

CYCLIZATION REACTIONS OF PHENOL- AND ENOLACETYLENE COMPOUNDS

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Novel cyclization reaction of phenol- and enolacetylene compounds in the presence of mercuric oxide in refluxing DMF were reported.

Pyrocatecol monopropyn-2-yl ether (Ia) was treated in refluxing DMF in the presence of mercuric oxide to give 2,3-dihydro-2-methylene-1,4-benzodioxin (IIa) in 65-90 % yield. This cyclization reaction did not proceed without mercuric oxide and/ or at low temperature (below 110°C).

Phenolacetylenes, such as, 3-hydroxy-2-(propyn-2-yl)oxynaphthalene (Ic), o-N-benzyl-N-(propyn-2-yl)aminophenol (If) also cyclized to give the corresponding aromatic enol ethers (IIc, f) in moderate yield.

On the other hand, 2-benzoyl-1-oxo-1-phenyl-4-pentyne (IIIa) gave 3-benzoyl-5-methyl-2-phenylfuran (IVa) in 75 % yield.

Aromatic enol ether (IIa) was thermally isomerized by treatment with p-TsOH in refluxing benzene to afford 2-methyl-1,4-benzodioxin (Va). Also (IIa) reacted with methanol in the presence of p-TsOH to give 2,3-dihydro-2-methoxy-2-methyl-1,4-benzodioxin (VIIa) quantitatively.