Electronic Supplementary Information

Ni(II)-aroylhydrazone complexes as catalyst precursors towards

efficient solvent-free nitroaldol condensation reaction

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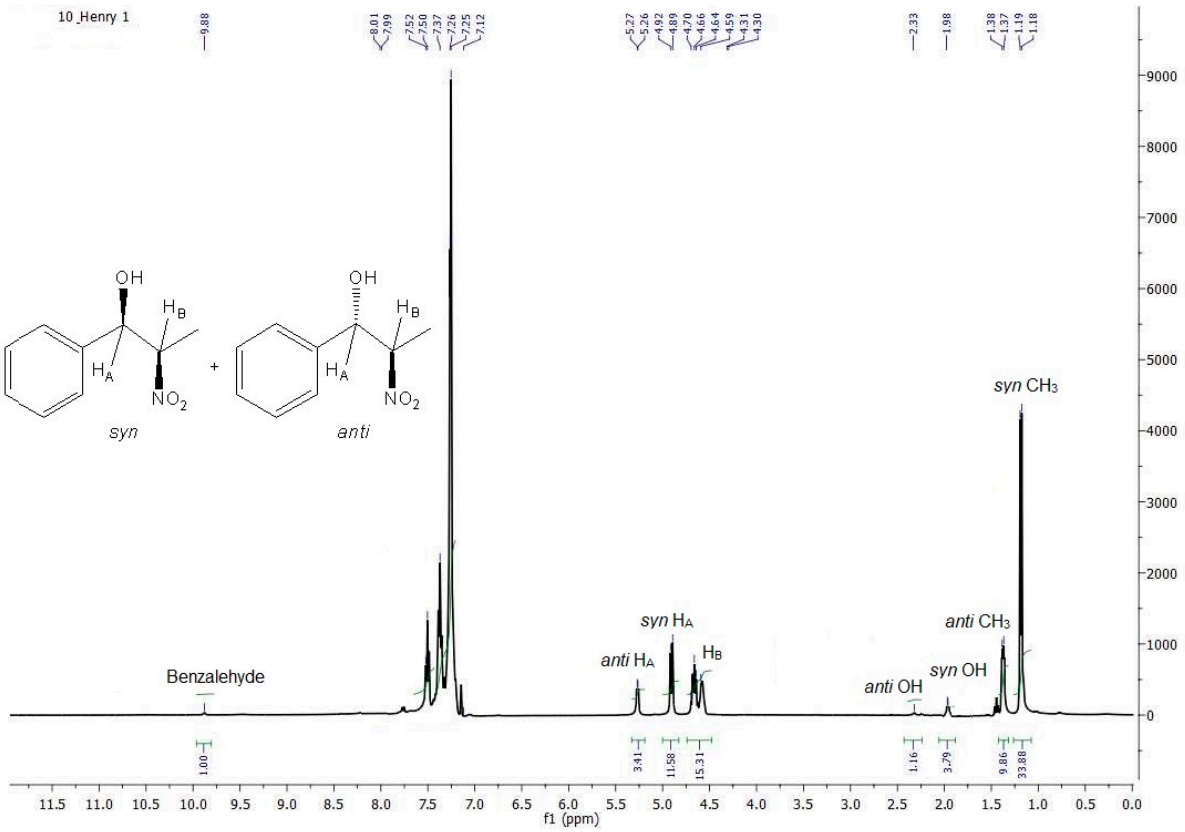
Figure S1. ^{1}H NMR spectrum for the nitroalol product of nitroethane and benzaldehyde in $CDCl_3$ (Table 3, entry 10).



^{1}H NMR spectrum for the determination of the nitroalol products (Table 3, Entry 10); ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.56-7.26 (m, 5H), 5.27 (d, J = 3.6 Hz, 3.41H) (*anti*), 4.92 (d, J = 8.8 Hz, 11.58H) (*syn*), 4.70-4.59 (m, 15.31H), 2.33 (b, 1.16H) (*anti*), 1.98 (b, 3.79H) (*syn*), 1.38 (d, J = 6.8 Hz, 9.86H) (*anti*), 1.19 (d, J = 6.8 Hz, 33.88H) (*syn*).

Calculation of the yield and selectivity

Total amount of compounds = benzaldehyde + *anti* + *syn*
= 1 + 3.4 + 11.6 = 16 (100%)
Unreacted benzaldehyde = (1/16)×100 = 6.2%
Yield of β-nitroalkanols= 100–6.2 = 94%
Yield of *syn* = (11.6/16)×100 =72.5%
Yield of *anti* = (3.4/16)×100 = 21.3%

***Selectivity*:**

(*syn* +*anti*) = 72.5+ 21.3 = 93.8 (100%).
Selectivity of *syn* = (72.5/93.8) ×100 = 77%
Selectivity of *anti* = (21.3 /93.8) ×100 = 23%

References

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3. Bulbule, V.J.; Deshpande, V.H.; Velu, S.; Sudalai, A.; Sivasankar, S.; Sathe, V.T. Heterogeneous Henry Reaction of Aldehydes: Diastereoselective Synthesis of Nitroalcohol Derivatives Over Mg-Al Hydrotalcites. *Tetrahedron*, **1999**, *55*, 9325-9332.