Support Information for:

A transition-metal-free catalytic reduction of benzylic alcohols, alkenes and *N*-formylation of nitroarenes mediated by iodide ion and formic acid

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The authors contribute equally

1. GC and GC-MS data

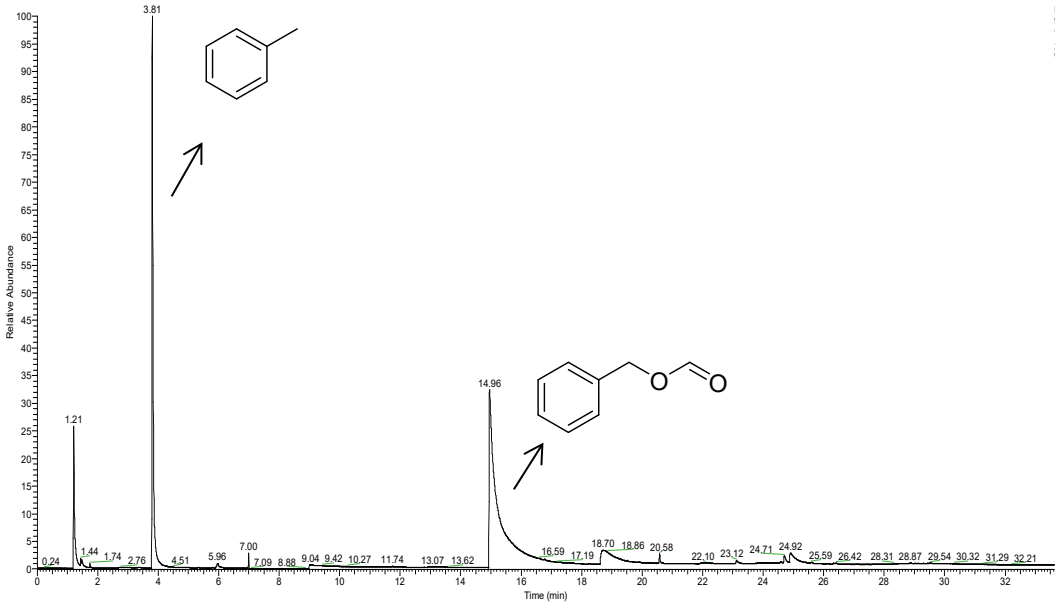

Figure S1. GCMS picture of benzyl alcohol hydrogen transfer reaction product. Reaction Condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 mL Toluene, 600 rpm, 180 °C, 6 h, purging nitrogen for three times.

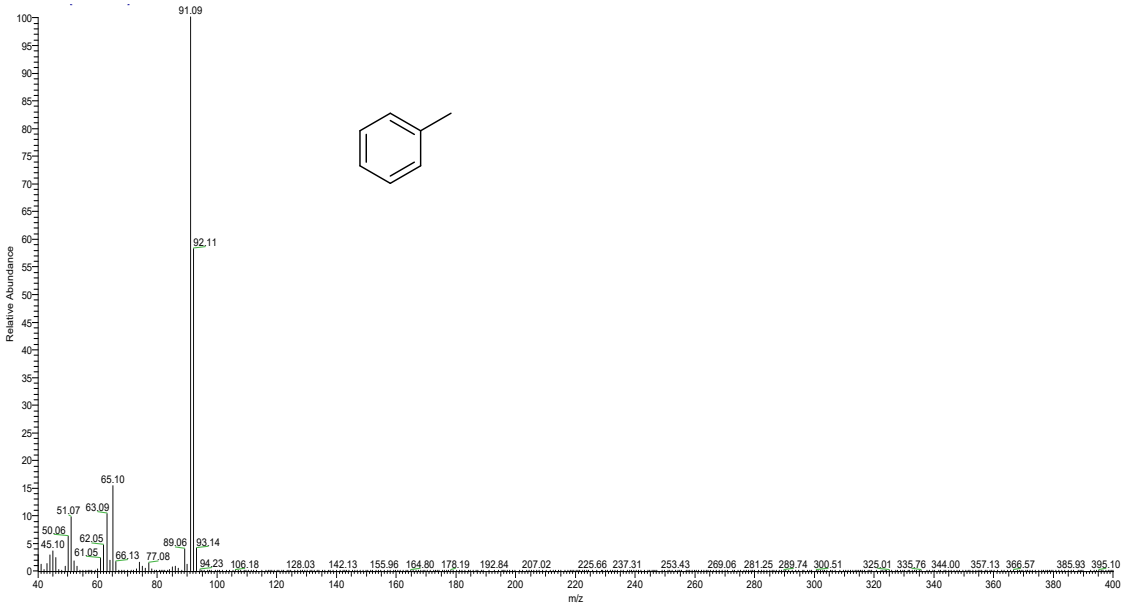

Figure S2. Toluene GCMS fragment peak graph.

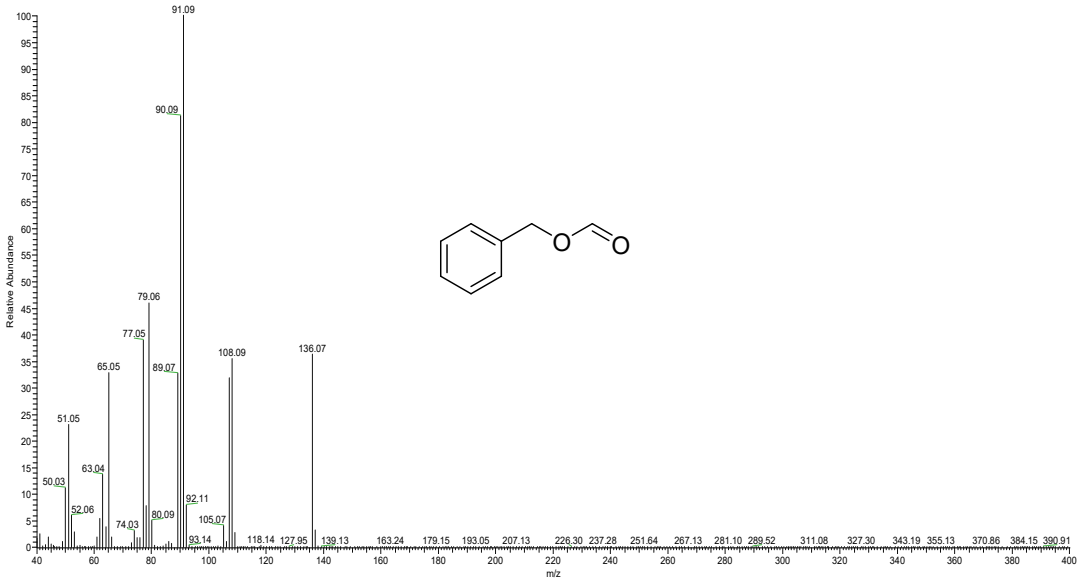

Figure S3. Benzyl formate GCMS fragment peak graph.

Figure S4. GCMS picture of 2-ethylbenzyl alcohol hydrogen transfer reaction product. Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

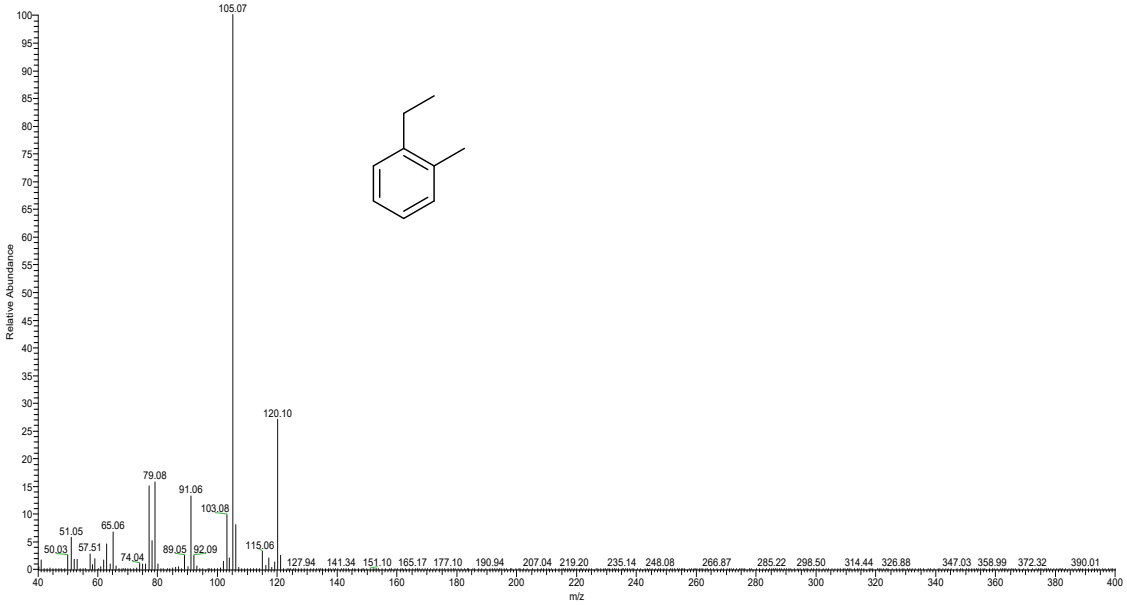

Figure S5. 2-Ethyltoluene GCMS fragment peak graph.

