

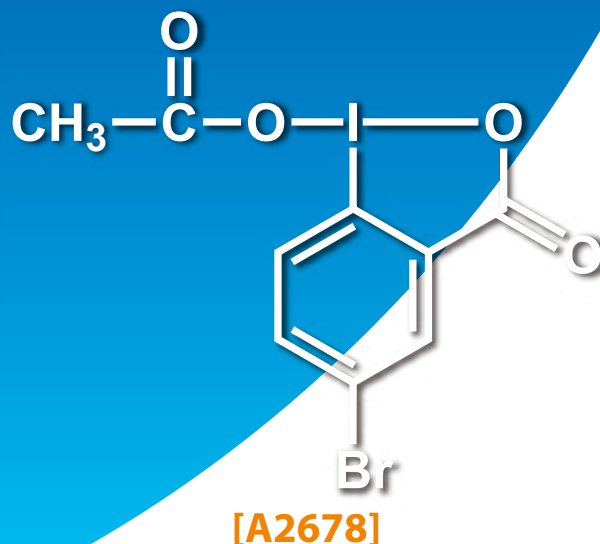
A Highly Active Trivalent Iodine Compound for Oxidation Reactions

ABBX

Advantages

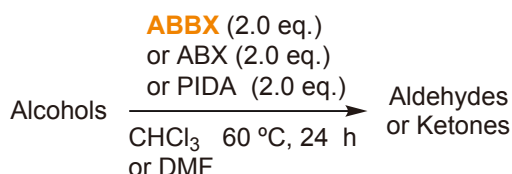
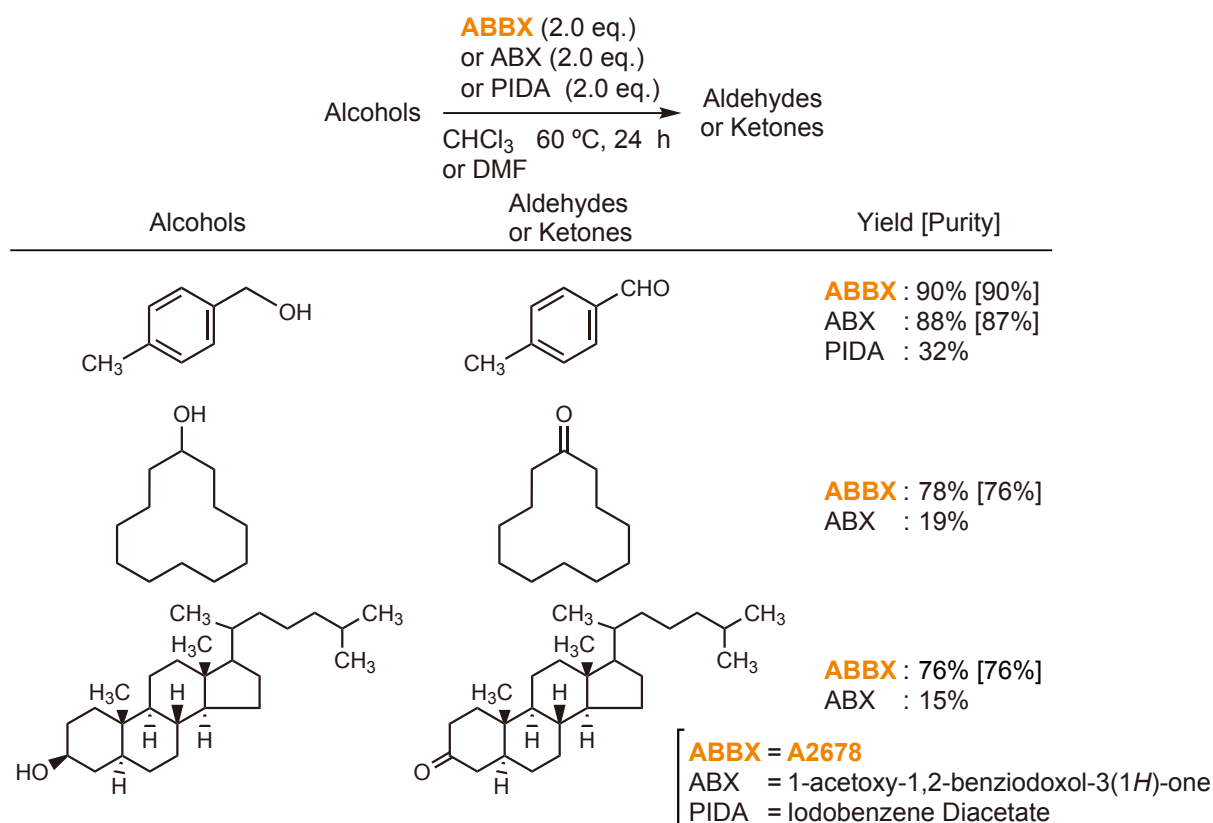
- **Powerful Oxidizing Ability (superior to that of iodobenzene diacetate (PIDA))**
- **Easy Oxidation of Benzylic Alcohols and Aliphatic Secondary Alcohols**
- **Easy Removal Process for Co-product (5-bromo-2-iodobenzoic acid)**

1-Acetoxy-5-bromo-1,2-benziodoxol-3(1*H*)-one (ABBX) [A2678] is a highly active trivalent iodine compound, developed by Togo *et al.*¹⁾ A2678 oxidizes benzylic alcohols and aliphatic secondary alcohols to the corresponding aldehydes and ketones in good yields from simple extraction of the reaction mixture. 5-Bromo-2-iodobenzoic acid, formed as a co-product of this reaction, can be recovered by acidification of the aqueous layer.



Reaction Examples

Oxidation of Alcohols to Aldehydes / Ketones using A2678 (ABBX)¹⁾



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Application Example

Oxidation of 4-methylbenzyl alcohol to 4-methylbenzaldehyde using A2678 (ABBX)¹⁾

To a solution of 4-methylbenzyl alcohol (1.0 mmol, 122.1 mg) in CHCl₃ (4 mL) is added **A2678** (ABBX) (2.0 mmol, 767.7 mg). The mixture is stirred at 60 °C for 24 h. After the reaction is completed, the reaction mixture is added to aq. NaHCO₃ (10 mL). The aqueous layer is extracted with CHCl₃ (3 × 10 mL), and the organic layer is dried over Na₂SO₄. The filtrate is concentrated under reduced pressure to give 4-methylbenzaldehyde (108.0 mg, 90%) with 90% purity. The aqueous layer is acidified (pH ca. 2) with 1 M aq. HCl (15 mL) and the obtained mixture is filtered to afford 2-iodo-5-bromobenzoic acid (593 mg, 91%).

A2678 1-Acetoxy-5-bromo-1,2-benziodoxol-3(1H)-one (ABBX) 1g

1) M. Iinuma, K. Moriyama, H. Togo, *Eur. J. Org. Chem.* **2014**, 772.
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