

Supporting Information

for

New efficient ligand for sub-mol % copper-catalyzed C–N cross-coupling reactions running under air

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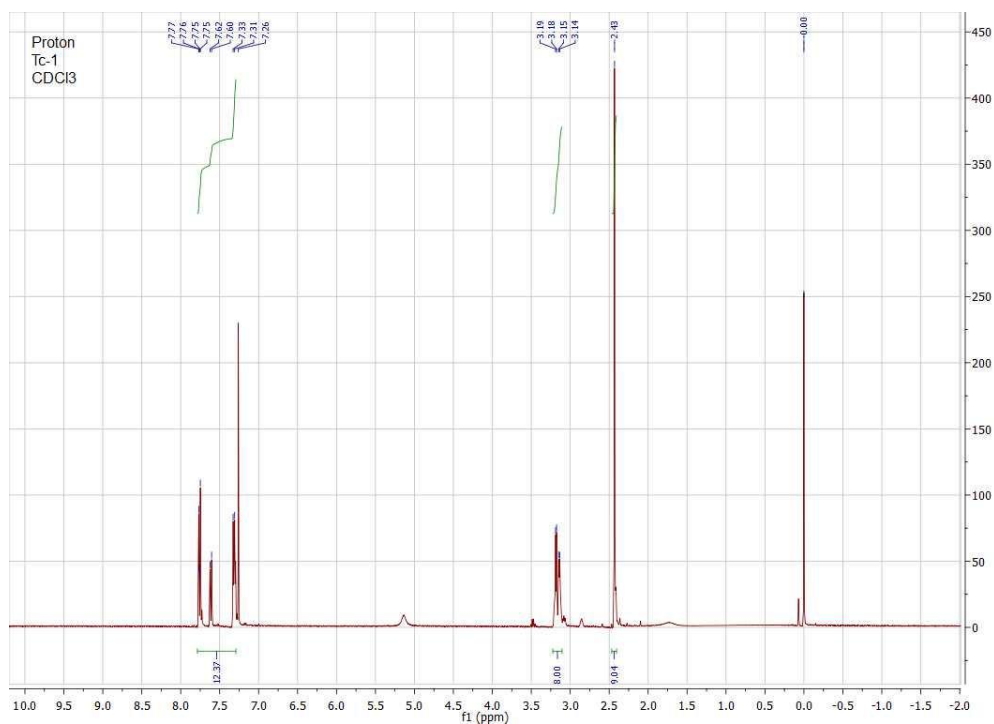
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^1H NMR and ^{13}C NMR data of compounds **1–4**.

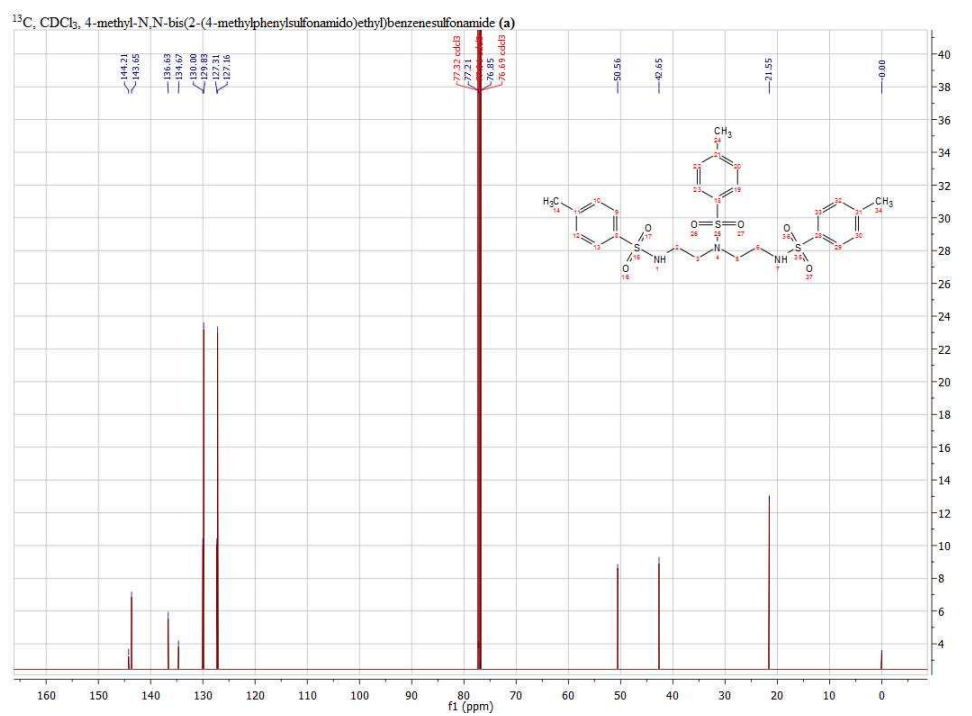
^1H NMR (400 MHz, CDCl_3):

