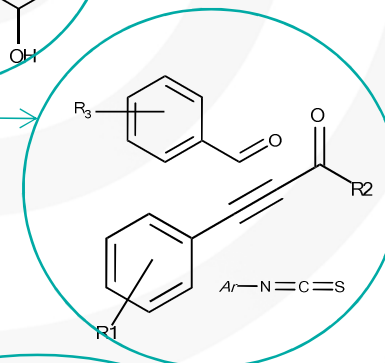
Promotes additions
to olefins

C-N, C-O, C-S bond formations
-N, O heterocycles,
thiocyanation

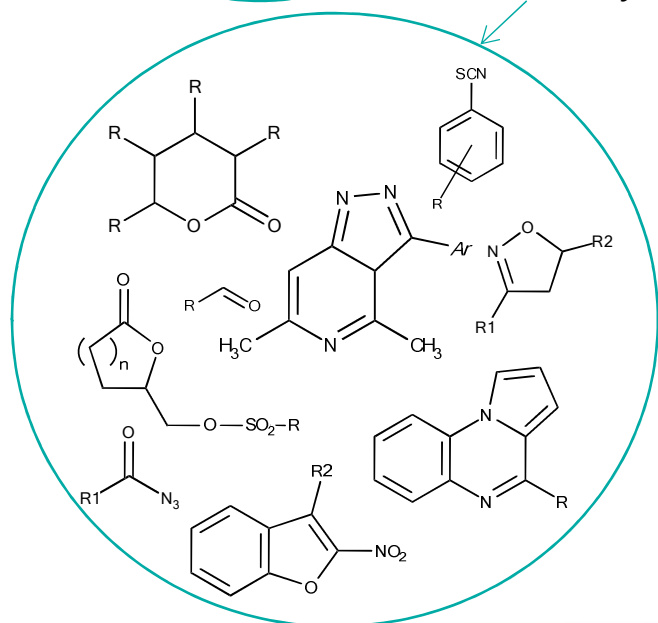
α -oxidation of ketons,
allylic, benzilic oxidation



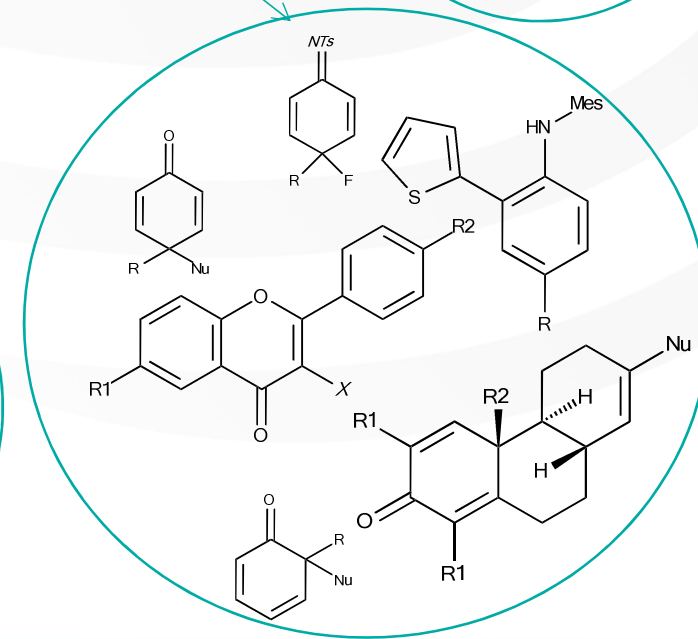
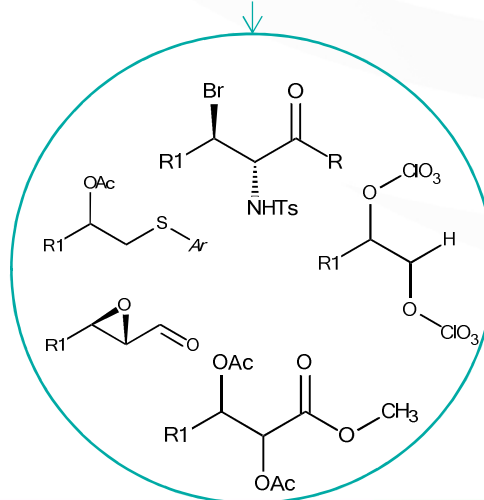
Rearrangements



