Electronic Supplementary Material (ESI) for Green Chemistry
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Electronic Supplementary Information

Catalytic decarbonylation of biomass-derived carboxylic acids as an efficient route to commodity monomers

Maria O. Miranda, Agostino Pietrangelo, Marc A. Hillmyer and William B. Tolman

Department of Chemistry and Center for Sustainable Polymers, University of Minnesota, 207 Pleasant St. SE, Minnneapolis, MN 55455-0431, USA. Fax: 612-626-8659; Tel: 612-625-4061; E-mail: hillmyer@umn.edu, wtolman@umn.edu

GC-MS yields were calculated as follows; representative GC traces are included as Figures S1-S5 to illustrate typical results. A solution containing a known mass of the isolated distillate was injected on the GC-MS instrument. Each trace was analyzed using the Agilent GC/MSD ChemStation Software package and the area under the each peak of interest in the trace was determined. Previously generated standard curves were used to determine the concentration and mass ratio of each component in the mixture from the peak areas. The percent yield was calculated using these determined mass ratios compared to the total mass of distillate collected. The yields were calculated from averages of multiple (3-5) GC-MS runs.

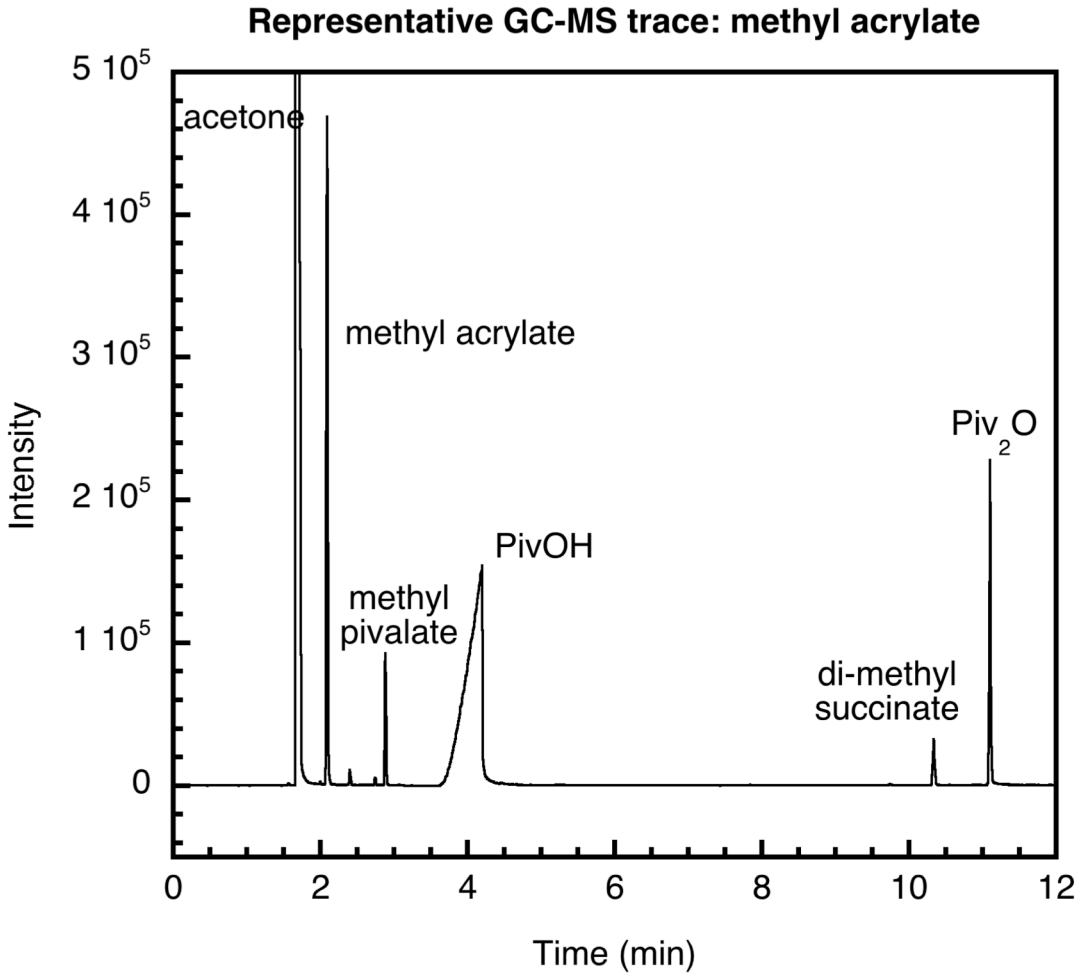

Figure S1. Representative GC-MS trace of distillate mixture using mono-methyl succinate as the substrate and PPh_3 as the ligand.

