Generation of Synthetic Equivalents of Benzdiynes
from Benzobisoxadisiloles

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13C NMR spectrum of 33a  
1H NMR spectrum of 33b  
13C NMR spectrum of 33b  
1H NMR spectrum of 33c  
13C NMR spectrum of 33c  
1H NMR spectrum of 34b  
13C NMR spectrum of 34b  
1H NMR spectrum of 35b  
13C NMR spectrum of 35b  
1H NMR spectrum of 35c  
13C NMR spectrum of 35c
General. NMR spectra were recorded on a Varian INOVA-400FT NMR spectrometer (400 MHz for $^1$H and 100.6 MHz for $^{13}$C) or a JEOL EX270 NMR spectrometer (270 MHz for $^1$H and 67.8 MHz for $^{13}$C) with CDCl$_3$ as the solvent. Chemical shifts are reported as parts per million (ppm) in $\delta$ unit in the scale relative to the resonance of CDCl$_3$ (7.26 ppm in the $^1$H, 77.00 ppm for the central line of the triplet in the $^{13}$C modes, respectively). Coupling constants ($J$) are reported in Hz. IR spectra were determined on a Nicolet Magna-IR 550 spectrometer, date were given in cm$^{-1}$. Low resolution mass spectra (LRMS) were obtained on a Finnigan MAT SSQ-710 spectrometer in FAB (positive ion) mode or E.I. mode and reported as $m/z$. High resolution mass spectra (HRMS) was recorded on a Applied Biosystem QSTAR Pulsar/LC/MS/MS, ESI-QTOF instrument. Melting points are uncorrected. Anhydrous magnesium sulfate was the drying agent throughout, and the silica gel for chromatography was 230-400 mesh. Element analyses were performed at the Shanghai Institute of Organic Chemistry, Chinese Academy of Science and Shanxi University. X-ray crystallographic data were collected with a Bruker AXS SMART 1000 CCD area-detector diffractometer with graphite-monochromated Mo-Kα radiation ($\lambda=0.71073$ Å) at 293 K. The collected frames were processed with proprietary software SAINT and an absorption correction was applied (SADABS) to the collected reflections. The structures of these molecules were solved by direct methods and expanded by standard difference Fourier syntheses using the software SHELXTL.
FIGURE 1. X-ray Structure of 14

FIGURE 2. X-ray Structures of 19a, 19d, 20b, 20c and 22

FIGURE 3. X-ray Structure of 25a (syn)

FIGURE 4. X-ray Structure of 34b
$^1$H NMR spectrum of 12b
$^{13}$C NMR spectrum of 12b
$^1$H NMR spectrum of 13
$^{13}$C spectrum of 13
$^1$H NMR spectrum of 14
$^{13}$C NMR spectrum of 14
$^1$H NMR spectrum of 15
\[^{13}\text{C}\] NMR spectrum of 15
$^1$H NMR spectrum of 16
$^{13}$C NMR spectrum of 16
$^1$H NMR spectrum of 19a
$^{13}$C NMR spectrum of 19a
$^1$H NMR spectrum of 19b
$^{13}$C NMR spectrum of 19b
$^1$H NMR spectrum of 19c
$^{13}$C NMR spectrum of 19c
$^{1}$H NMR spectrum of 19d
\(^{13}\)C NMR spectrum of 19d
$^1$H NMR spectrum of 19e
$^{13}$C NMR spectrum of 19e
$^1$H NMR spectrum of 20a
$^{13}$C NMR spectrum of 20a
1H NMR spectrum of 20b
$^{13}$C NMR spectrum of 20b
$^1$H NMR spectrum of 20c
$^{13}$C NMR spectrum of 20c
$^1$H NMR spectrum of 20d
$^{13}$C NMR spectrum of $20d$
$^1$H NMR spectrum of 20e
$^{13}$C NMR spectrum of 20e
$^1$H NMR spectrum of 21

$\text{Ar} = \rho$-CH$_2$O-C$_6$H$_4$
$^{13}$C NMR spectrum of 21
$^1$H NMR spectrum of 22
$^{13}$C NMR spectrum of 22
1H NMR spectrum of 25a+26a
$^{13}$C NMR spectrum of 25a+26a
The image contains an NMR spectrum of compounds 25b and 26b. The spectrum shows the chemical shifts and multiplicities for these compounds. The compounds are marked as (syn) for 25b and (anti) for 26b.
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13C NMR spectrum of 25b+26b

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$^{13}$C NMR spectrum of 27
$^1$H NMR spectrum of 28
$^{13}$C NMR spectrum of 28
$^1$H NMR spectrum of 31
$^{13}$C NMR spectrum of 31
$^1$H NMR spectrum of 33a
$^{13}$C NMR spectrum of 33a
$^1$H NMR spectrum of 33b
$^{13}$C NMR spectrum of 33b
$^1$H NMR spectrum of 33c
$^{13}$C NMR spectrum of 33c
$^1$H NMR spectrum of 34b
$^{13}$C NMR spectrum of 34b
$^1$H NMR of 35b
$^{13}$C NMR spectrum of 35b
$^1$H NMR spectrum of 35c
$^{13}$C NMR spectrum of 35c
$^1$H NMR spectrum of 37b+38b
$^{13}$C NMR spectrum of $^{37b} + ^{38b}$