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Oxidative Carbon–Carbon Bond Formation in the Synthesis of Bioactive Spiro β -Lactams *Org. Lett.* **2009**, *11*, 2820-2823.

Synthesis of Spiro β-Lactams and Oxoindoles by Oxidative Dearomatization

 $\label{eq:R} R=Bn, 3-O_2NBn, 3,4,5-MeOBn, 2-MeOBn, 3-MeOBn, 3,4-MeOBn, 4-MeOBn, i-Pr, 3,4-MeOC_6H_3CH_2CH_2, 3,4-methylenedioxybenzyl$

Significance: Reported is the synthesis of spiro β-lactams and oxoindoles by oxidative dearomatization of phenolic acetanilides. Following the lead of similar strategies developed by Kita for oxidative C-N coupling (Chem. Commun. 2007, 1224), the present group developed conditions for the conversion of phenolic amide 3 into spiro β-lactams 4 combining the CuSO₄·5H₂O, iodobenzene diacetate (IDB) and DMAP reagents. The reaction pathway may involve a radical coupling pathway involving oxidation reactions of IBD and CuSO₄·5H₂O (H. Eickhoff, G. Jung, A. Rieker Tetrahedron 2001, 57, 353). However, an ionic pathway cannot be excluded. Using the phenolic amide 5 as starting material, similar conditions for obtaining oxoindoles 6 were developed which, however, were not isolated but converted into the corresponding oxoindoles 7 by treatment with TsOH.

Comment: The β -lactam and oxoindole substructures are widely found in bioactive natural products and particularly in numerous pharmaceuticals such as penicillins and carbapenems (M. S. Butler *Nat. Prod. Rep.* **2005**, *22*, 162). An especially attractive feature of the present route is the use of common phenolic acetanilide starting materials. A significant disadvantage, however, is the need for N-substituted precursors **3**.

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