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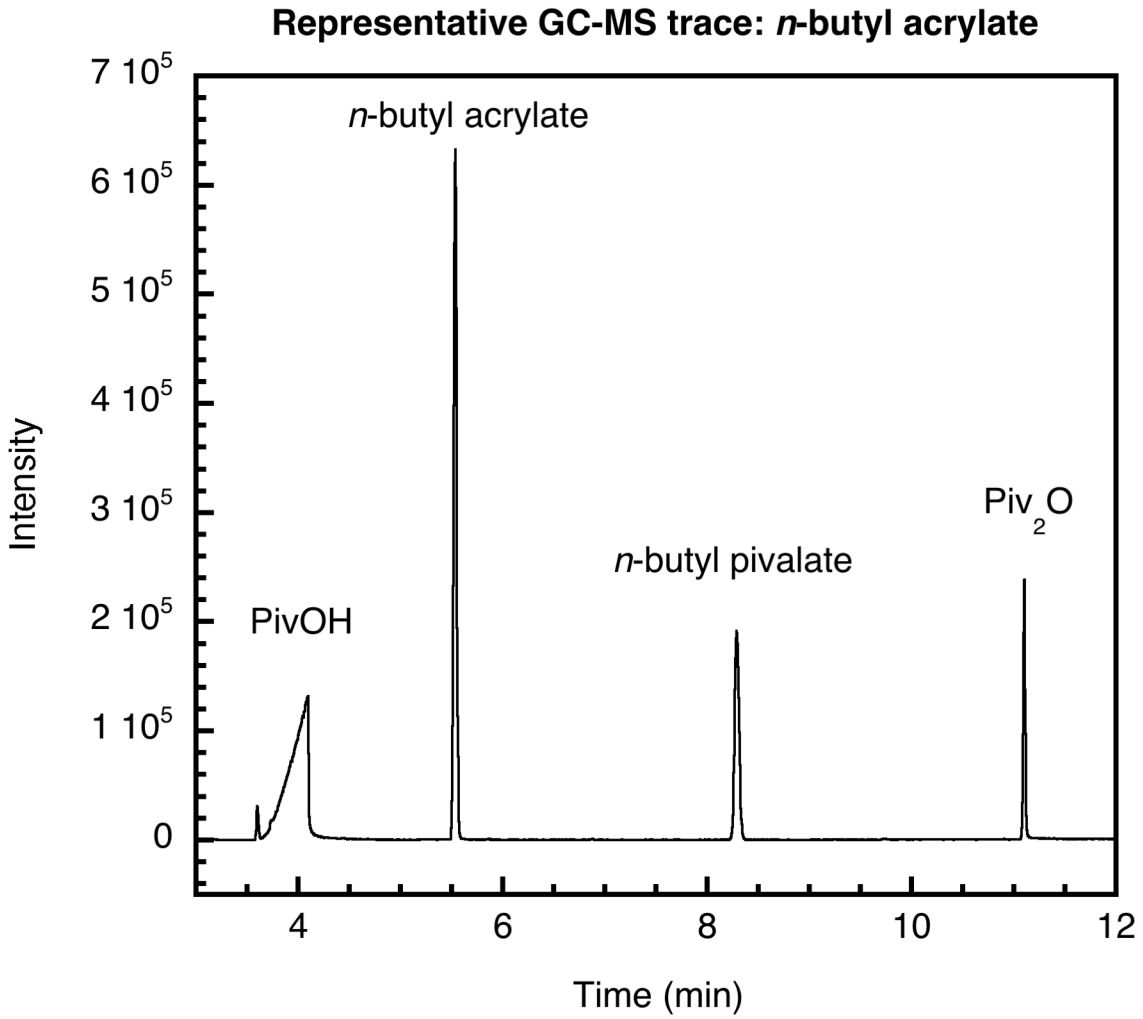

Figure S2. Representative GC-MS trace of distillate mixture using mono-*n*-butyl succinate as the substrate and DPEphos as the ligand.

