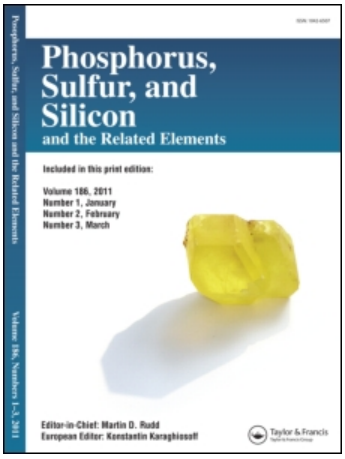

Phosphorus, Sulfur, and Silicon and the Related Elements

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Sulfidation of Alicyclic and Heterocyclic 1,3-Dicarbonyl Systems

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SULFIDATION OF ALICYCLIC AND HETEROCYCLIC 1,3-DICARBONYL SYSTEMS

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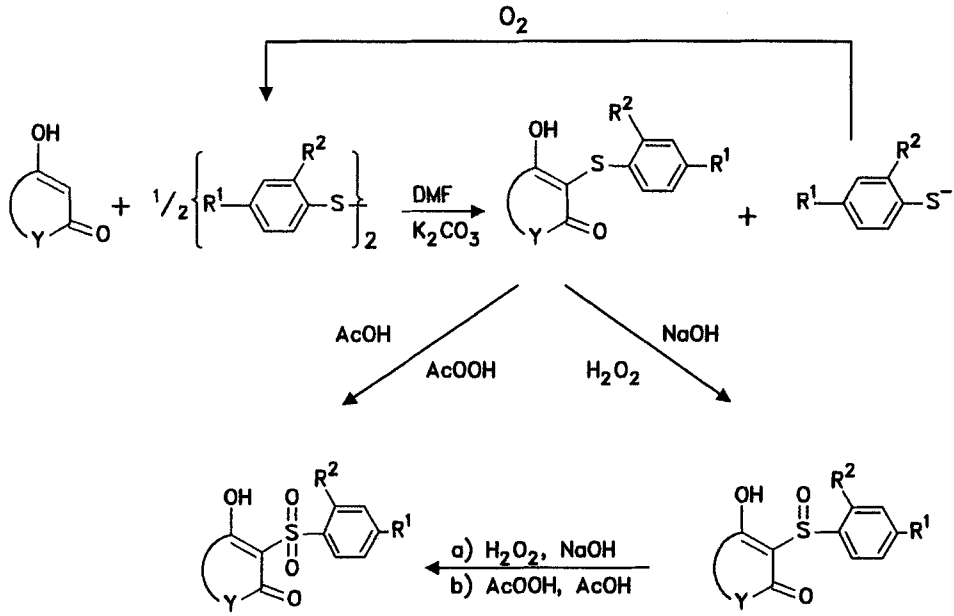
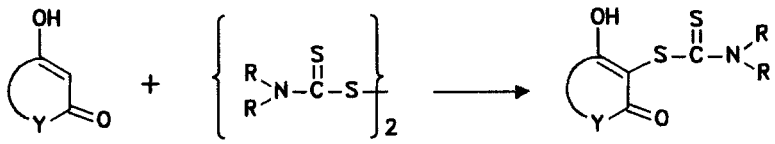
Abstract The synthesis of sulfides starting with anions of 1,3-dicarbonyl systems and disulfides is presented.

Anions of alicyclic and heterocyclic five- or six-membered 1,3-dicarbonyl compounds react with aromatic disulfides and other -S-S- systems, such as thiuramdisulfides, in DMF in the presence of potassium carbonate to yield sulfides. The heterocyclic systems studied include pyrazol-1,3-diones, barbituric acids, 6-hydroxy-pyrimidin-4-ones, 5-hydroxy-3(2*H*)-pyridazinones, 4-hydroxy-2-pyrones, 4-hydroxy-2-pyridones; and their benzo derivatives (e.g. coumarins and quinolones).

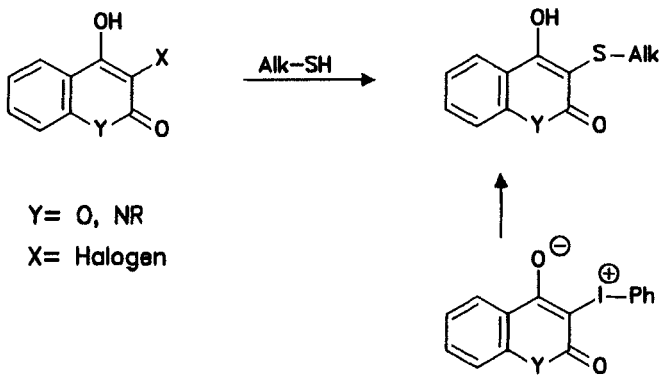


Oxidation of the sulfides with peracids yields sulfones, while careful oxidation with H_2O_2 in alkaline medium affords the sulfoxides. The latter class of compounds are heteroanalogs of the well known cyclic tricarbonyl methane derivatives [SO instead of CO] which show a broad range of biological activity, especially in agricultural chemistry.



R= CH_3, C_2H_5
R–R= $(CH_2)_5$, $(CH_2)_2O(CH_2)_2$

Aliphatic thioethers of this type can not be prepared by the procedure described before. However, they are available by the reaction of the α-halogeno ß-dicarbonyl systems or their corresponding iodonium ylids.[1-3]



Y= O, NR
X= Halogen

REFERENCES

1. T. Kappe, G. Korbuly, and W. Stadlbauer, Chem. Ber. 119, 3857 (1978).
2. T. Kappe, G. Korbuly, and E. Pongratz, Monatsh. Chem. 114, 303 (1983); Z. Naturforsch. 38B, 398 (1983).
3. E. Pongratz and T. Kappe, Monatsh. Chem., 115, 231 (1984).