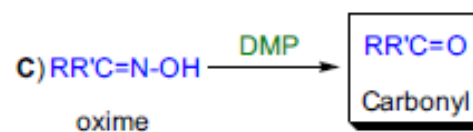
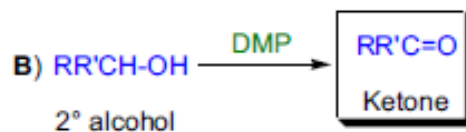
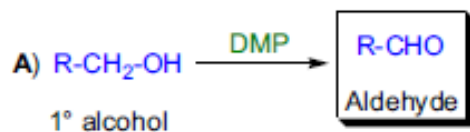
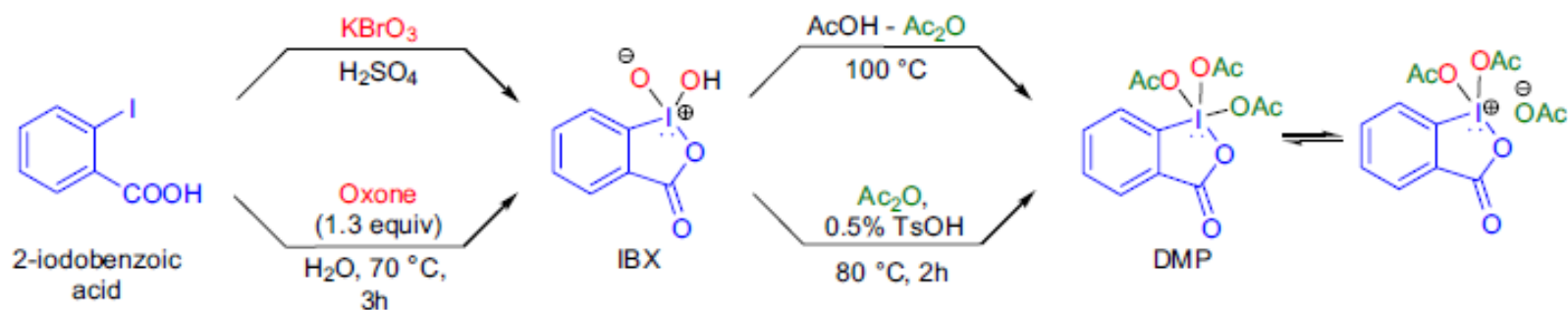


DESS-MARTIN OXIDATION

—By D.B. Dess and J.C. Martin

Importance



Importance

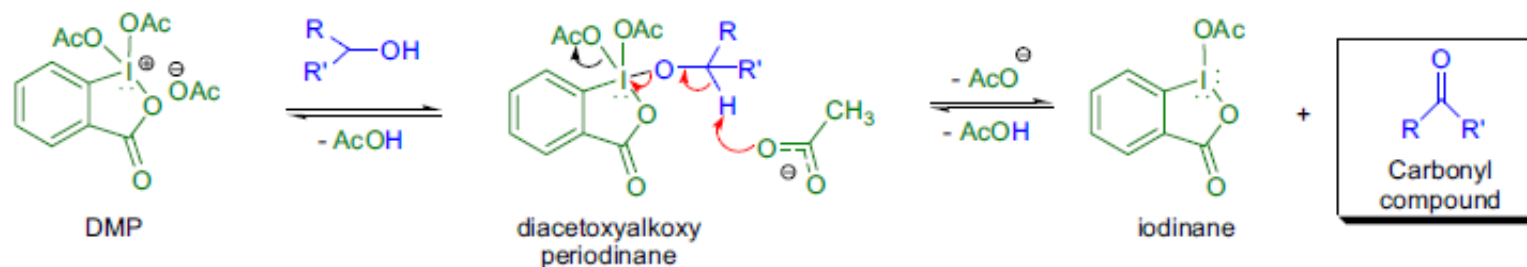
Since the early 1980s, hypervalent iodine reagents have emerged as selective, mild, and environmentally friendly oxidizing agents in organic synthesis.

In 1983, D.B. Dess and J.C. Martin reported the preparation of 1,1,1-tris(acetoxy)-1,1-dihydro-1,2-benziodoxol-3-(1*H*)-one (DMP) *via* the acylation of IBX. This new periodinane is far more soluble in organic solvents than IBX; since its discovery it has emerged as the reagent of choice for the oxidation of alcohols to the corresponding carbonyl compounds. Oxidations using DMP are called **Dess-Martin oxidations**.

