Supporting Information

4-CH₃OTEMPO/PEG-NO₂/HCl Catalytic System for Highly Efficient Aerobic Oxidation of Alcohols

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Supplementary Figure legends

Fig. 1: GC diagram of benzyl alcohol.
Fig. 2: GC diagram of oxidation of benzyl alcohol with 0.1mmol% of 4-CH₃OTEMPO, 10mmol% of PEG-NO₂, 5mmol% of HCl at 40 °C for 6h under the dioxygen balloon.
Fig. 3: GC diagram of oxidation of benzyl alcohol with 0.01mmol% of 4-CH₃OTEMPO, 10mmol% of PEG-NO₂, 5mmol% of HCl at 40 °C for 16h under the dioxygen balloon (Table 1, entry 1).
Fig. 4: GC diagram of 2-methylbenzyl alcohol.
Fig. 5: GC diagram of oxidation of 2-methylbenzyl alcohol with 0.01mmol% of 4-CH₃OTEMPO, 10mmol% of PEG-NO₂, 5mmol% of HCl at 40 °C for 22h under the dioxygen balloon (Table 1, entry 4).
Fig. 6: GC diagram of 3-methylbenzyl alcohol.
Fig. 7: GC diagram of oxidation of 3-methylbenzyl alcohol with 0.01mmol% of 4-CH₃OTEMPO, 10mmol% of PEG-NO₂, 5mmol% of HCl at 40 °C for 26h under the dioxygen balloon (Table 1, entry 5).
Fig. 8: GC diagram of 4-methylbenzyl alcohol.
Fig. 9: GC diagram of oxidation of 4-methylbenzyl alcohol with 0.01mmol% of 4-CH₃OTEMPO, 10mmol% of PEG-NO₂, 5mmol% of HCl at 40 °C for 16h under the dioxygen balloon (Table 1, entry 6).
Fig. 10: GC diagram of 4-Fluorobenzyl alcohol.
Fig. 11: GC diagram of oxidation of 4-Fluorobenzyl alcohol with 0.01mmol% of 4-CH₃OTEMPO, 10mmol% of PEG-NO₂, 5mmol% of HCl at 40 °C for 21h under the dioxygen balloon (Table 1, entry 7).
Fig. 12: GC diagram of 4-Iorobenzyl alcohol.
Fig. 13: GC diagram of oxidation of 4-Iorobenzyl alcohol with 0.01mmol% of 4-CH₃OTEMPO, 10mmol% of PEG-NO₂, 5mmol% of HCl at 40 °C for 10h under the dioxygen balloon (Table 1, entry 8).
Fig. 14: GC diagram of 2-chlorobenzyl alcohol.
Fig. 15: GC diagram of oxidation of 2-chlorobenzyl alcohol with 0.01mmol% of 4-CH₃OTEMPO, 10mmol% of PEG-NO₂, 5mmol% of HCl at 40 °C for 24h under the dioxygen balloon (Table 1, entry 9).
Fig. 16: GC diagram of 3-chlorobenzyl alcohol.
Fig. 17: GC diagram of oxidation of 3-chlorobenzyl alcohol with 0.01mmol% of 4-CH₃OTEMPO, 10mmol% of PEG-NO₂, 5mmol% of HCl at 40 °C for 21h under the dioxygen balloon(Table 1, entry 10).
Fig. 18: GC diagram of 4-chlorobenzyl alcohol.
Fig. 19: GC diagram of oxidation of 4-chlorobenzyl alcohol with 0.01mmol% of 4-CH₃OTEMPO, 10mmol% of PEG-NO₂, 5mmol% of HCl at 40 °C for 16h under the dioxygen balloon (Table 1, entry 11).
Fig. 20: GC diagram of 1-Octanol.
Fig. 21: GC diagram of oxidation of 1-Octanol with 1mmol% of 4-CH$_3$OTEMPO, 10mmol% of PEG-NO$_2$, 5mmol% of HCl at 60 °C for 12h under 0.4MPa dioxygen pressure (Table 1, entry 12).
Fig. 22: GC diagram of 2-Octanol.
Fig. 23: GC diagram of oxidation of 2-Octanol with 1mmol% of 4-CH$_3$OTEMPO, 10mmol% of PEG-NO$_2$, 5mmol% of HCl at 60 °C for 12h under 0.4MPa dioxygen pressure (Table 1, entry 13).
Fig. 24: GC diagram of iso-Octanol.
Fig. 25: GC diagram of oxidation of iso-Octanol with 1mmol% of 4-CH$_3$OTEMPO, 10mmol% of PEG-NO$_2$, 5mmol% of HCl at 60 °C for 10h under 0.4MPa dioxygen pressure (Table 1, entry 14).
Fig. 26: GC diagram of oxidation of benzyl alcohol, 0.01mmol% of 4-CH$_3$OTEMPO, 10mmol% of NO$_2$-benzyl alcohol, 5mmol% of HCl, 100mg of PEG at 40 °C for 12h under the dioxygen balloon (Table 1, entry 2).
Fig. 27: GC diagram of oxidation of benzyl alcohol, 0.01mmol% of 4-CH$_3$OTEMPO, 10mmol% of benzyl-NO$_2$ alcohol, 5mmol% of HCl at 40 °C for 12h under the dioxygen balloon (Table 1, entry 3).
Fig. 28: GC diagram of oxidation of benzyl alcohol, 0.001mmol% of 4-CH$_3$OTEMPO, 10mmol% of PEG-NO$_2$, 5mmol% of HCl at 40 °C for 84h under the dioxygen balloon.
Fig. 1 GC diagram of benzyl alcohol
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**Fig. 16 GC diagram of 3-chlorobenzyl alcohol**

Data file: D:\CHEM32\11\DATA\TAOTAO\090606\G 2009-06-06 21-15-44
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Injection Date: Sat, 6 Jun. 2009
Sample Name: 3-chlorobenzyl alcohol
Acq Operator:
Inj. No.: 3
Inj. Vol.: 0.2 µl

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Last Changed: Sun, 23 Aug. 2009, 04:59:21 pm

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Totals: 3.229e3 2.796e4

*** End of Report ***

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Instrument 1: Sun, 23 Aug. 2009, 05:00:26 pm
Page 1 of 1

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Fig. 16 GC diagram of 3-chlorobenzyl alcohol
Fig. 17 GC diagram of oxidation of 3-chlorobenzyl alcohol with 0.01mmol% of 4-CH₃OTEMPO, 10mmol% of PEG-NO₂, 5mmol% of HCl at 40 °C for 21h under the dioxygen balloon(Table 1, entry 10)
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Fig. 24 GC diagram of *iso*-Octanol

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Fig. 25. GC diagram of oxidation of iso-Octanol with 1mmol% of 4-CH₃OTEMPO, 10mmol% of PEG-NO₂, 5mmol% of HCl at 60°C for 10h under 0.4MPa dioxygen pressure (Table 1, entry 14)
Fig. 26 GC diagram of oxidation of benzyl alcohol, 0.01mmol% of 4-CH₃OTEMPO, 10mmol% of NO₂-benzyl alcohol, 5mmol% of HCl, 100mg of PEG at 40°C for 12h under the dioxygen balloon (Table 1, entry 2)
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