4-Methyl-*N,N*-bis(2-(4-methylphenylsulfonamido)ethyl)benzenesulfonamide (**1**)



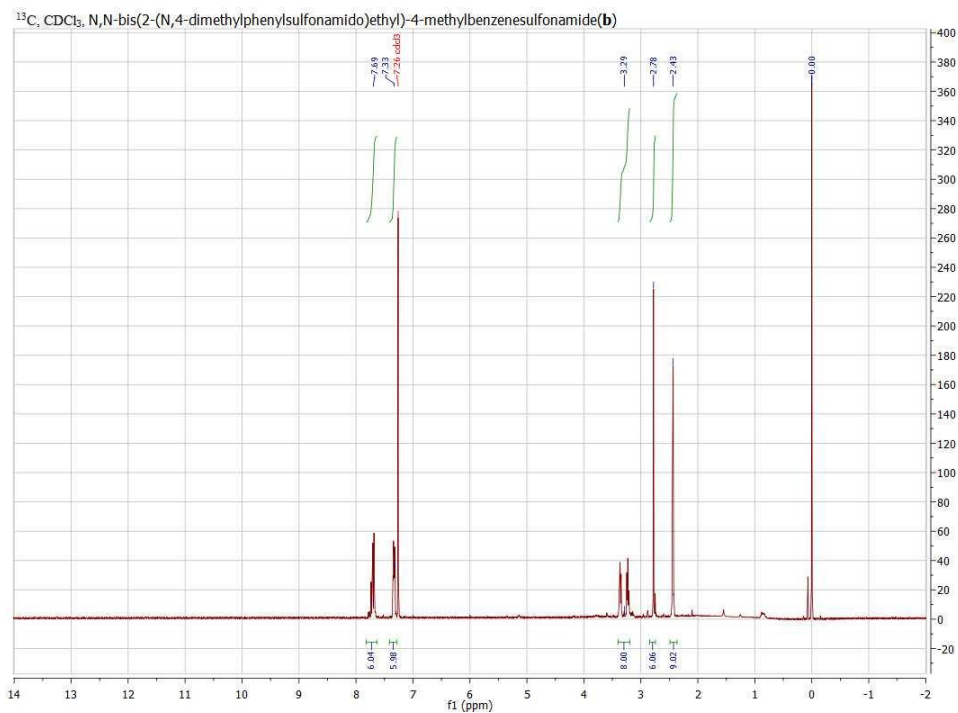
^{13}C NMR (400 MHz, CDCl_3):

4-Methyl-*N,N*-bis(2-(4-methylphenylsulfonamido)ethyl)benzenesulfonamide (**1**)



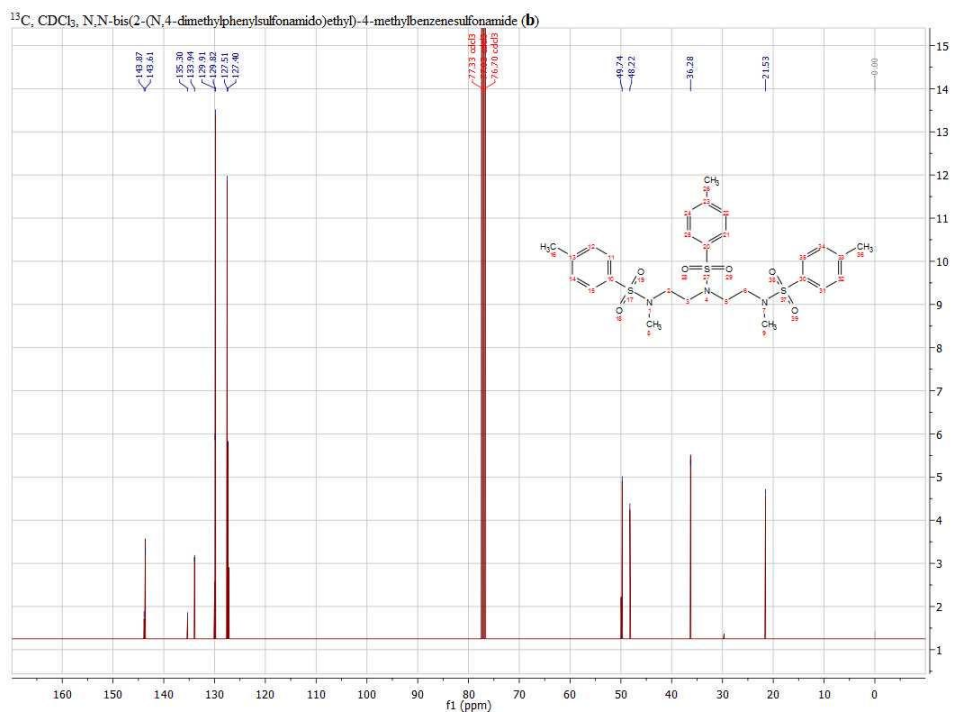
^1H NMR (400 MHz, CDCl_3):