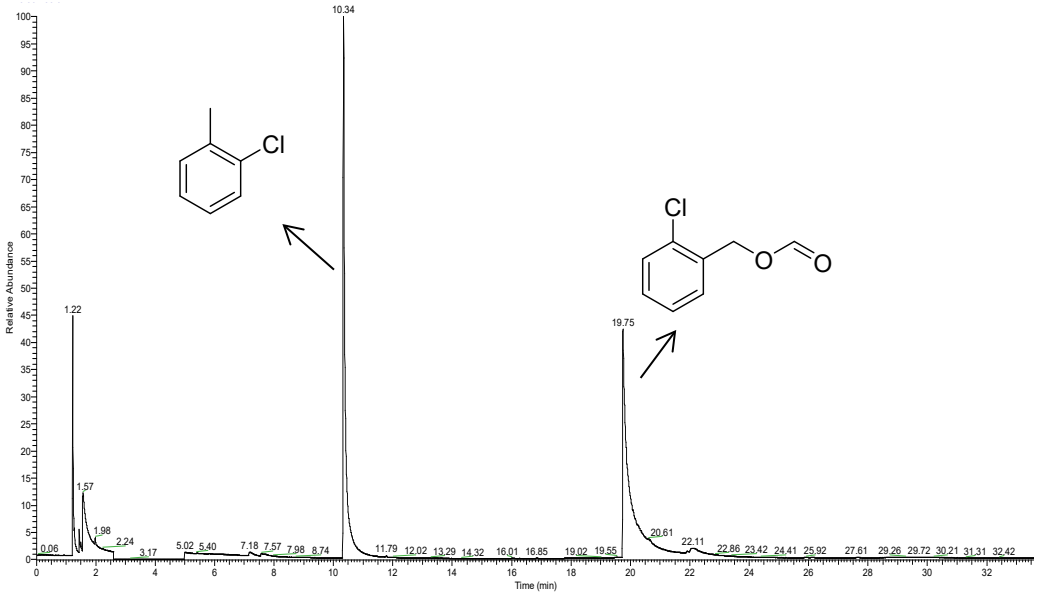

Figure S6. GCMS picture of 2-chorobenzyl alcohol hydrogen transfer reaction product. Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

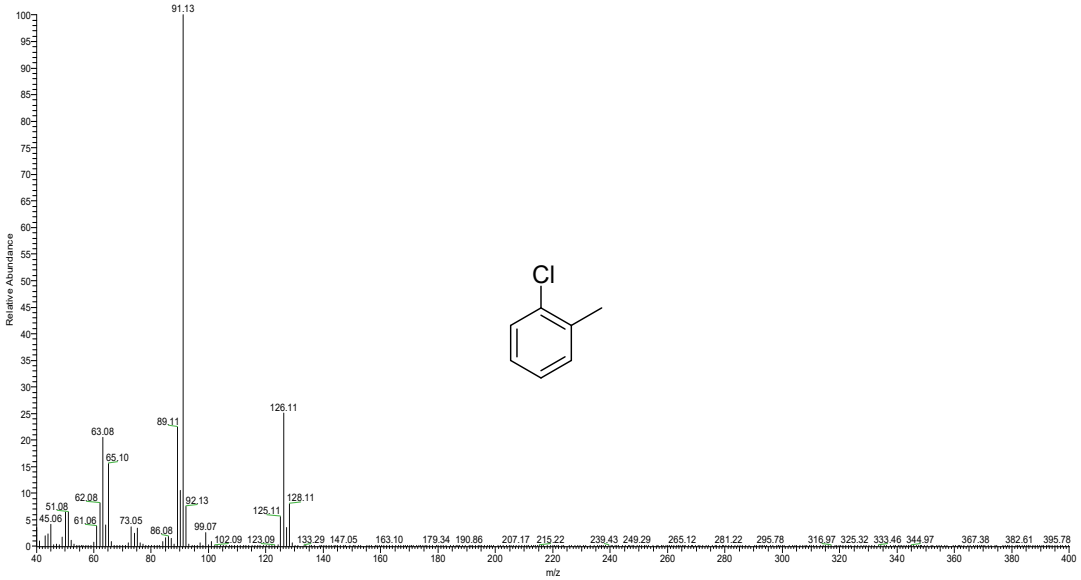

Figure S7. 2-Chlorotoluene GCMS fragment peak graph.

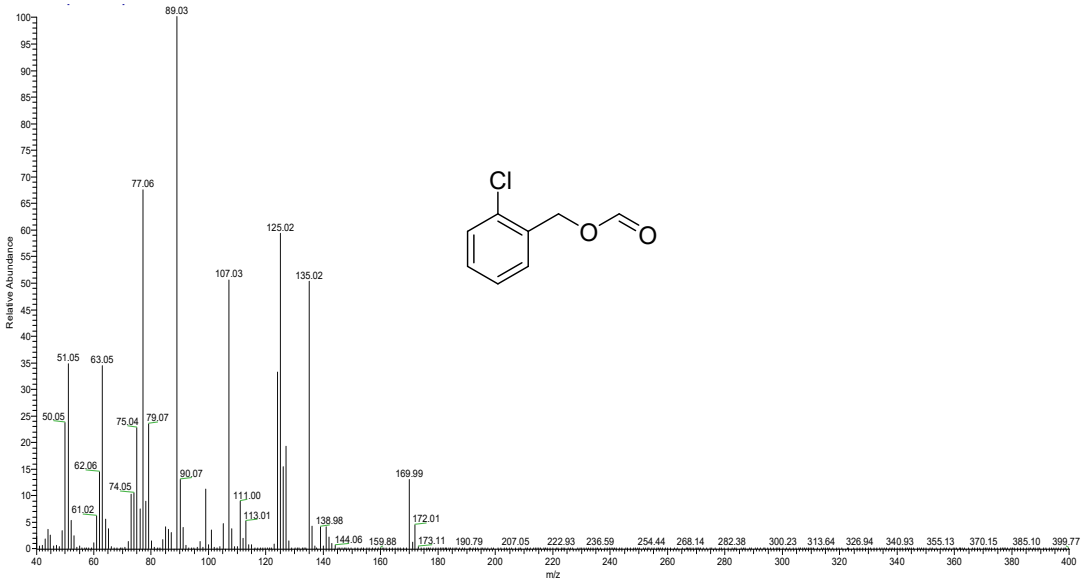

Figure S8. (2-Chlorophenyl)methyl formate GCMS fragment peak graph.

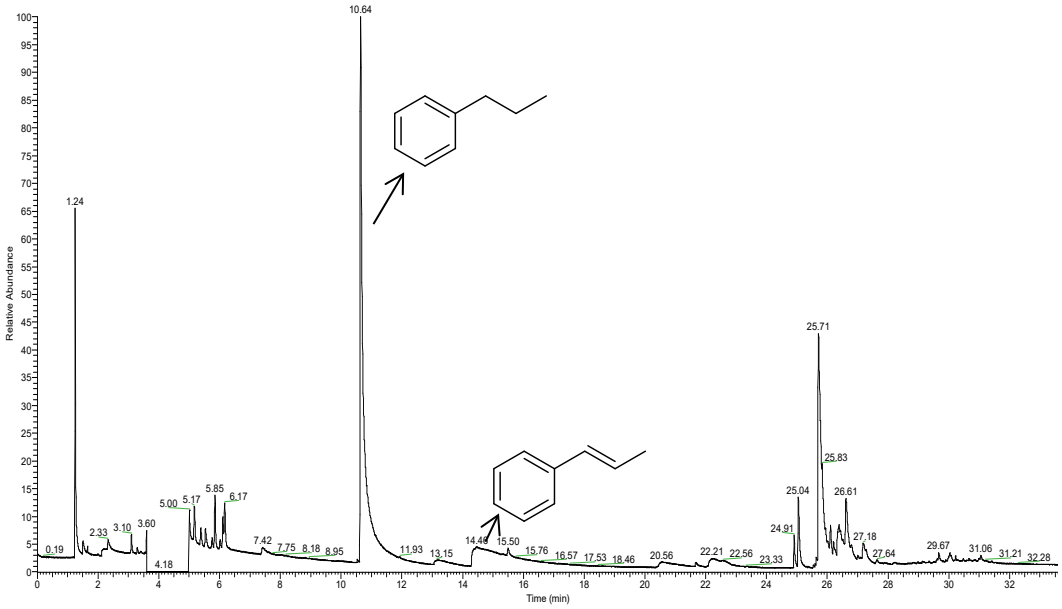

Figure S9. GCMS picture of cinnamyl alcohol hydrogen transfer reaction product.

Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

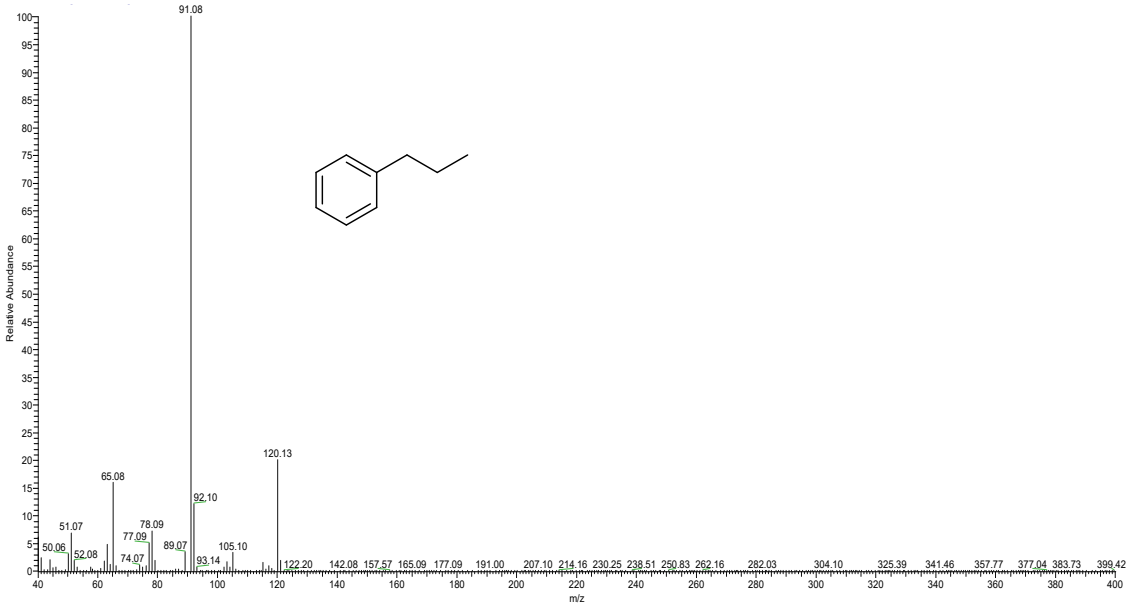

Figure S10. n-propylbenzene GCMS fragment peak graph.

