Supporting Information for
Deoxygenation of Sulphoxides to Sulphides with Trichlorophosphane
Xia Zhao*, Xiancai Zheng*, Bo Yang*, Jianqiao Sheng* and Kui Lu

* College of Chemistry, Tianjin Key Laboratory of Structure and Performance for Functional Molecules, Key Laboratory of Inorganic-Organic Hybrid Functional Materials Chemistry (Tianjin Normal University), Ministry of Education, Tianjin Normal University, Tianjin 300387, China.

b College of Biotechnology, Tianjin University of Science & Technology Tianjin 300457, China

Contents

1H and 13C NMR spectra of 3 S2-S25
Experimental procedure of additional reaction to support the mechanism S26
GC-MS data of the additional reaction S27-S30

* Xia Zhao. Tel.: +86 22 23766531; fax: +86 2223766531; e-mail: hxxyzhx@mail.tjnu.edu.cn
$^1$H and $^{13}$C NMR spectra of \textit{Butyl(p-tolyl)sulfane}(3a) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of Isopropyl(phenyl)sulfane(3b) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of Cyclopropyl(phenyl)sulfane(3c) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of Allyl(p-toly)sulfane(3d) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of Prop-2-yn-1-yl(p-tolyl)sulfane(3e) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of Benzyl(p-tolyl)sulfane(3f) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of 1-benzyl-2-(benzylthio)-1H-benzo[d]imidazole(3g) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of Ethyl 2-($p$-tolylthio)acetate(3h) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of 2-(p-tolylthio)acetic acid (3i) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of $N,N$-diethyl-2-(p-tolythio)acetamide (3j) in CDCl$_3$
$^1$H, $^{13}$C and $^{19}$F NMR spectra of 1-methyl-3-((trifluoromethyl)thio)-1H-indole(3k) in CDCl$_3$.
$^1$H, $^{13}$C and $^{19}$F NMR spectra of 3-((difluoromethyl)thio)-1H-indole(3l) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of Diphenylsulfane(3m) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of Bis(4-nitrophenyl)sulfane(3n) in d$_6$-DMSO
$^1\text{H}$ and $^{13}\text{C}$ NMR spectra of Bis(4-methoxyphenyl)sulfane(3o) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of Bis(2,6-dimethylphenyl)sulfane(3p) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of 4,4'-thiodiphenol (3q) in d$_6$-DMSO
$^1$H and $^{13}$C NMR spectra of *9H-thioxanthen-9-one*(3r) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of *Thiobis*(4,1-phenylene) diacetate (3s) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of 1-methyl-3-(p-tolylthio)-1H-indole (3t) in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of *Dibenzylsulfane(3u)* in CDCl$_3$
$^1$H and $^{13}$C NMR spectra of Dibutylsulfane(3v) in CDCl$_3$
Procedure for the additional reaction to support the mechanism

Add 1a (98 mg, 0.5 mmol) to dry CH$_3$CN (2 mL) in a flame-dried Schlenk tube. Then the trichlorophosphane (72 mg, 0.525 mmol) was added into the solvent by syringe at 25 °C. The mixture was stirred at indicated temperature for 0.5 hour. Then, the reaction was quenched with pyrrolidine (710 mg, 10 mmol) and stirred at 25 °C for 1 hour. The solvent was evaporated under reduced pressure and the residue was analysed by GC-MS.
文件 : D:\Data in list\190101-zxc-3-41-1.D
操作员 : 
已采集 : 01 Jan 2018 14:32 , 使用采集方法 61-280-20.M
仪器 : GCMS
样品名称 : 190101-zxc-3-41-1
其他信息 : 样品编号 : S28
文件：D:\Data in list\180101-zxc-3-41-1.D

文件名：180101-zxc-3-41-1

其他信息：

样品名称：180101-zxc-3-41-1

扫描：1000 (11.598 分)

图中数据为180101-zxc-3-41-1.D(data.ms)