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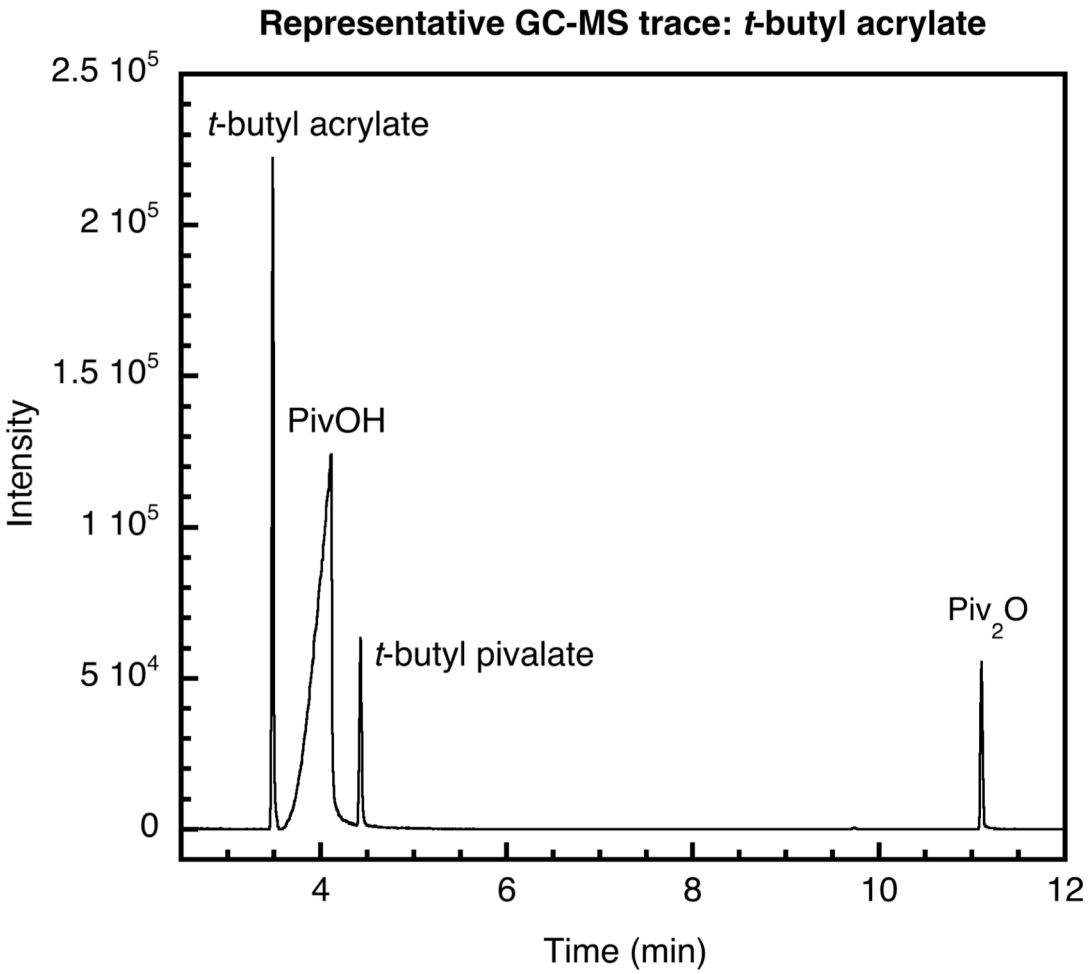

Figure S3. Representative GC-MS trace of distillate mixture using mono-*t*-butyl succinate as the substrate and DPEphos as the ligand.