N,N-Bis(2-(*N*,4-dimethylphenylsulfonamido)ethyl)-4-methylbenzenesulfonamide (**2**)



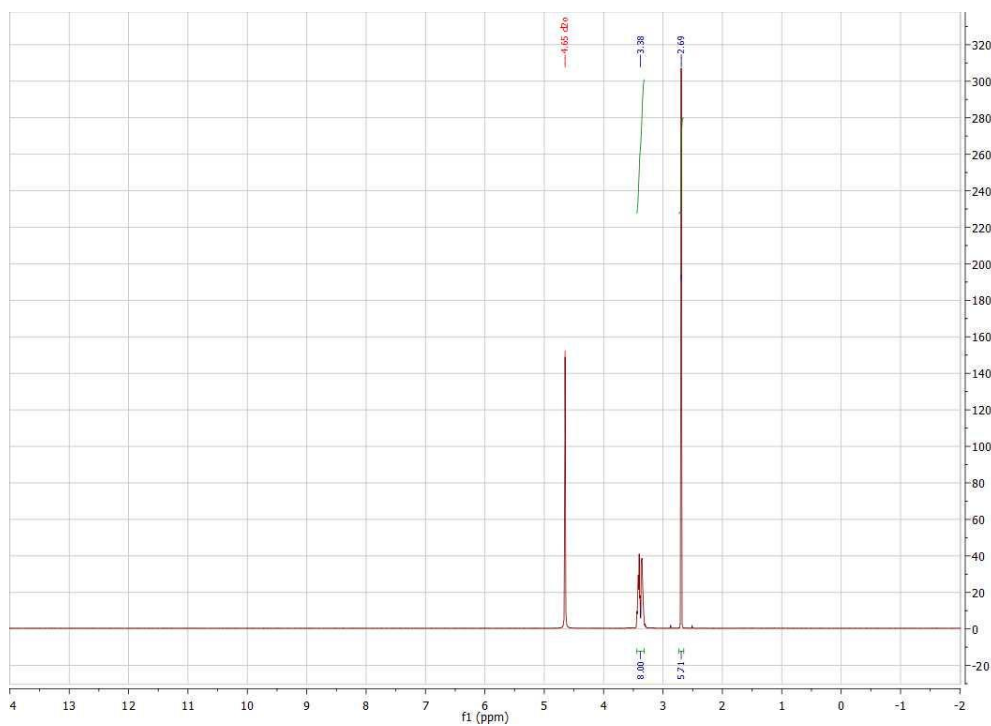
^{13}C NMR (400 MHz, CDCl_3):

N,N-Bis(2-(*N*,4-dimethylphenylsulfonamido)ethyl)-4-methylbenzenesulfonamide (**2**)