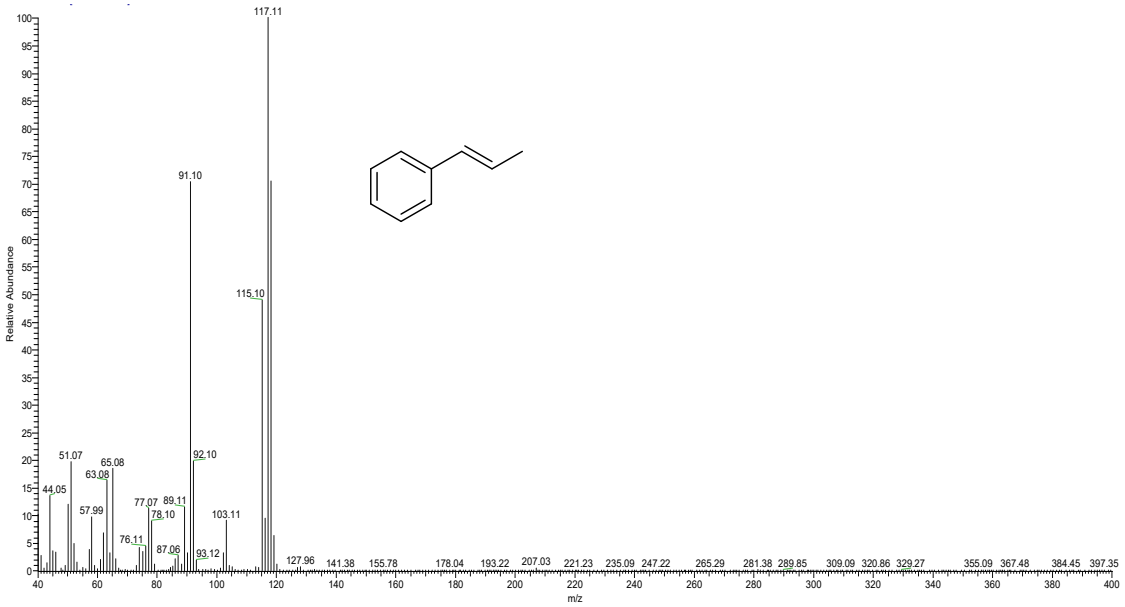

Figure S11. β-methylstyrene GC fragment peak graph.

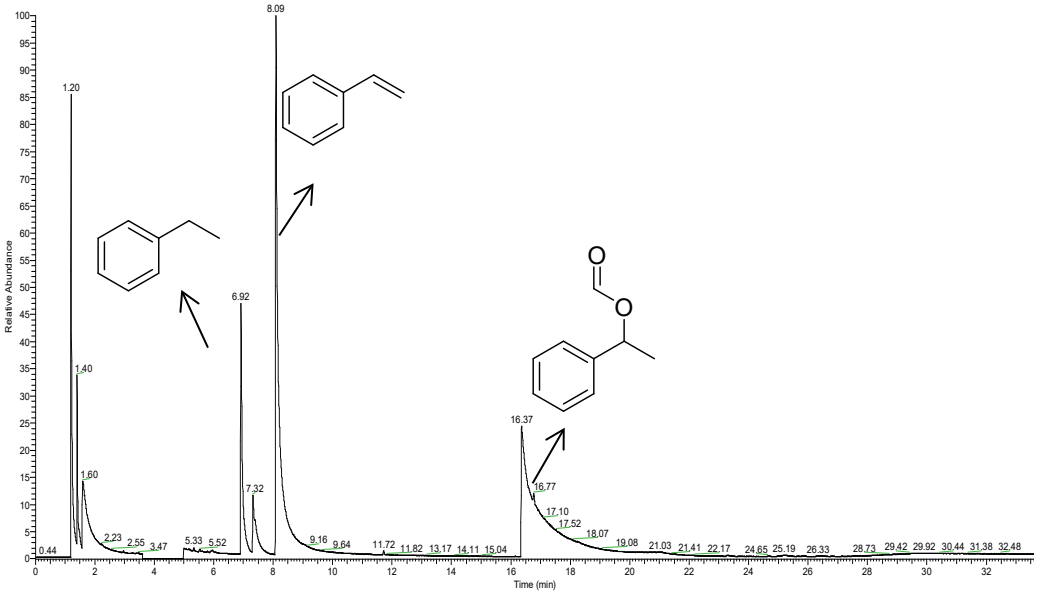

Figure S12. GCMS picture of 1-phenylethanol hydrogen transfer reaction product. Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

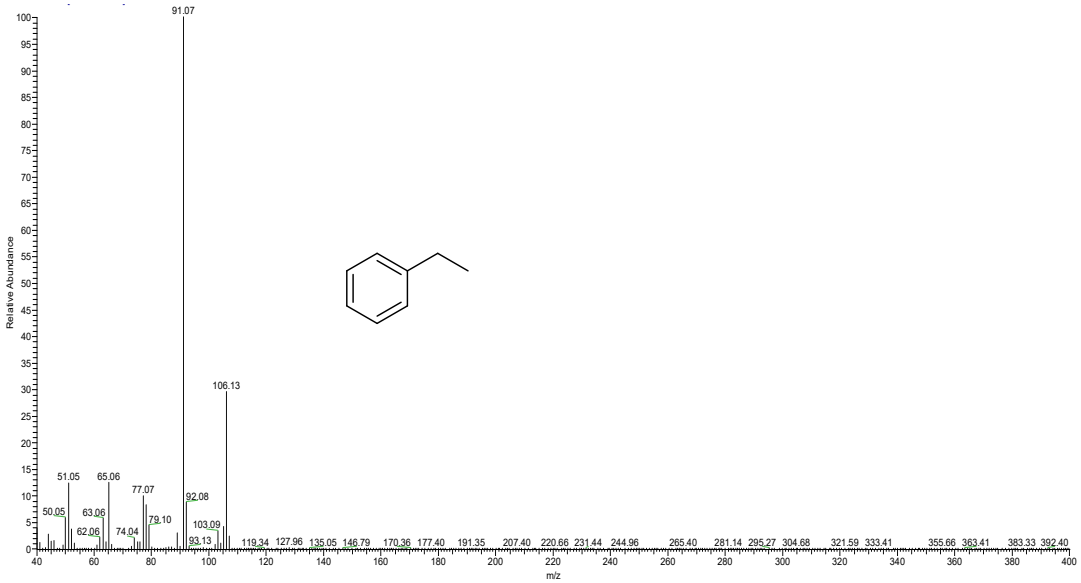

Figure S13. Ethylbenzene GCMS fragment peak graph.

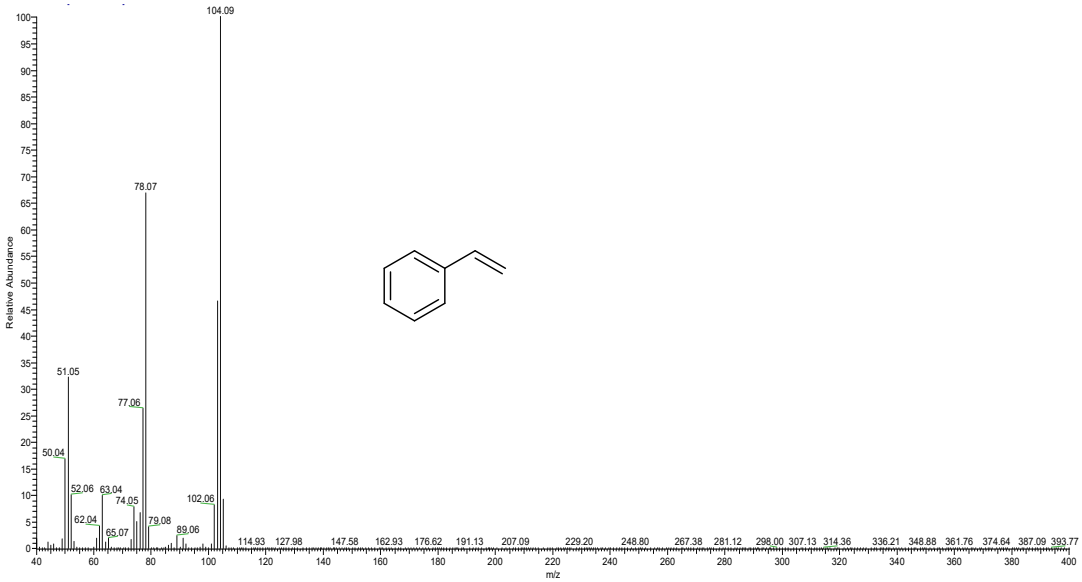

Figure S14. Styrene GCMS fragment peak graph.

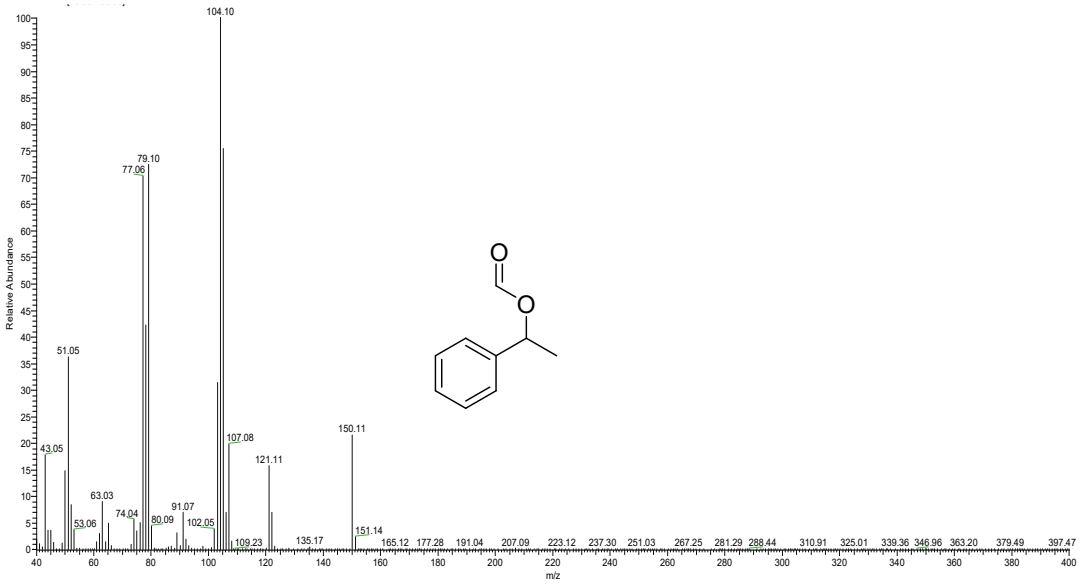

Figure S15. 1-Phenylethyl formate GCMS fragment peak graph.