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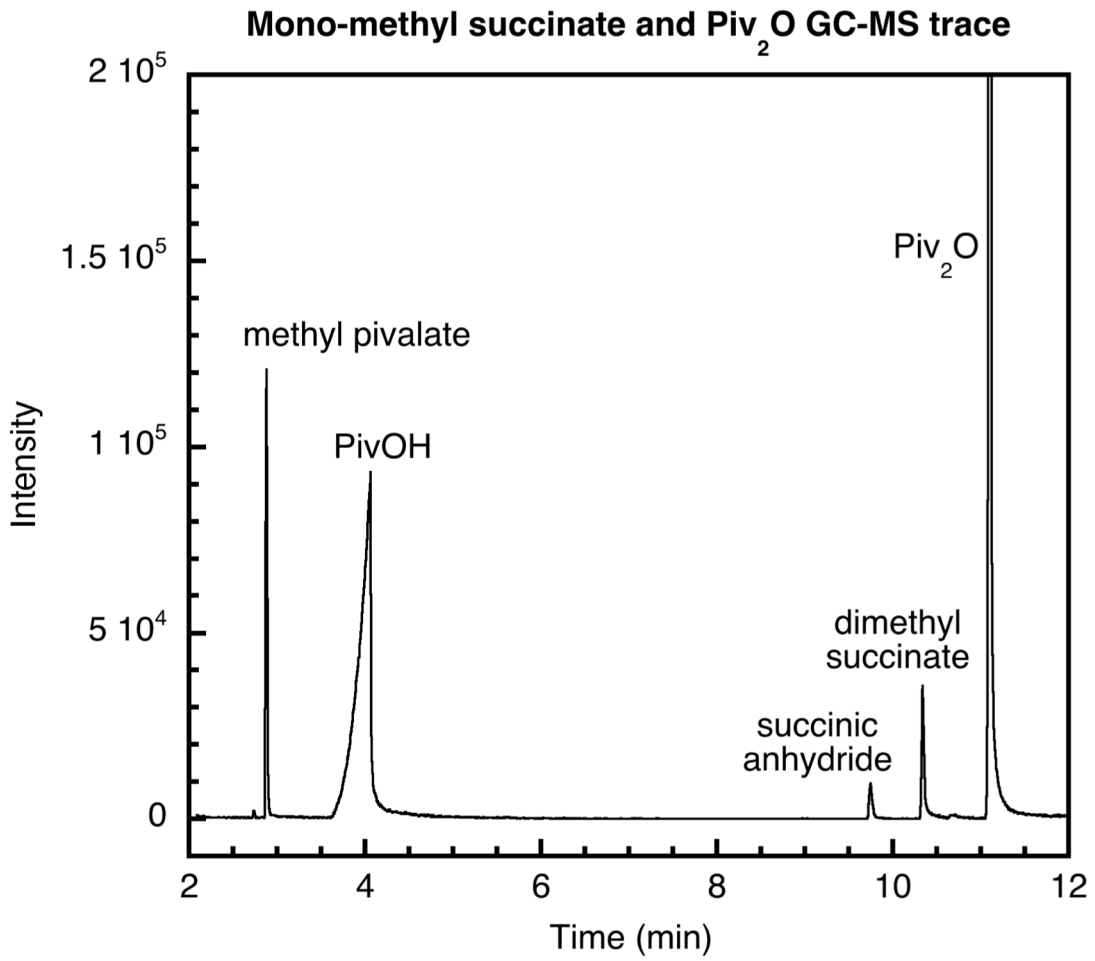

Figure S4. GC-MS trace of the sealed reaction between mono-methyl succinate and pivalic anhydride at 190 °C for 2 hours.

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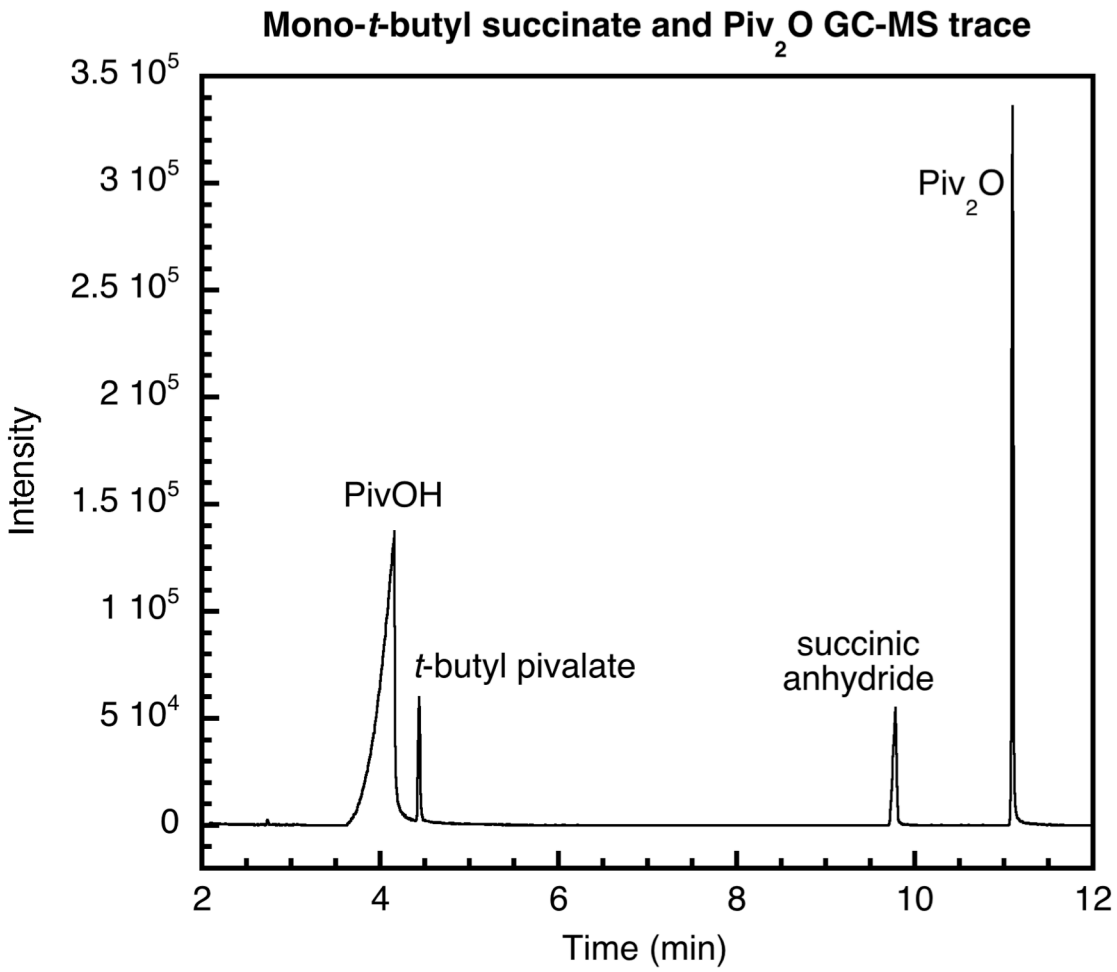