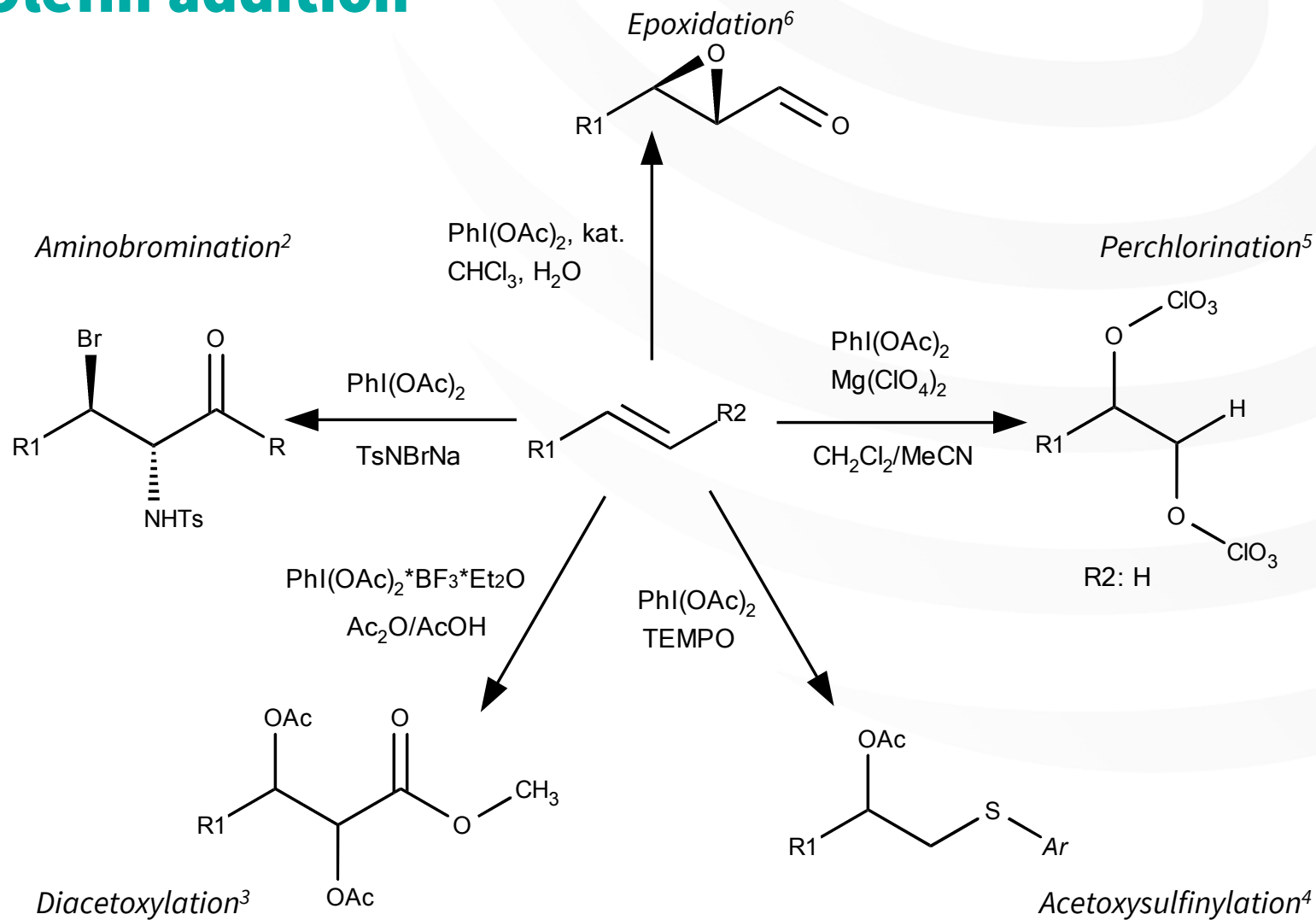
Oxidation of aromatic
compounds



Radical chemistry

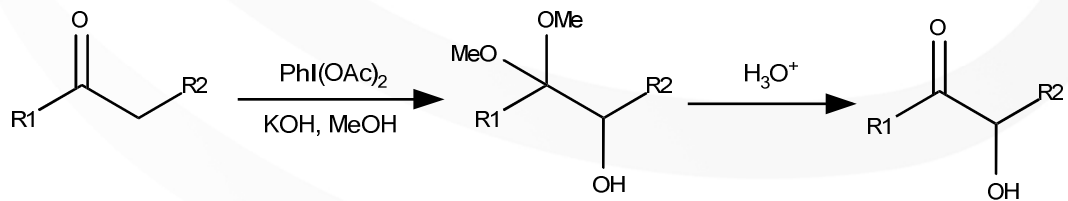


Olefin addition

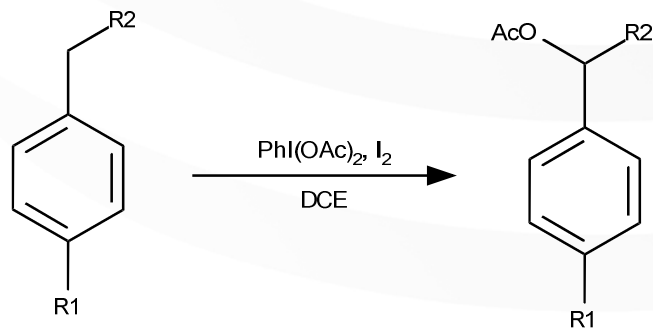


Oxidation of activated methylene group

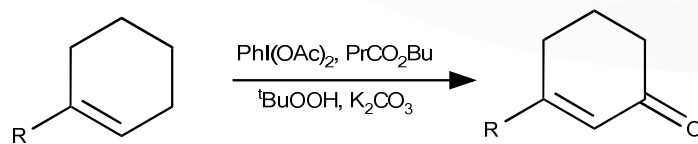
α -Hydroxylation⁷



Benzylic oxidation⁸

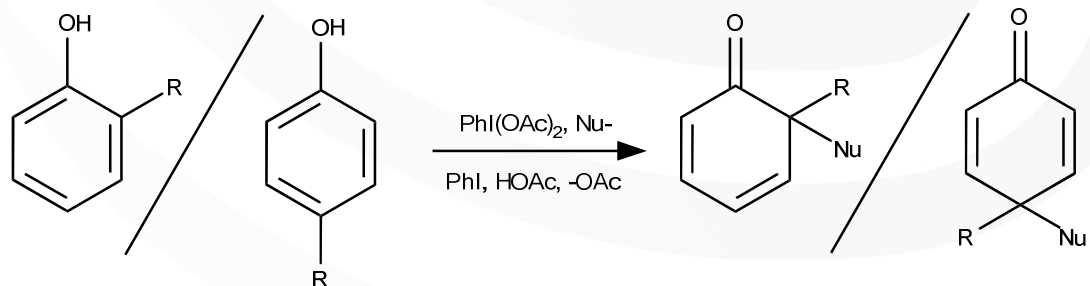