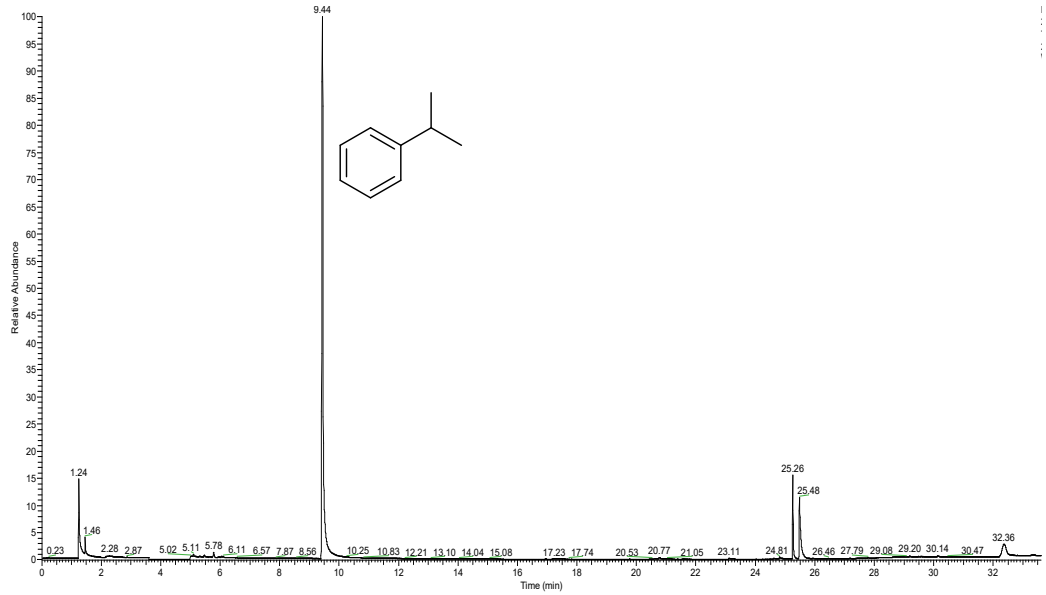

Figure S16. GCMS picture of 2-phenyl-propan-2-ol hydrogen transfer reaction product. Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 °C, 10 min, purging nitrogen for three times.

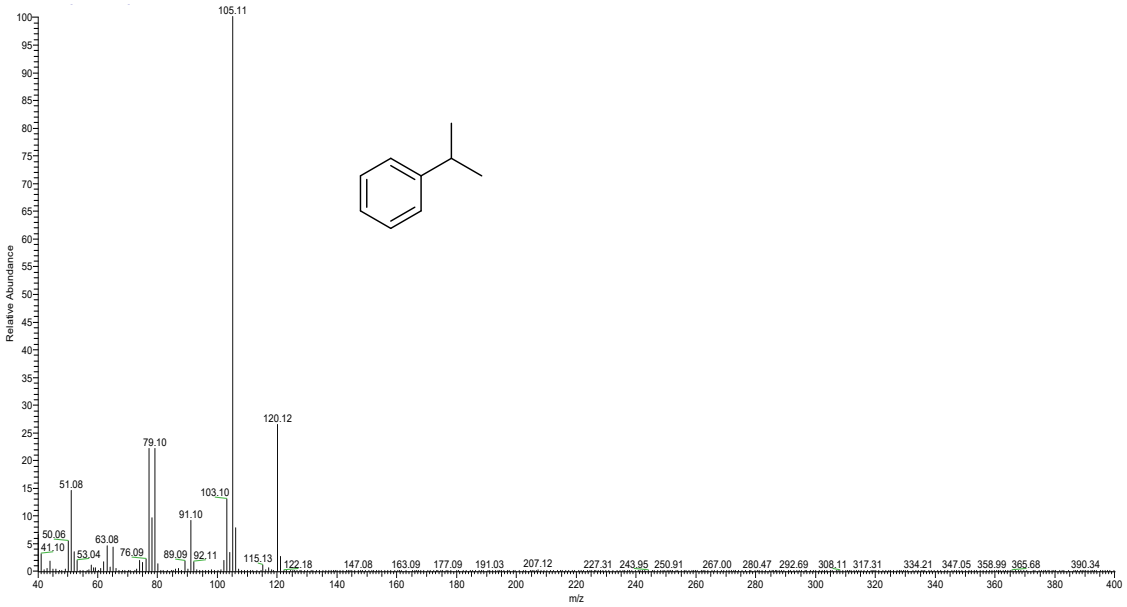

Figure S17. Isopropylbenzene GCMS fragment peak graph.

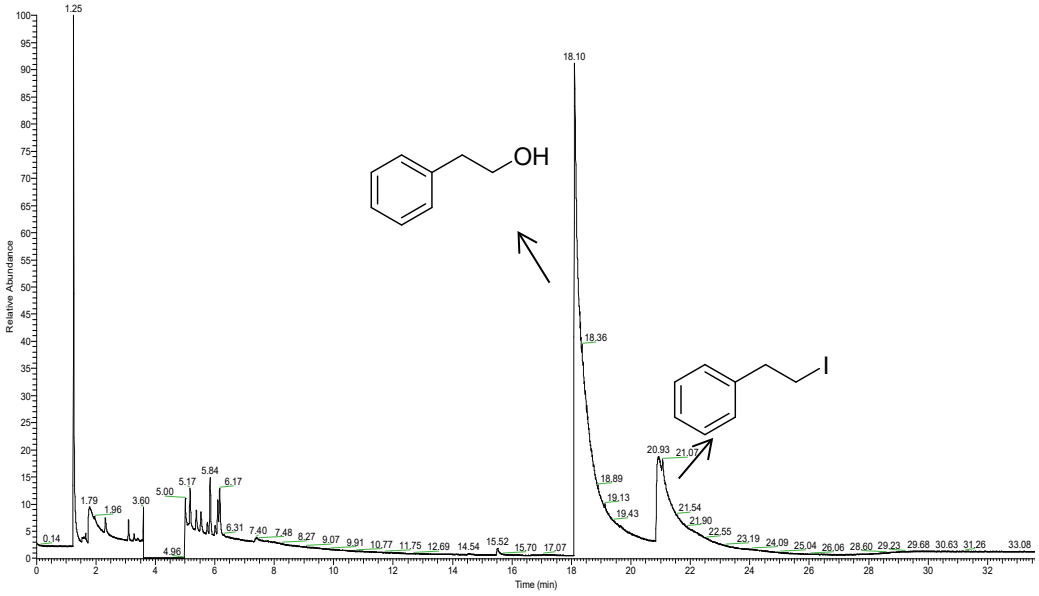

Figure S18. GCMS picture of 2-phenethyl alcohol hydrogen transfer reaction product. Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 °C, 10 min, purging nitrogen for three times.

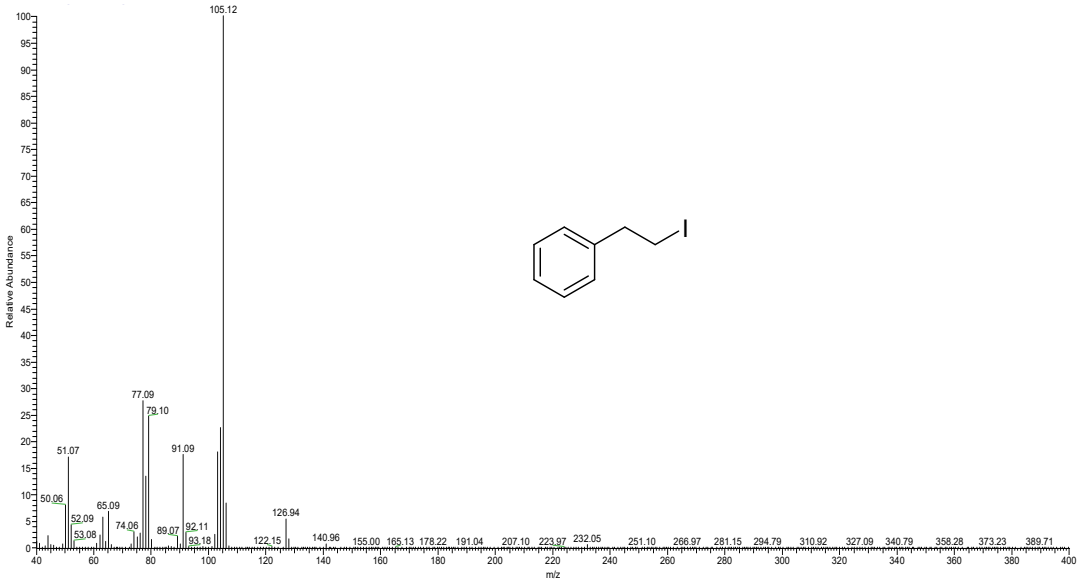

Figure S19. 2-(Iodoethyl)benzene GCMS fragment peak graph

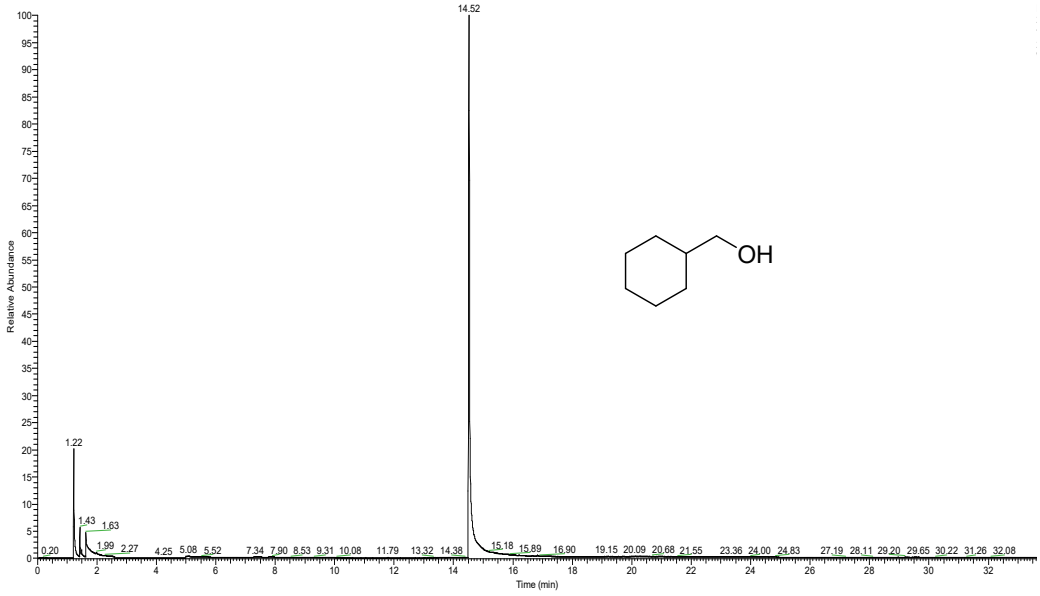

Figure S20. GCMS picture of cyclohexylmethanol hydrogen transfer reaction product. Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