Figure S5. GC-MS trace of the sealed reaction between mono-*t*-butyl succinate and pivalic anhydride at 190 °C for 2 hours.

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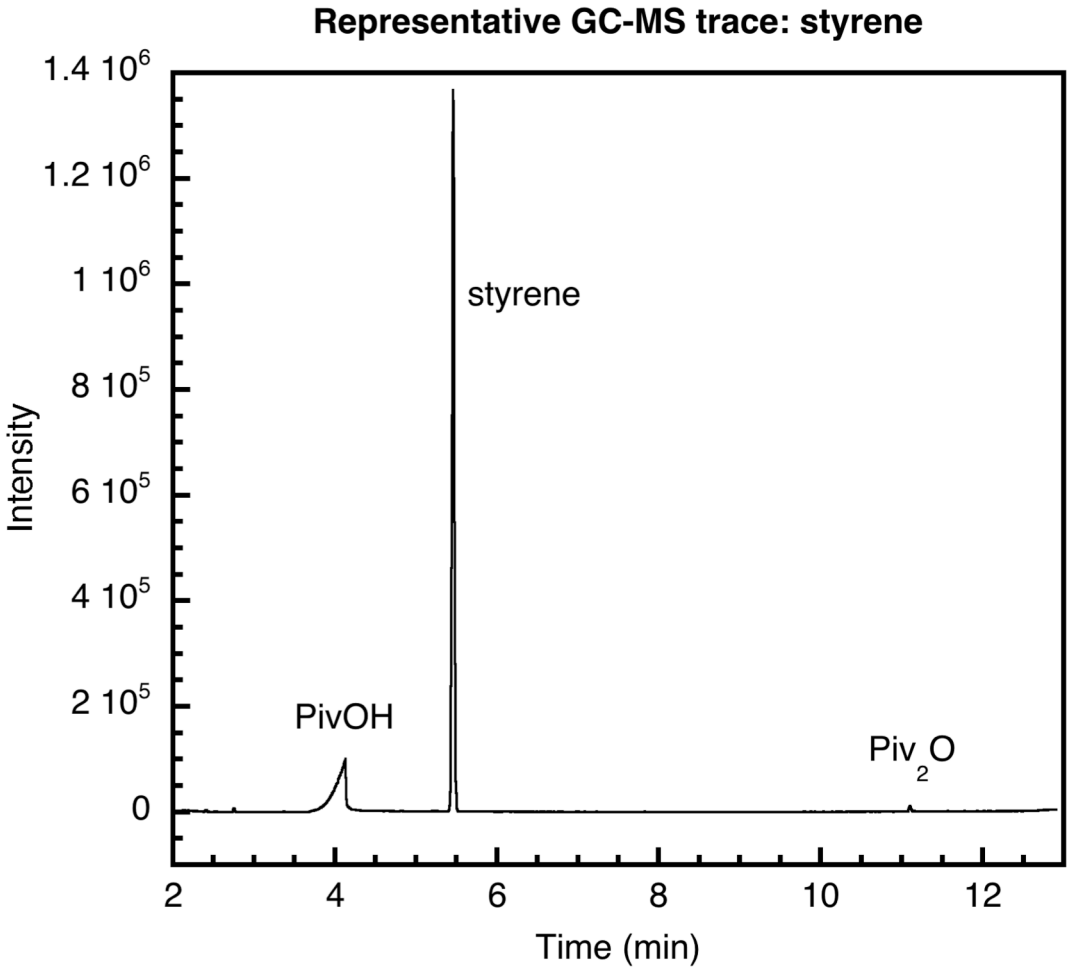