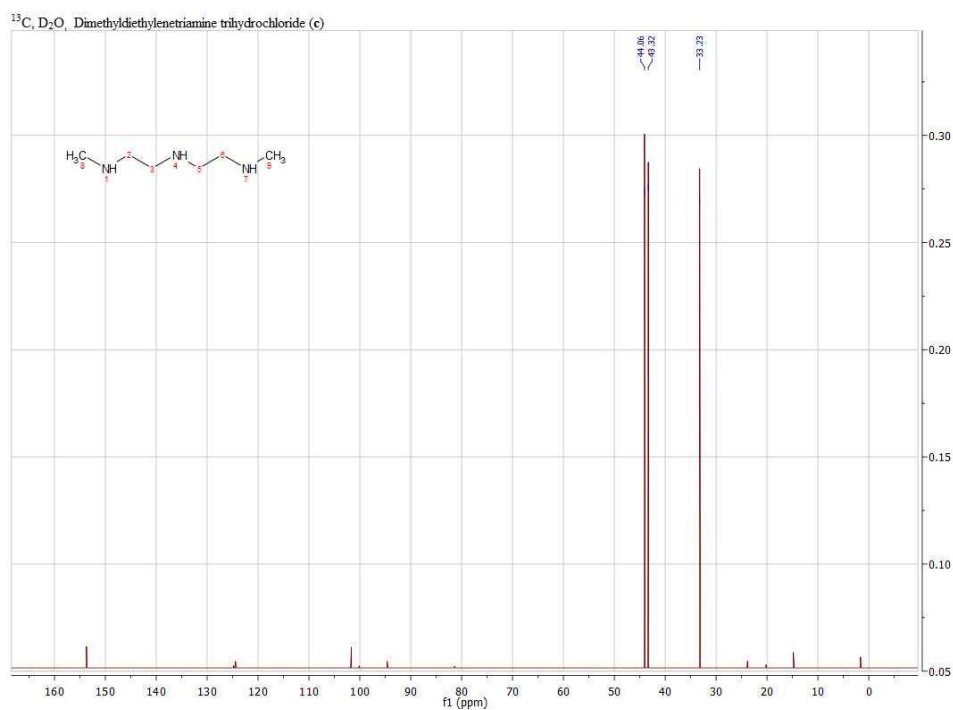
^1H NMR (400 MHz, D_2O):

N,N'-dimethyldiethylene triamine trihydrochloride (**3**)



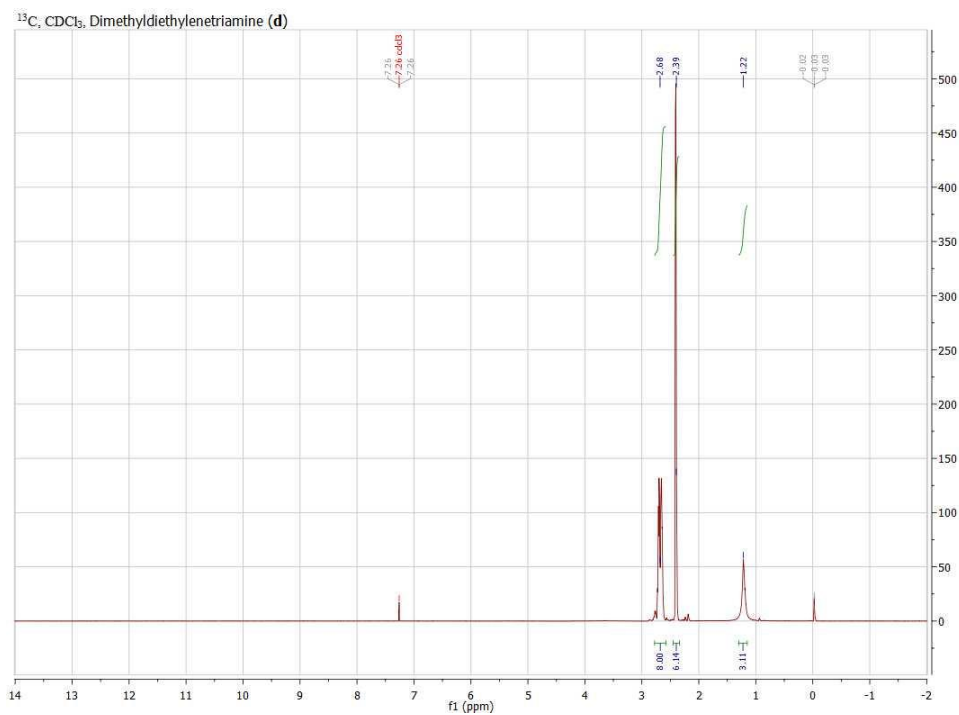
^{13}C NMR (400 MHz, D_2O):

N,N'-dimethyldiethylene triamine trihydrochloride (**3**)



^1H NMR (400 MHz, CDCl_3):

N,N'-dimethyldiethylene triamine (**4**)



^{13}C NMR (400 MHz, CDCl_3):

N,N'-dimethyldiethylene triamine (**4**)