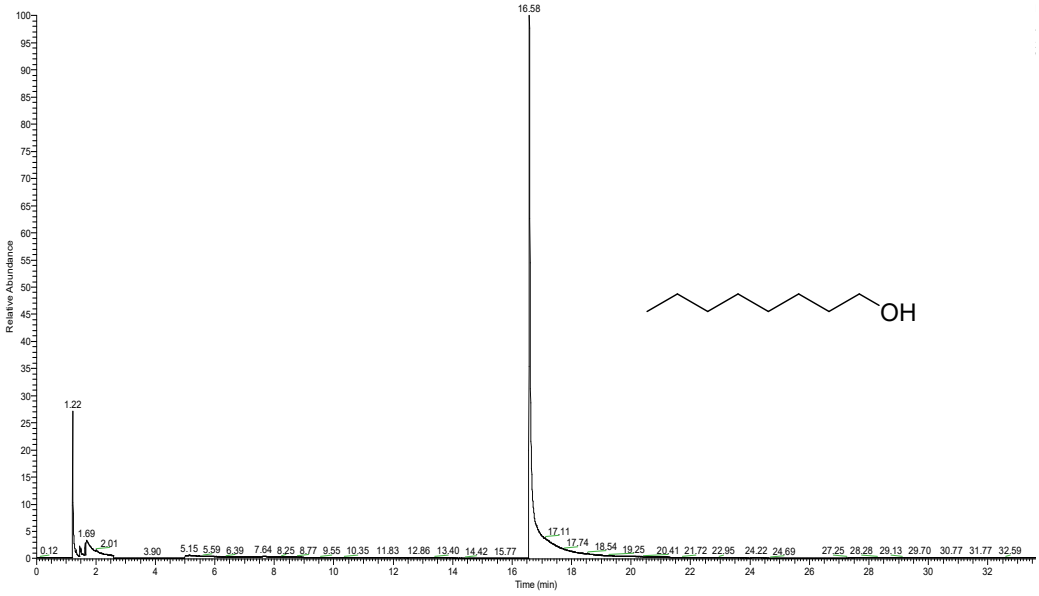

Figure S21. GCMS picture of 1-octanol alcohol hydrogen transfer reaction product.

Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

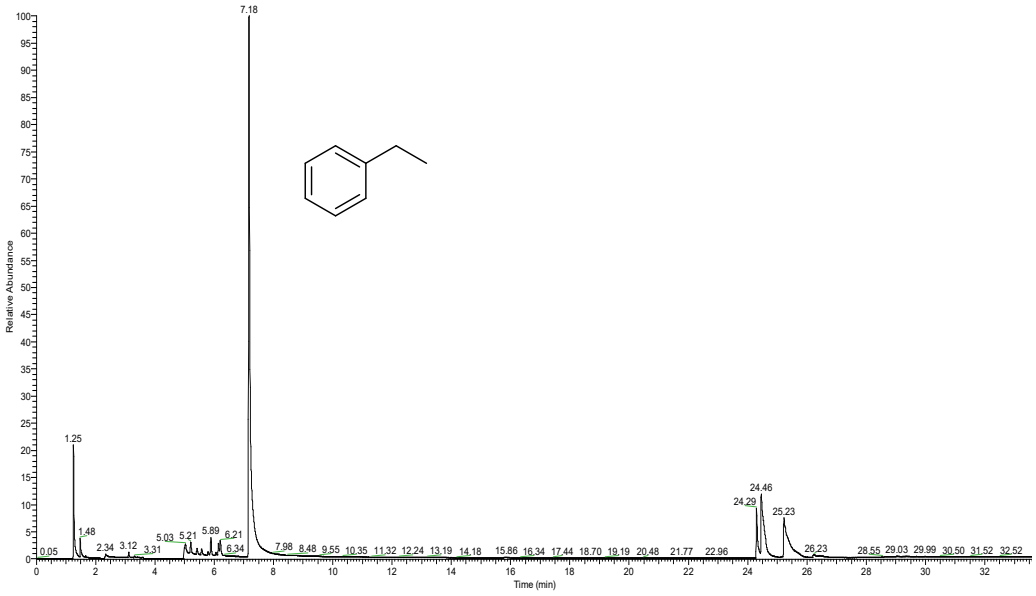

Figure S22. GCMS picture of styrene hydrogen transfer reaction product.

Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

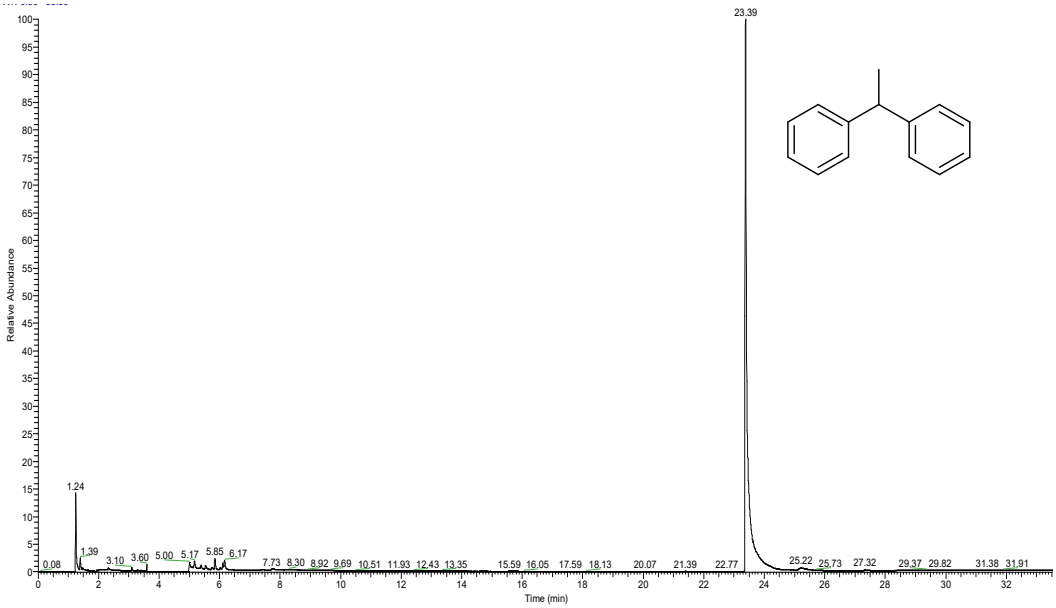

Figure S23. GCMS picture of 1,1-diphenylethylene hydrogen transfer reaction product. Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 °C, 10 min, purging nitrogen for three times.

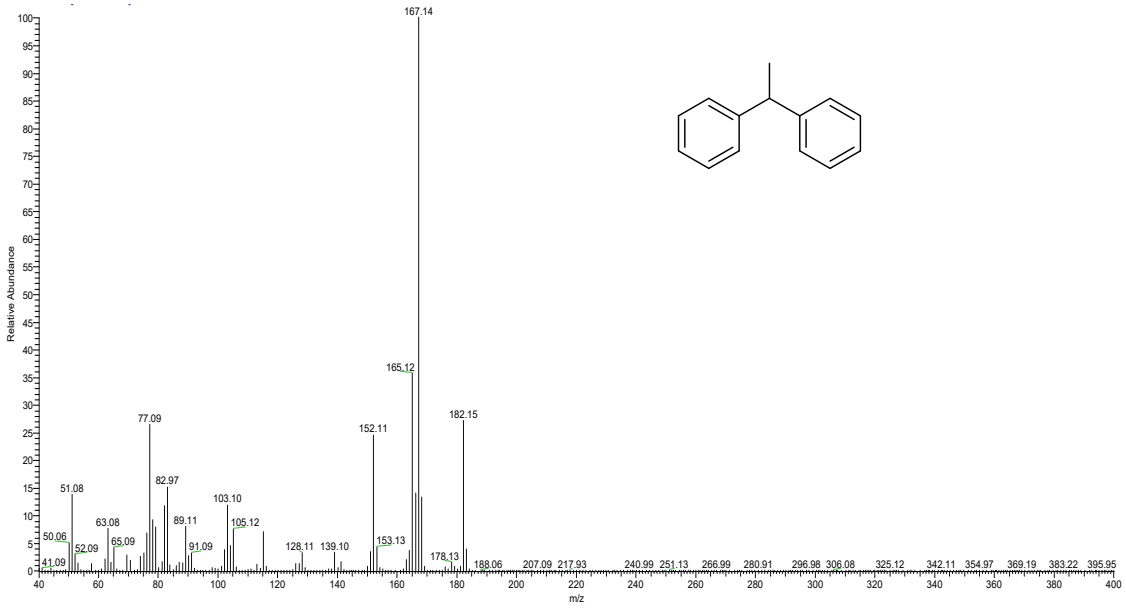

Figure S24. 1,1-Diphenylethane GCMS fragment peak graph.

Figure S25. GCMS picture of trans-stilbene hydrogen transfer reaction product.

Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

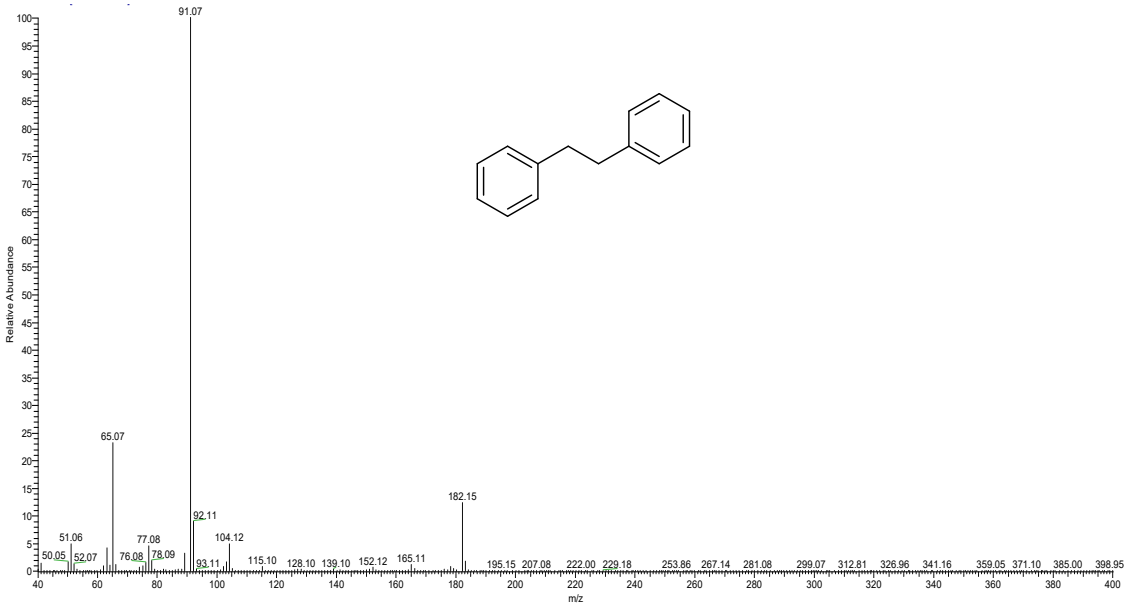

Figure S26. 1,2-Diphenylethane GCMS fragment peak graph.