Figure S6. Representative GC-MS trace of distillate mixture using hydrocinnamic acid as the substrate and DPEphos as the ligand.

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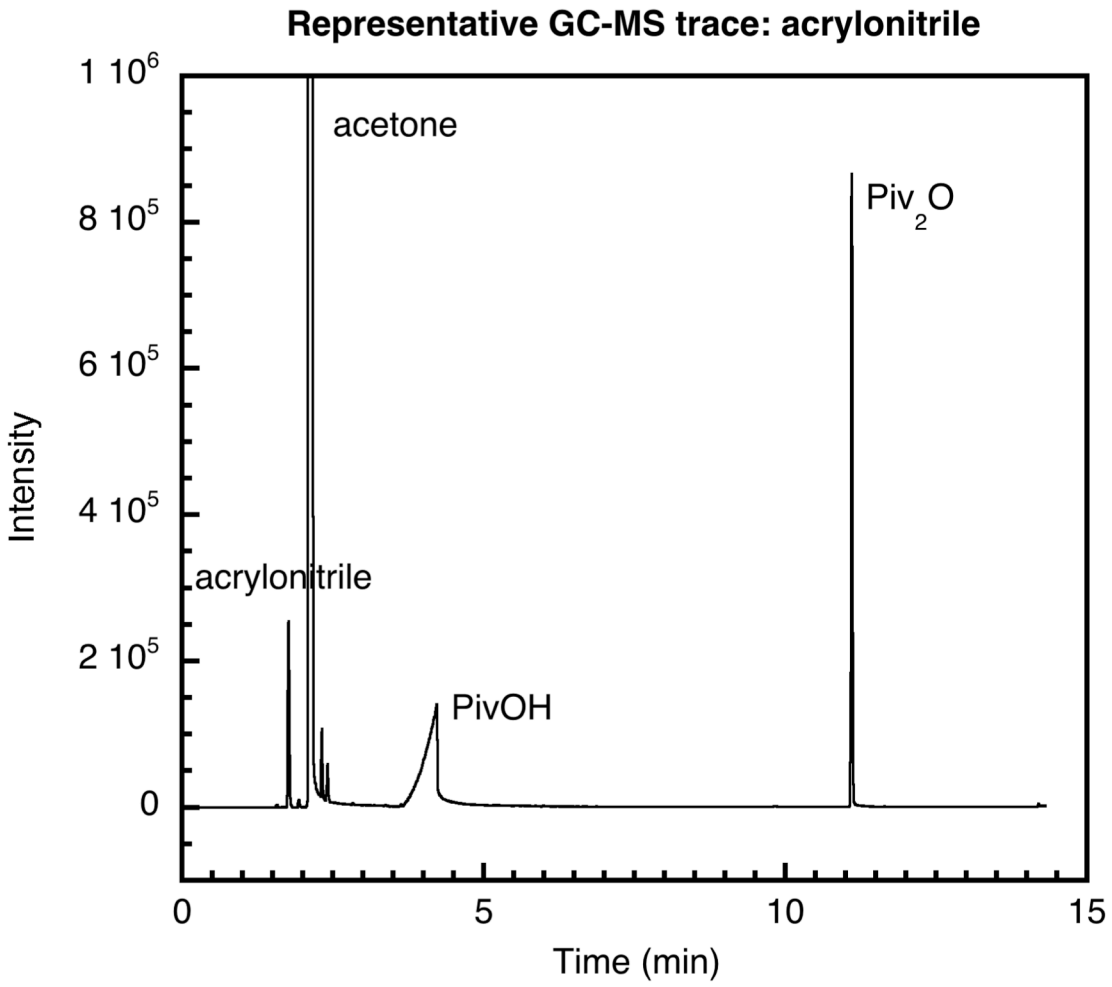

Figure S7. Representative GC-MS trace of distillate mixture using 3-cyanopropanoic acid as the substrate and PPh_3 as the ligand.