Advantages

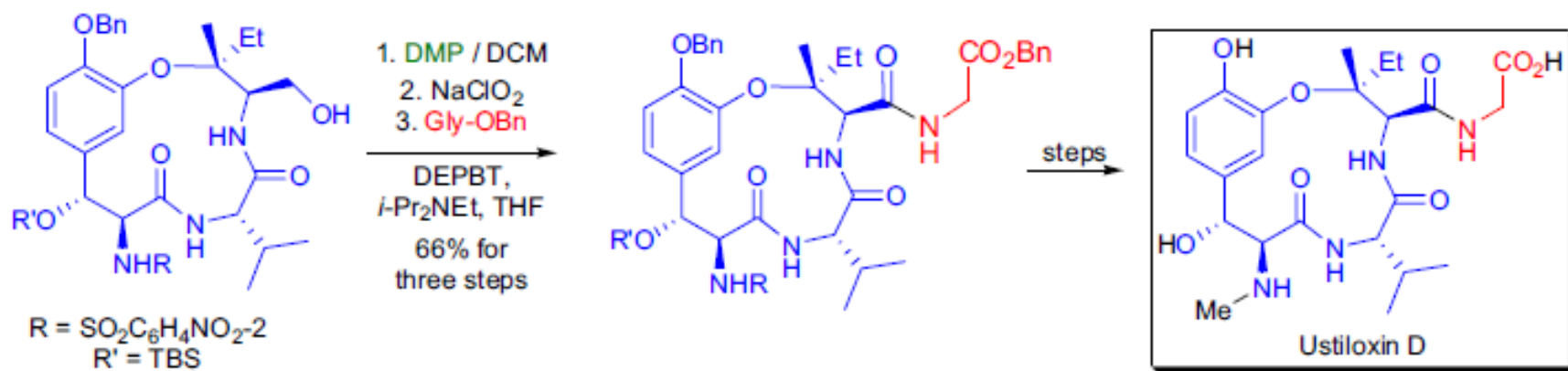
- mild reaction conditions (roomtemperature, neutral pH)
- high chemoselectivity
- tolerance of sensitive functional groups on complex substrates
- long shelf-life and thermal stability