Allylic oxidation⁹



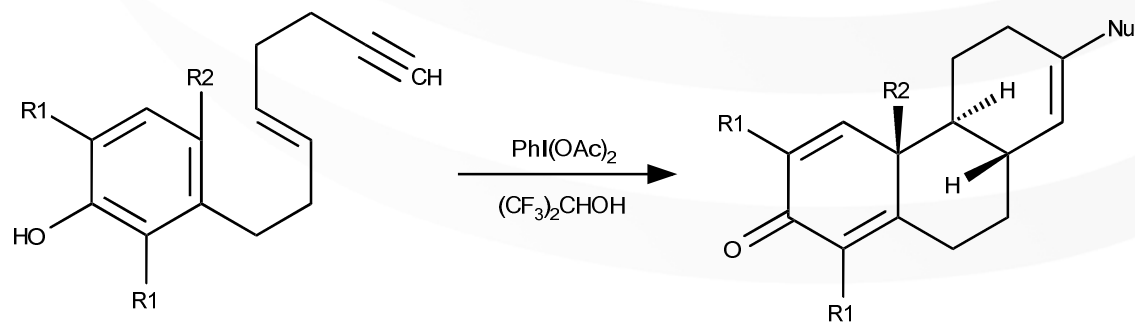
Oxidation of aromatic compounds

Oxidation of phenols¹⁰

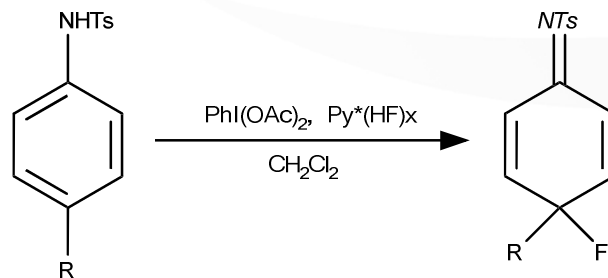


Internal nucleophiles → spiro compounds

Cationic cyclisations¹¹

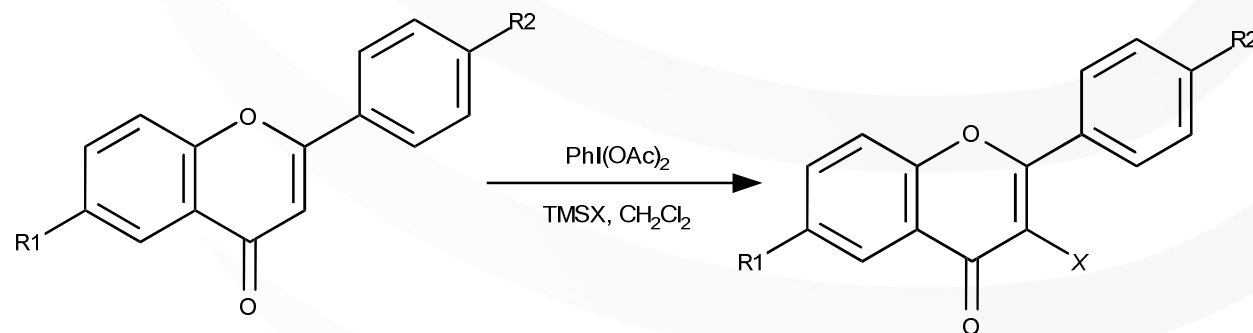


Oxidation of anilines¹²

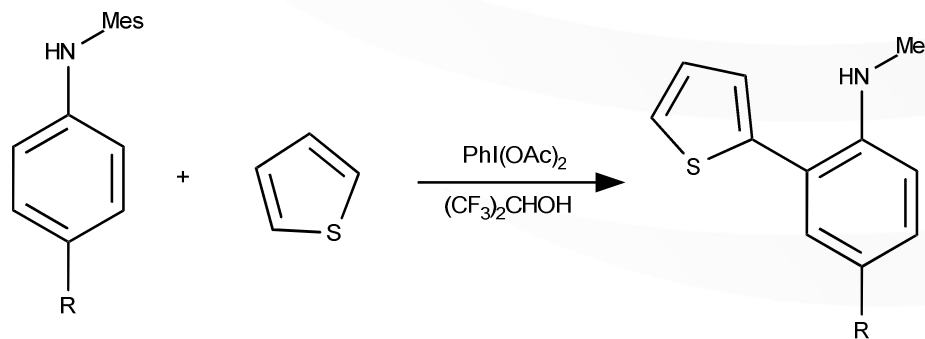


