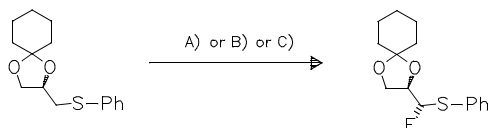


Halogenation
O 0235

27- 048

Electrolytic Partial Fluorination of Organic Compounds. Part 71. Highly Diastereoselective Anodic Fluorination of Sulfides Having Oxygen-Containing Heterocyclic Groups. — Sulfides having protected 1,2-diol moieties at the β -position can undergo efficient and diastereoselective monofluorination under electrolytic conditions. The nature of the fluorinating agent and solvent used as well as electronic effects in the sulfides play an important role on the reaction outcome. Chiral fluorine-containing diols like (IV) are important building blocks. — (SUZUKI, K.; FUCHIGAMI*, T.; J. Org. Chem. 69 (2004) 4, 1276-1282; Dep. Electron. Chem., Tokyo Inst. Technol., Midori, Yokohama 226, Japan; Eng.) — Jannicke



(R)-I

II*

A): $\text{NEt}_3 \cdot 3\text{HF}$, $-\text{e}^-$, MeCN, 20°C

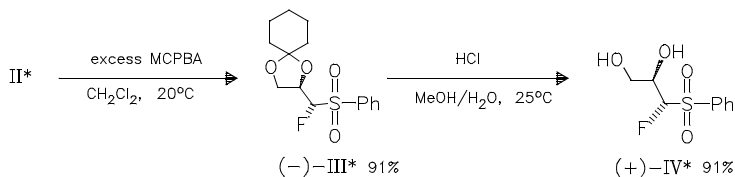
54% (80% d.e., NMR)

B): $\text{NEt}_3 \cdot 3\text{HF}$, $-\text{e}^-$, MeCN, 0°C

31% (76% d.e., NMR)

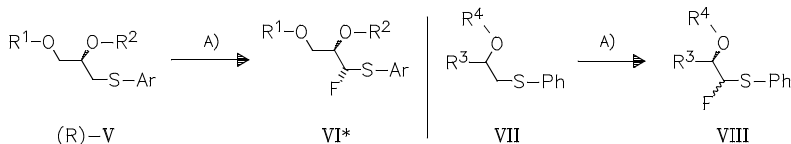
C): $\text{NEt}_3 \cdot 3\text{HF}$, $-\text{e}^-$, CH_2Cl_2 , 20°C

60% (69% d.e., NMR)



(-)-III* 91%

(+)-IV* 91%



(R)-V

VI*

VII

VIII

a Ar: ; $\text{R}^1\text{-R}^2$: 71% (70% d.e.)

a $\text{R}^3\text{-R}^4$: 51% (84:16 m.d., NMR)

b Ar: ; $\text{R}^1\text{-R}^2$: 54% (58% d.e.)

b $\text{R}^3\text{-R}^4$: 28% (80:20 m.d., NMR)

c Ar: ; $\text{R}^1\text{-R}^2$: trace

c R^3 , R^4 : $-\text{Me}$ 10% (65:35 m.d., NMR)

d Ar: $-\text{Ph}$; $\text{R}^1\text{-R}^2$: 45% (70% d.e., NMR)

e Ar: $-\text{Ph}$; $\text{R}^1\text{-R}^2$: 19% (13% d.e.)

f Ar: $-\text{Ph}$; R^1 , R^2 : $-\text{Me}$ 30% (60% d.e., NMR)