

A Short and Descriptive Title

Your Name Here

Sigurðsson Research Group
A 6-Months Progress Report
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UNIVERSITY OF ICELAND
DEPARTMENT OF CHEMISTRY
SCIENCE INSTITUTE

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Abstract

Write your abstract here.

Abbreviations

DCM	dichloromethane
DMF	<i>N,N</i> -dimethylformamide
DNA	deoxyribonucleic acid
EPR	electron paramagnetic resonance
ESI-MS	electron-spray ionization mass-spectrometry
<i>J</i>	coupling constant
<i>m/z</i>	mass–charge ratio
NMR	nuclear magnetic resonance
ppm	parts per million
RNA	ribonucleic acid
rt	room temperature (ambient)
TEA	triethylamine
THF	tetrahydrofuran
TFA	trifluoroacetic acid
TLC	thin layer chromatography
δ	chemical shift
s	singlet
d	doublet
t	triplet
q	quartet
m	multiplet

1 Introduction

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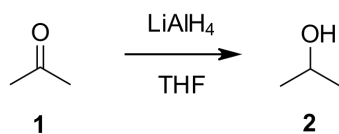


Figure 1. Caption text.

Figure 1 shows a sample image. The DNA double helix was first reported by Watson and Crick in 1953.[1] It also possible to put the citation in superscript, like this.^[1]

2 Results and Discussion

Write your syntheses and outcomes here.



Scheme 1. A scheme with no compound numbers.

Scheme 1 shows a sample reaction scheme.

3 Conclusions and Outlook

Write your conclusions, and your outlook here.

4 Experiments

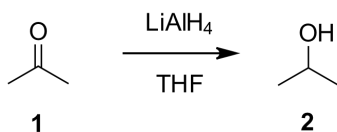
4.1 General

Chemicals were purchased primarily from Sigma-Aldrich Chemical Company and Acros, Belgium, and were used without further purification. Triethylamine was purchased anhydrous. TLC was carried out using glass plates pre-coated with silica gel (F254, Silicycle SiliPlate 60 Å). Visualisation was by UV light, and I₂ staining, respectively. Silica gel was purchased from Silicycle, and used for medium pressure chromatography ("flash"-chromatography).

¹H and ¹³C NMR spectra were recorded at the frequencies stated, using deuterated chloroform as internal standard ($\delta = 7.26$ ppm for ¹H and $\delta = 77.0$ ppm for ¹³C NMR). 400 MHz spectra were recorded on a Bruker Advance 400 spectrometer. All coupling constants were measured in Hertz.

All moisture sensitive reactions were carried out in flame-dried glassware using argon from standard BOC industrial cylinders, dried through an activated silica column. Diethyl ether for moisture-sensitive reactions was used freshly distilled over Na under argon atmosphere. Concentrations of *n*Bu Li in hexane were determined by titration using diphenylacetic acid.

4.2 1,2,4,5-Tetra-*tert.*-butylthiobenzene (1)



To a solution of 2-methyl-2-propanethiol (94 mL, 0.84 mol) in DMF (150 mL) was added small pieces of sodium (19.37 g, 0.84 mol) at 0 °C. The mixture was allowed to reach ambient temperature and was stirred overnight. 1,2,4,5-Tetrachlorobenzene (30.3 g, 140.6 mmol) was added at once, and the resulting mixture was heated to 90 °C. As soon as the reaction mixture darkened and steam started to develop, the heating source was removed. As soon as the exothermic reaction had finished, the mixture was heated to 120 °C for 24 h. After being cooled to ambient temperature, the reaction mixture was poured over ice. The precipitate was removed by filtration, washed with water, and dried to give 30 g (49.5%) of the product as an off-white powder.

Notebook reference: MKI-107.

¹H NMR (400 MHz, CDCl₃) δ = 7.94 (2 H, s), 1.36 ppm (2 H, s).

¹³C NMR (101 MHz, CDCl₃) δ = 144.78, 139.36, 48.13, 31.33 ppm.

References

- [1] J. D. Watson, F. H. Crick, “Molecular structure of nucleic acids”, *Nature* **1953**, *171*, 737–738.

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List of Schemes

- 1 A scheme with no compound numbers. 5