Oxidation of aromatic compounds

Halogenation¹³

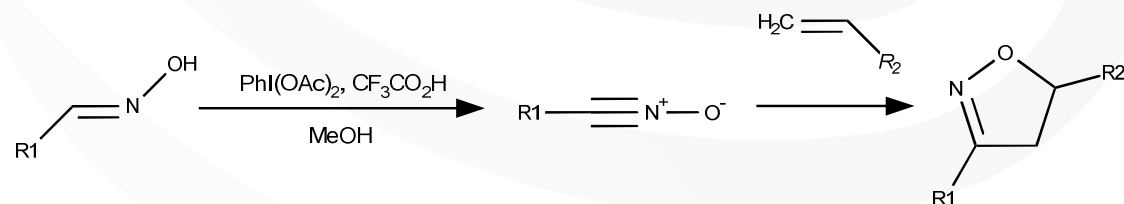


Coupling¹⁴

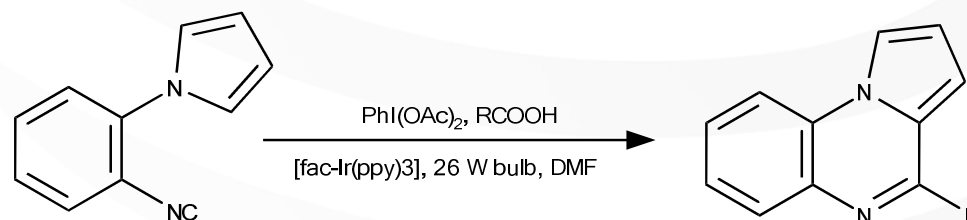


N-Heterocyclisation

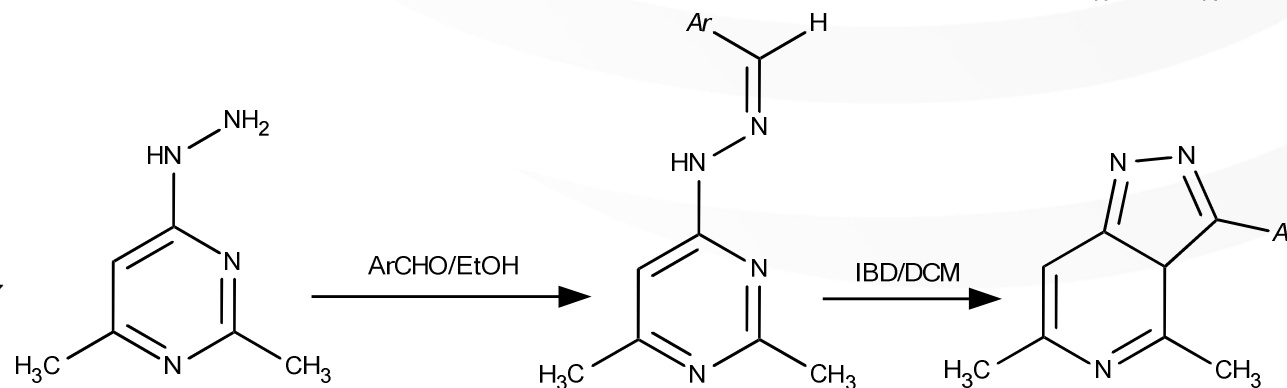
Oxazole¹⁵



Pyrrolo[1,2-a] quinoxaline¹⁶

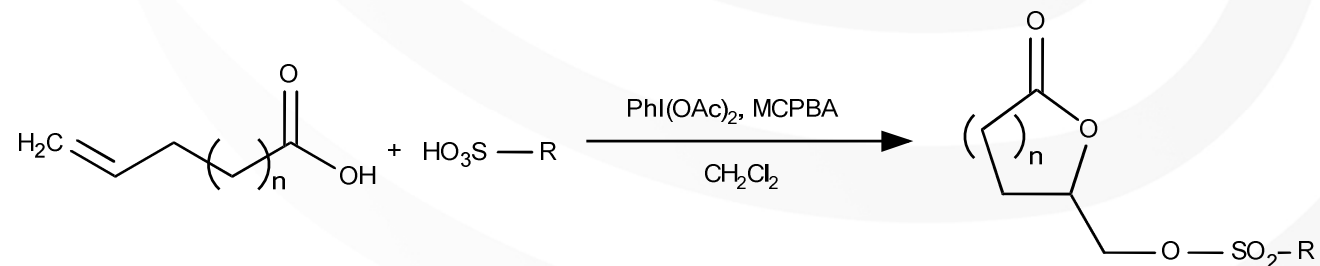


Pyrazolopyridine¹⁷