Mechanism

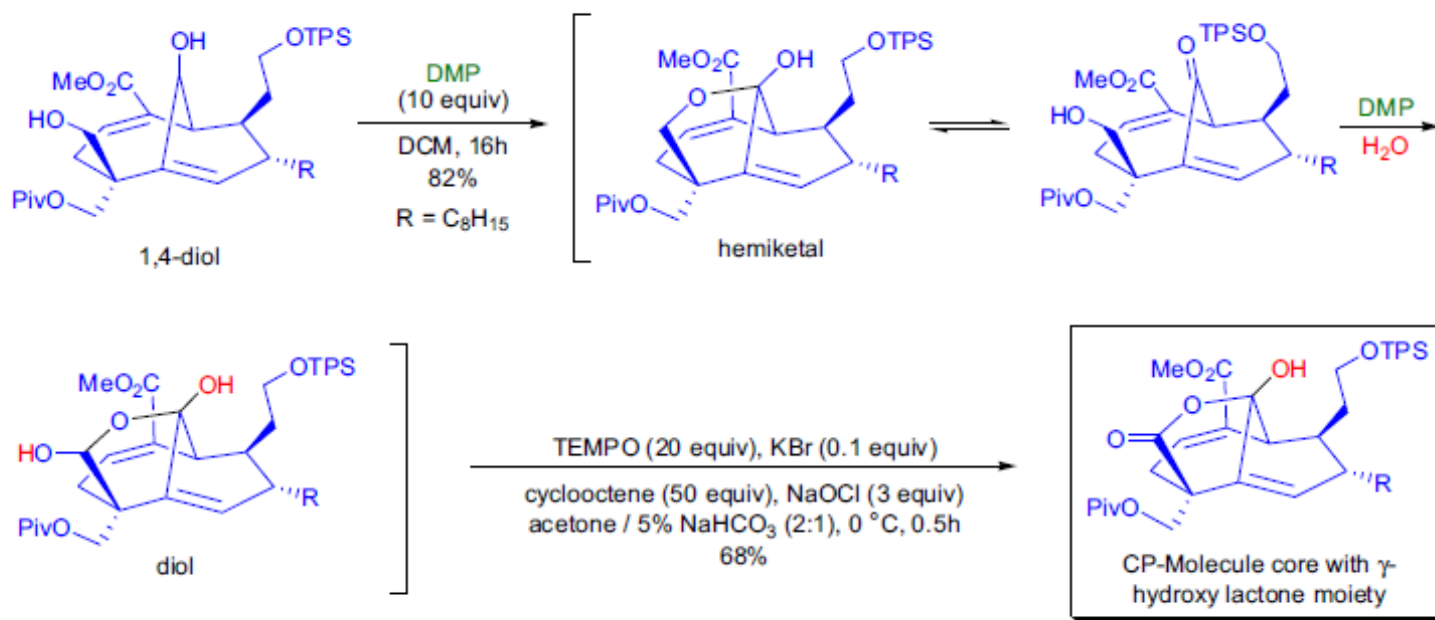


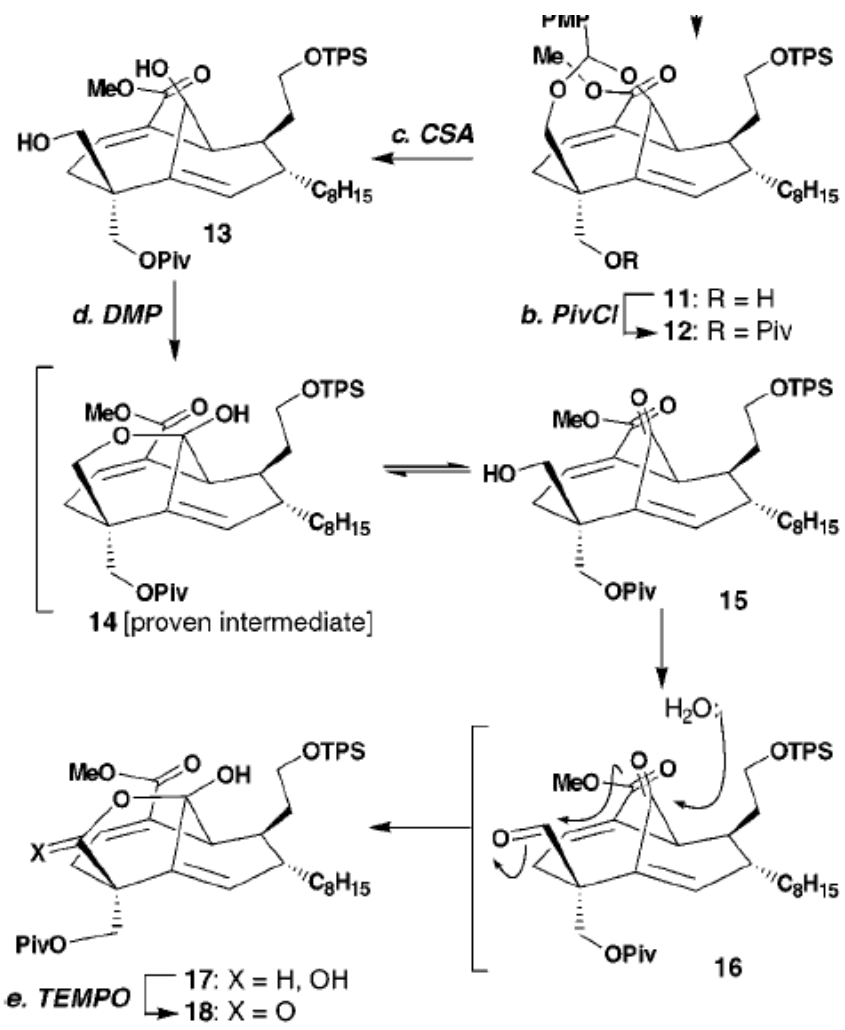
When excess alcohol is present, the oxidation is much faster due to the especially labile nature of acetoxydialkoxyperiodinanes. It has also been shown that added water accelerates DMP oxidations

Synthetic Applications



Synthetic Applications





Synthetic Applications

