Supplementary Material

Novel directed synthesis of functionalized pyrazole derivatives via regioselective solvent-free thiylation of 3-alkenylpyrazoles with arenethiols

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Cl

N

Br

Cl

N

Cl

B r


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0 0.4 0.8 1.2 1.6 2.0 2.4 2.8 3.2 3.6 4.0 4.4 4.8 5.2 5.6 6.0 6.4 ppm
$^1$H NMR spectrum of 3f (CDCl$_3$)
$^{13}$C NMR spectrum of 3f (CDCl$_3$)
$^1$H NMR spectrum of 3g + 3h (CDCl$_3$)
$^1$H NMR spectrum of 3j (CDCl$_3$)
$^{13}$C NMR spectrum of 3j (CDCl$_3$)
$^1$H NMR spectrum of 4c (CDCl$_3$)
$^{13}$C NMR spectrum of 4c (CDCl$_3$)
1H NMR spectrum of 4d (CDCl₃)
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$\text{H NMR spectrum of } 4e \text{ (CDCl}_3\text{)}$
$^{13}$C NMR spectrum of 4e (CDCl$_3$)
$^1$H NMR spectrum of 4f (CDCl$_3$)
$^{13}$C NMR spectrum of 4f (CDCl$_3$)
$^1$H NMR spectrum of 4g (CDCl$_3$)
$^{13}$C NMR spectrum of 4g ($\text{CDCl}_3$)
$^1$H NMR spectrum of 6aa (CDCl$_3$)
$^{13}$C NMR spectrum of 6aa (CDCl$_3$)
$^1$H NMR spectrum of 6ab (CDCl$_3$)
$^{13}$C NMR spectrum of 6ab (CDCl$_3$)
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