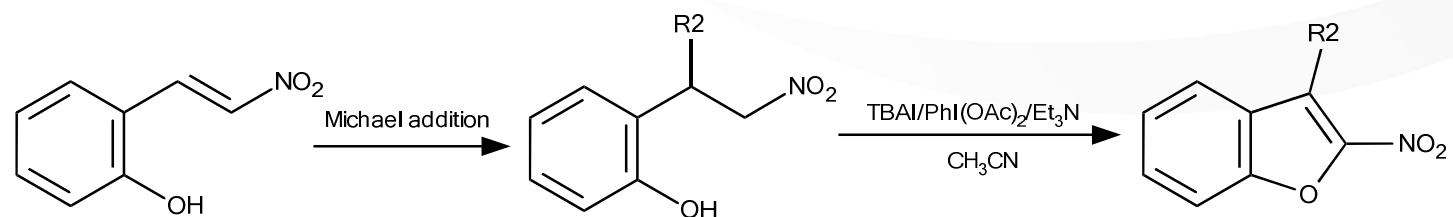


O-Heterocyclisation

Lactone^{18,19}

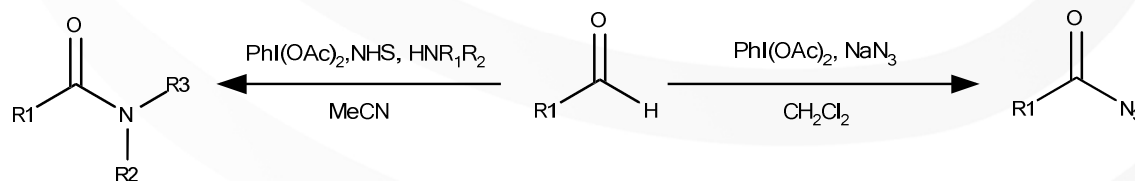


Benzofuran²¹

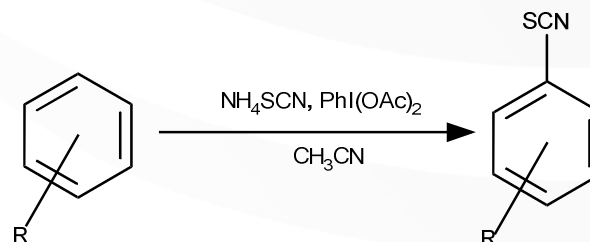


C-N, C-O, C-S bond formation

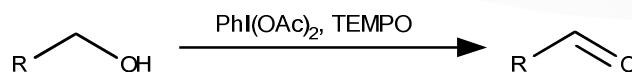
Azidation, amidation^{22,23}



*Thiocyanation*²⁴

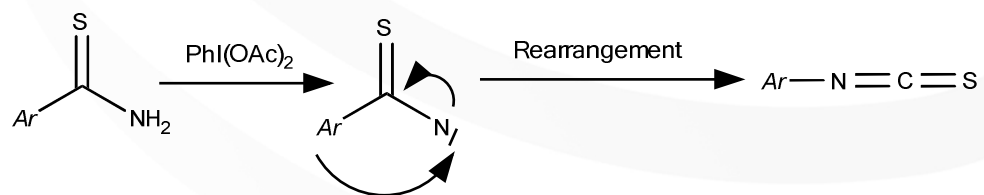


*Alcohol oxidation*²⁵

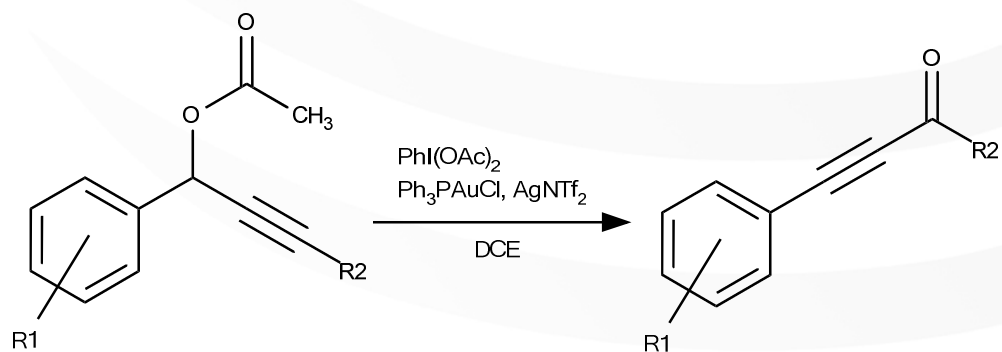


Rearrangements

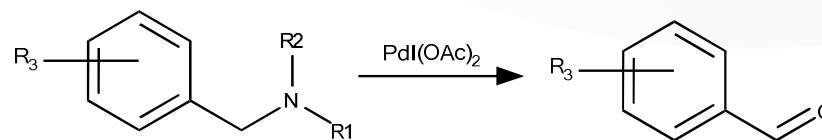
Hofmann²⁶



Meyer-Schuster²⁷

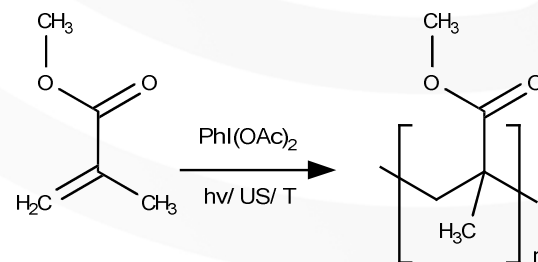


Polonovski²⁸

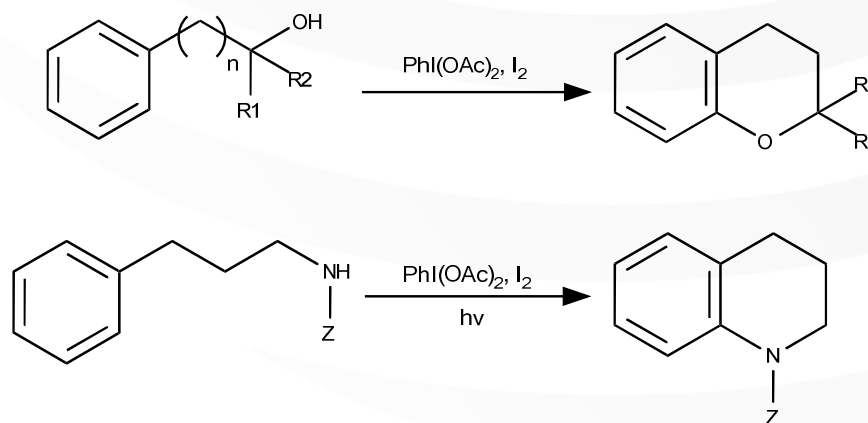


Radical chemistry

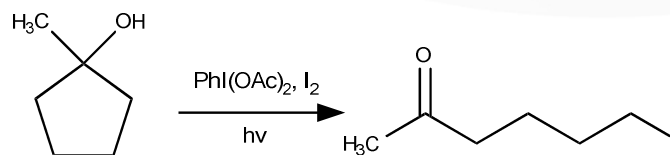
Photoiniferter in polymerisation²⁹



Radical cyclisation³⁰

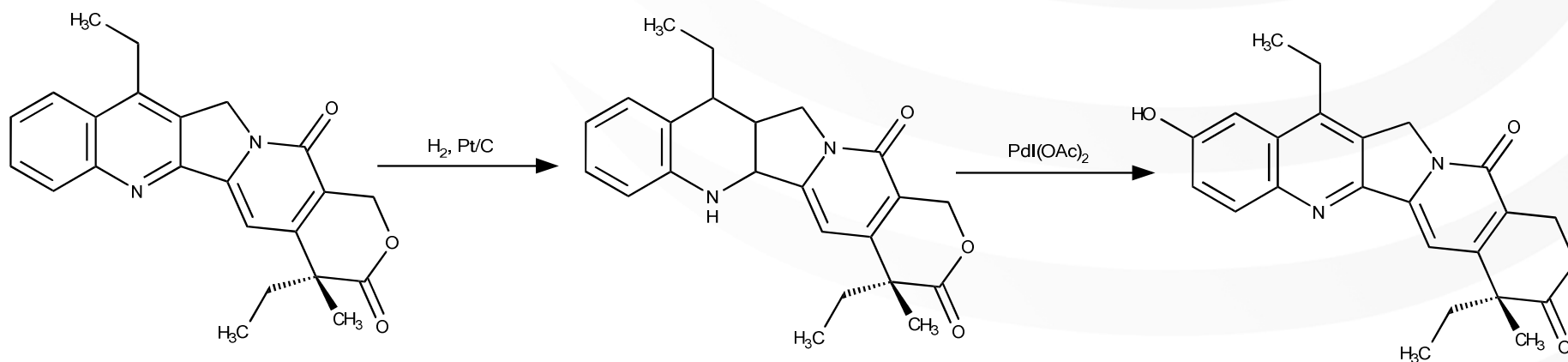


Ring opening³¹



Pharmaceutical application

Synthesis of 7-Ethyl-10-hydroxy-camptothecin (WO2005058910)



7-Ethyl-10-hydroxy-camptothecin is used for the manufacture of Irinotecan, a drug for the treatment of cancer.

References

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