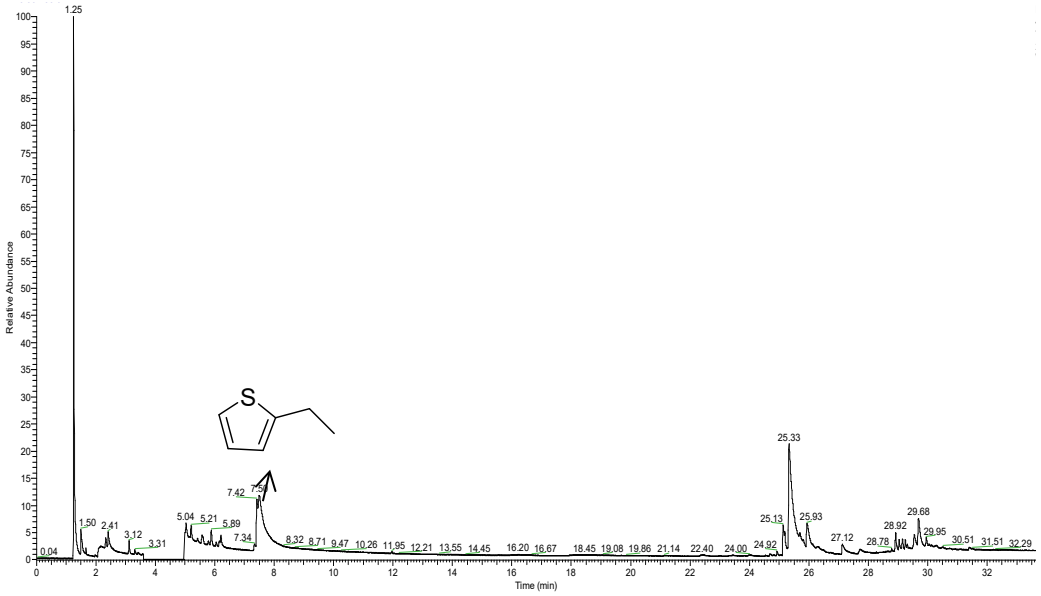

Figure S27. GCMS picture of 2-vinylthiophene hydrogen transfer reaction product.

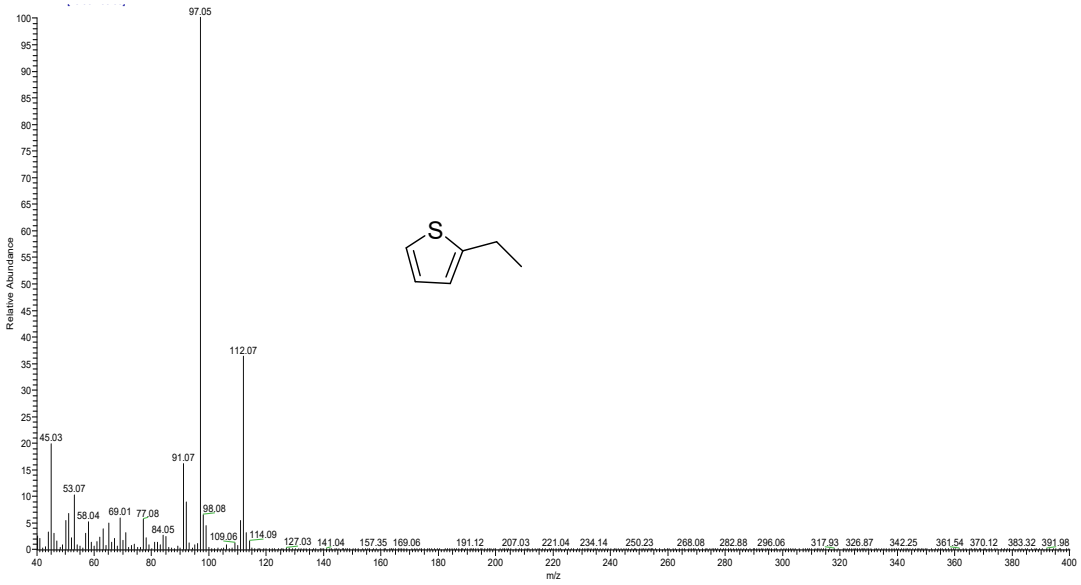

Figure S28. 2-Ethylthiophene GCMS fragment peak graph.

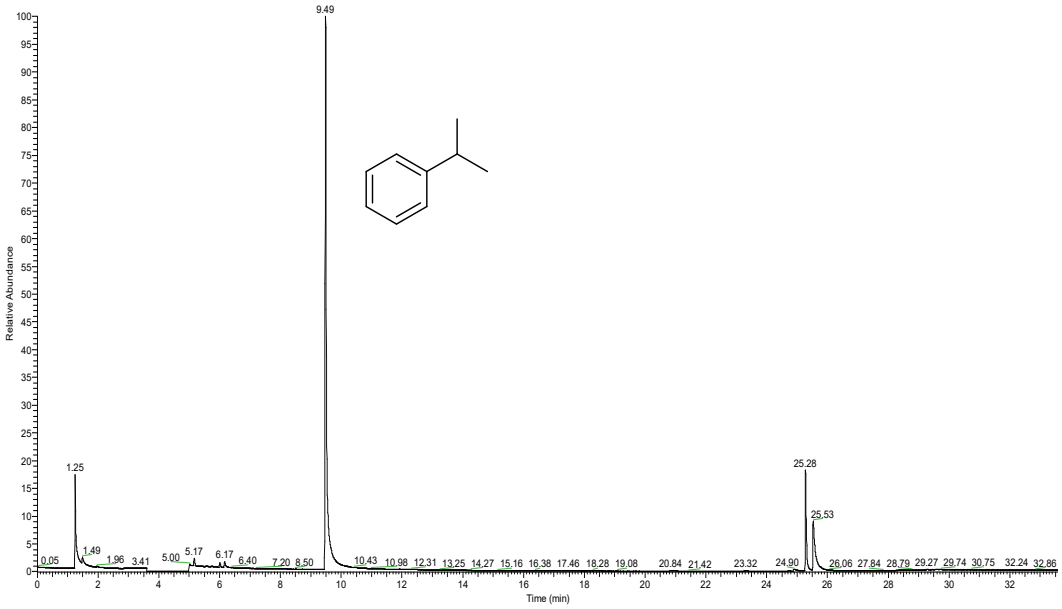

Figure S29. GCMS picture of 2-phenyl-1-propene hydrogen transfer reaction product. Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

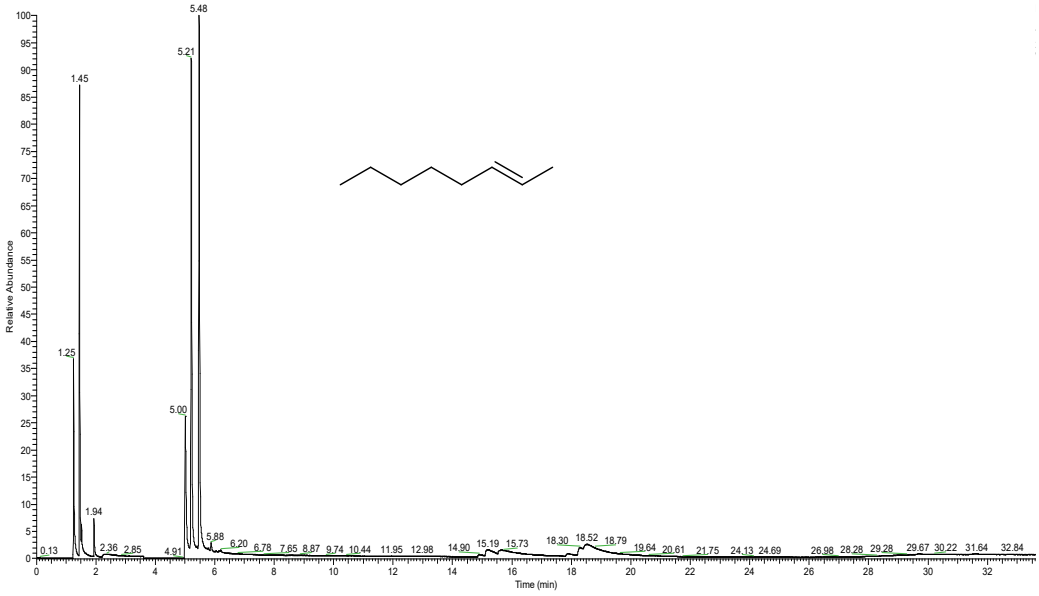

Figure S30. GCMS picture of 2-octene hydrogen transfer reaction product.

Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

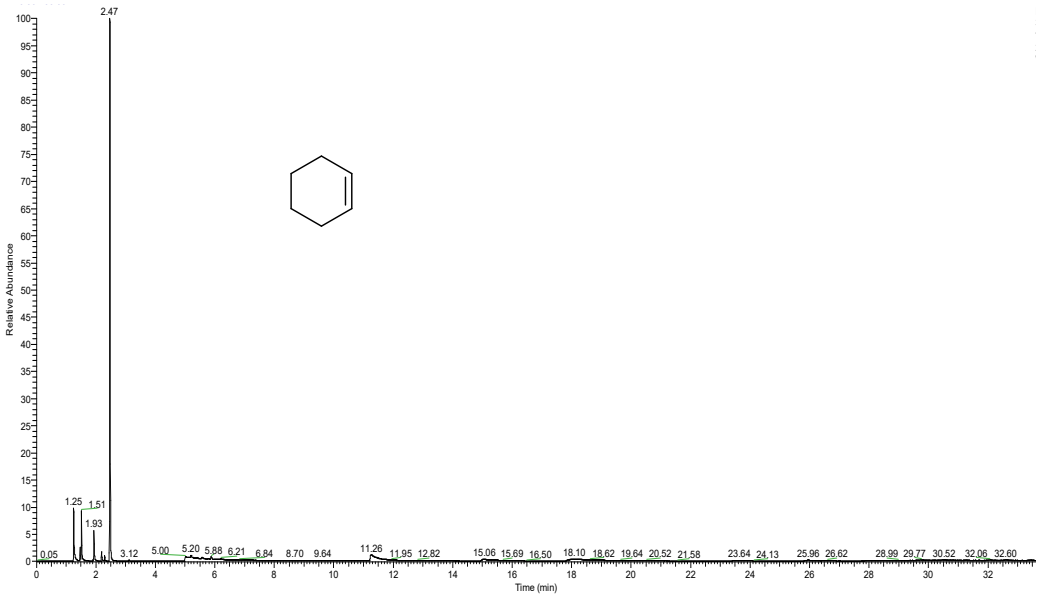

Figure S31. GCMS picture of cyclohexene hydrogen trandfer reaction product.

Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

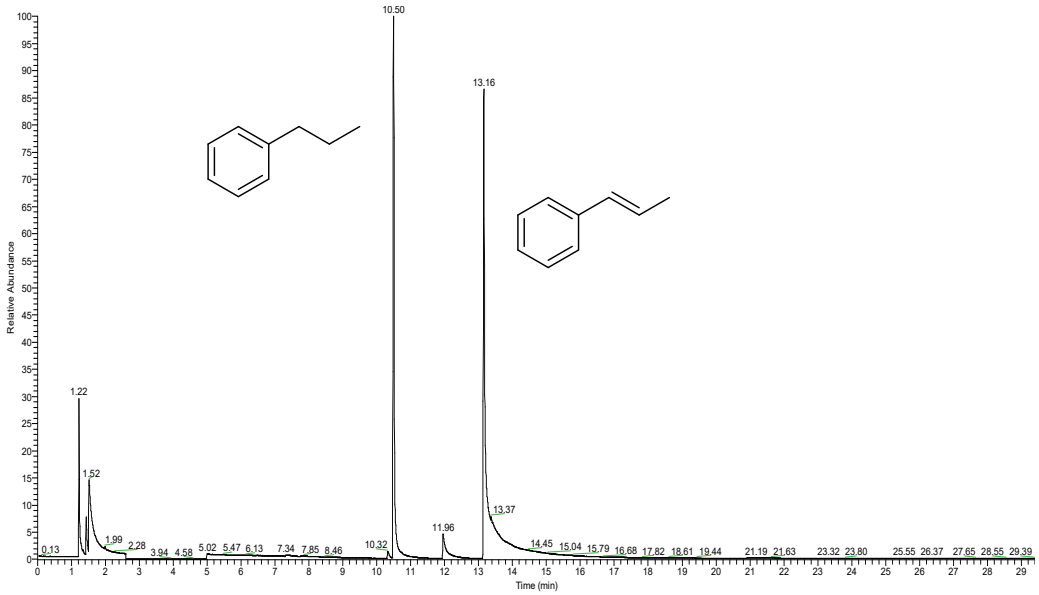

Figure S32. GCMS picture of β-methylstyrene hydrogen trandfer reaction product.

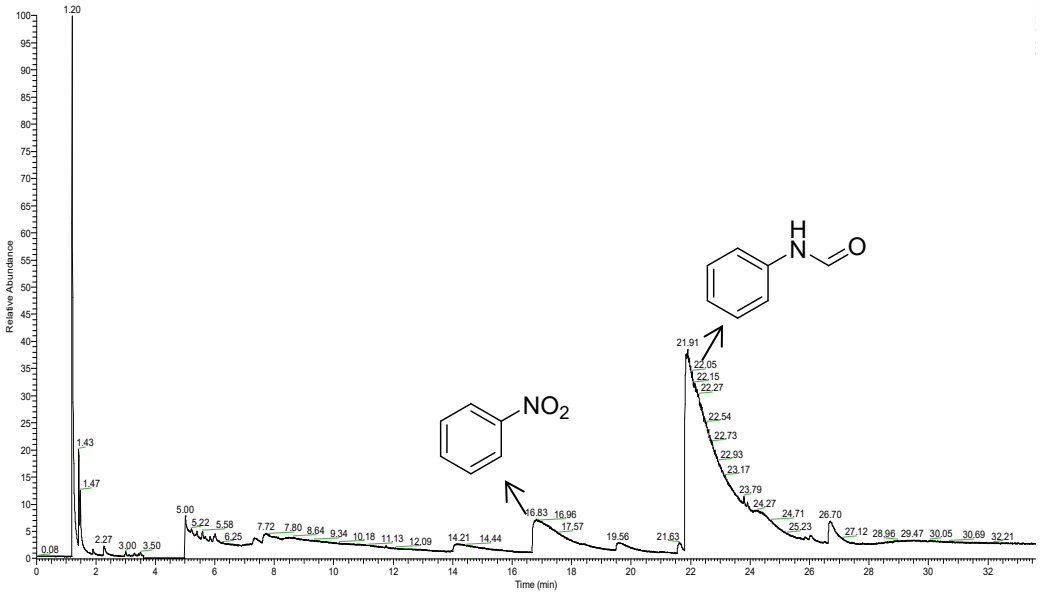

Figure S33. GCMS picture of nitrobenzene hydrogen transfer reaction product.

Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 °C, 10 min, purging nitrogen for three times.

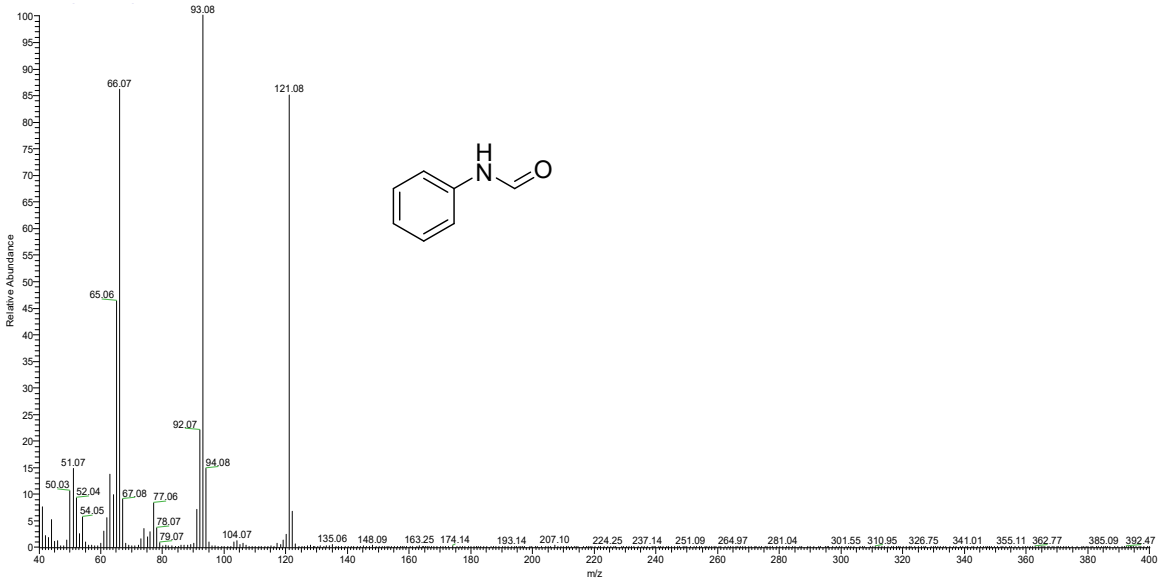

Figure S34. Formanilide GCMS fragment peak graph.

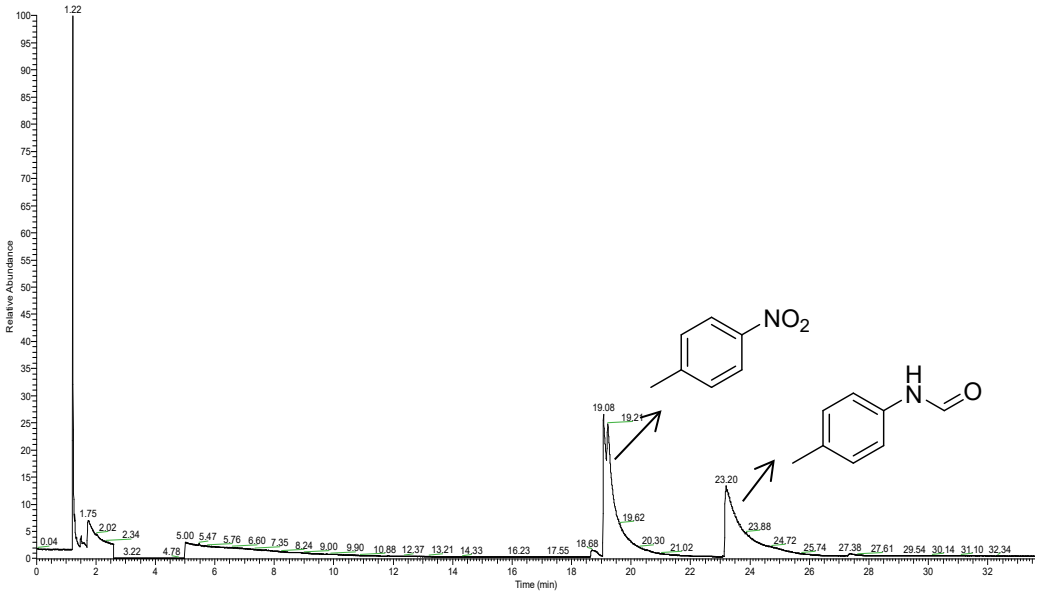

Figure S35. GCMS picture of 4-nitrotoluene hydrogen transfer reaction product.

Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

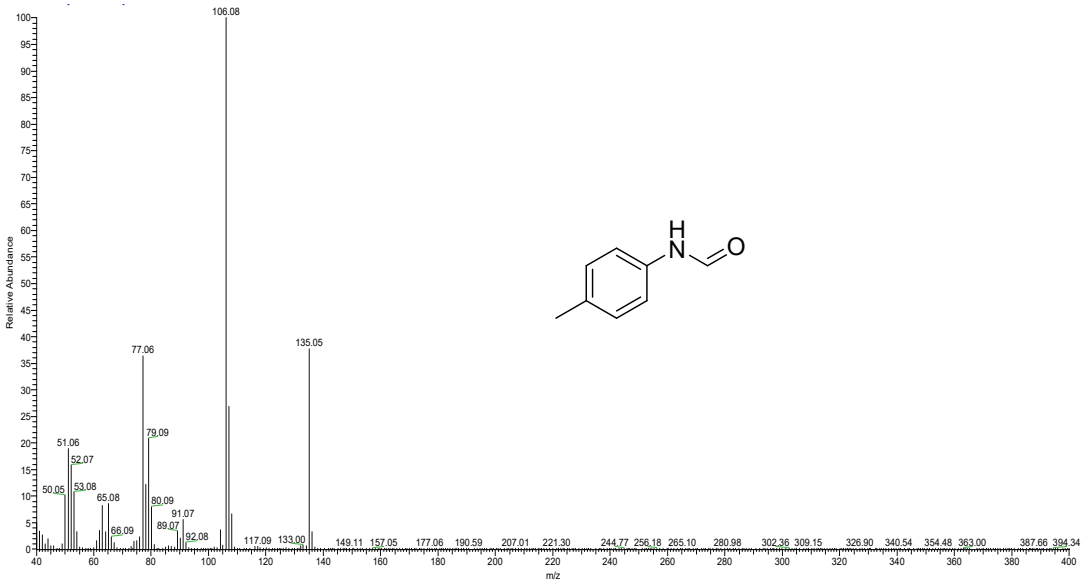

Figure S36. N-(4-methylphenyl)formamide GCMS fragment peak graph.

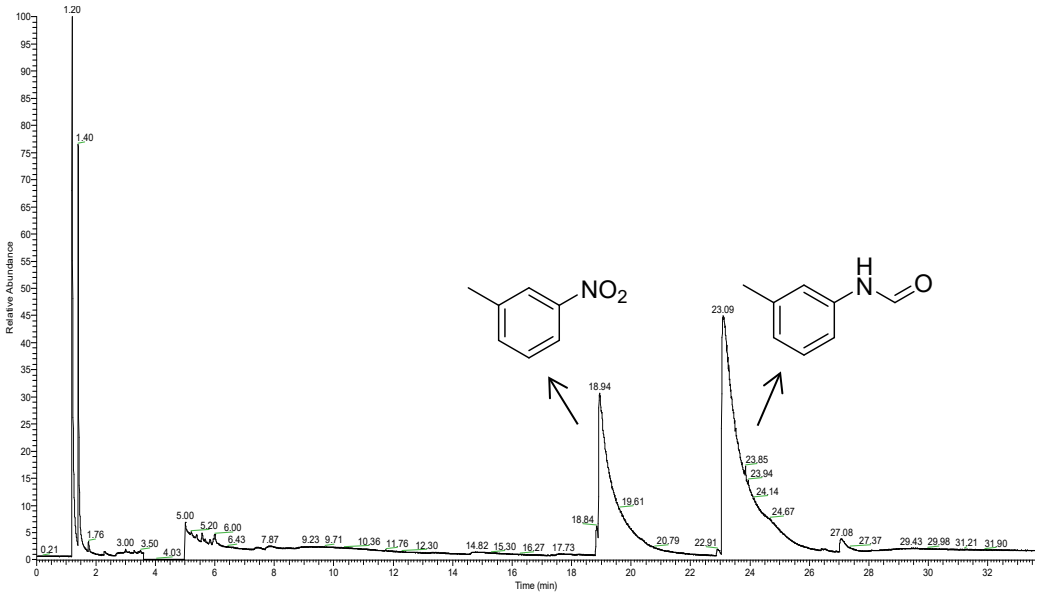

Figure S37. GCMS picture of 3-nitrotoluene hydrogen trandfer reaction product.

Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

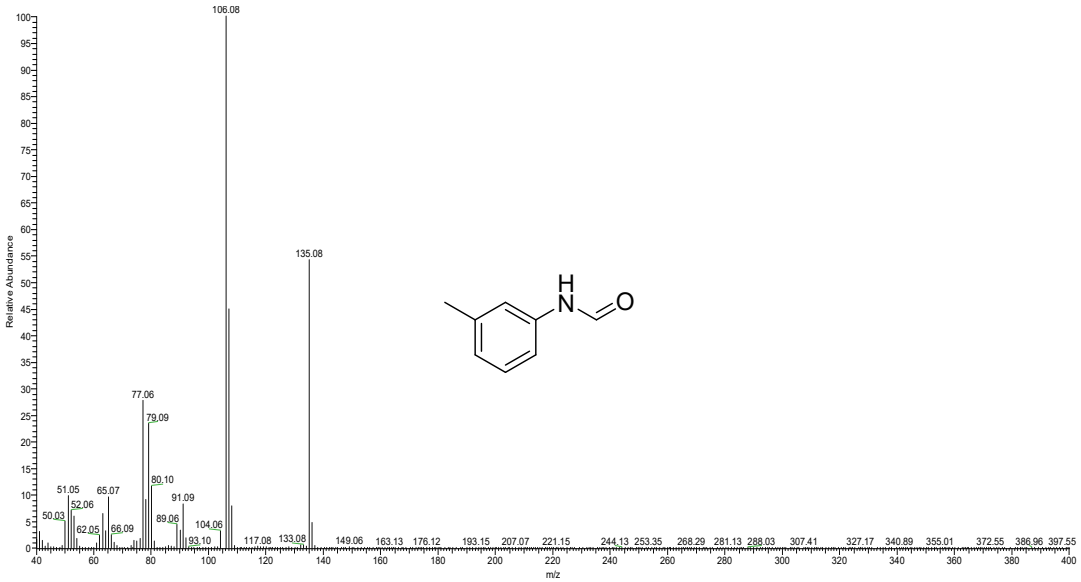

Figure S38. N-(3-methylphenyl)formamide GCMS fragment peak graph.

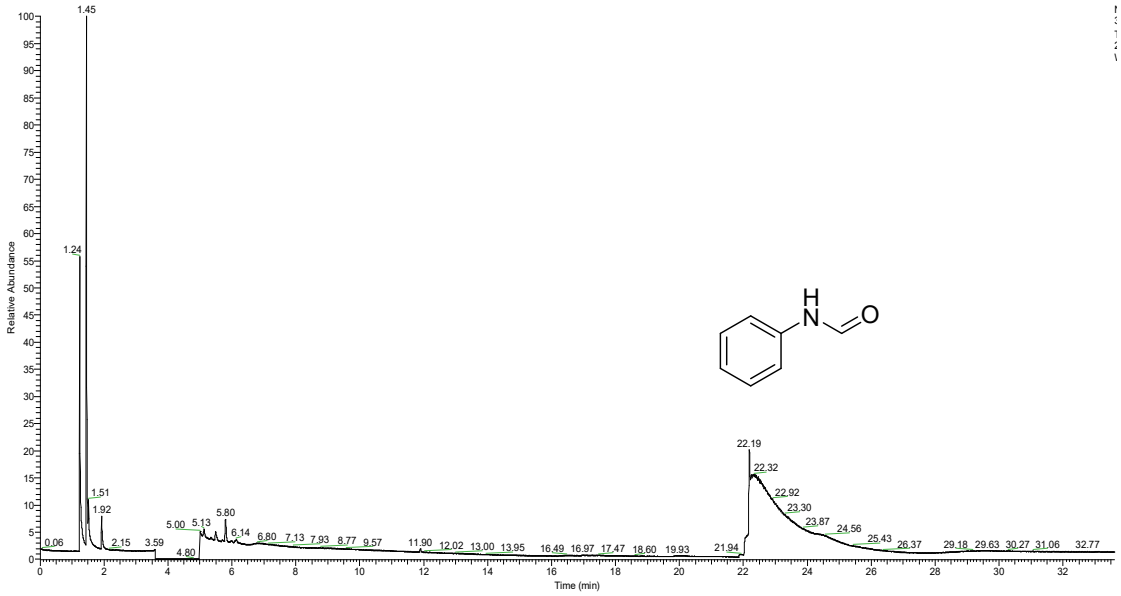

Figure S39. GCMS picture of 4-nitrobenzoic acid hydrogen transfer reaction product. Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

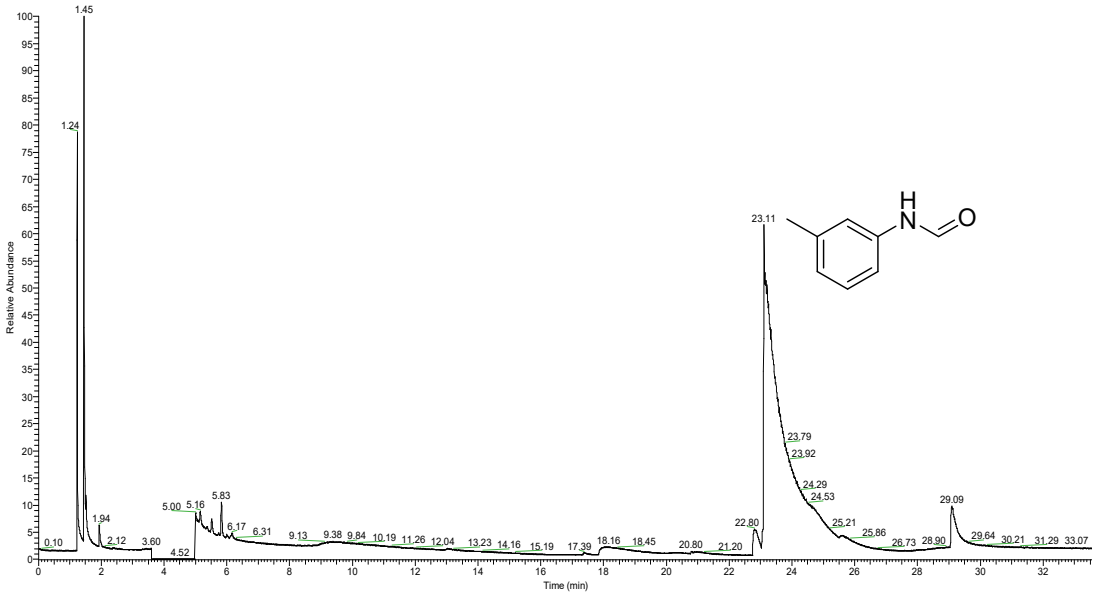

Figure S40. GCMS picture of 4-methyl-2-nitrobenzoic acid hydrogen transfer reaction product.

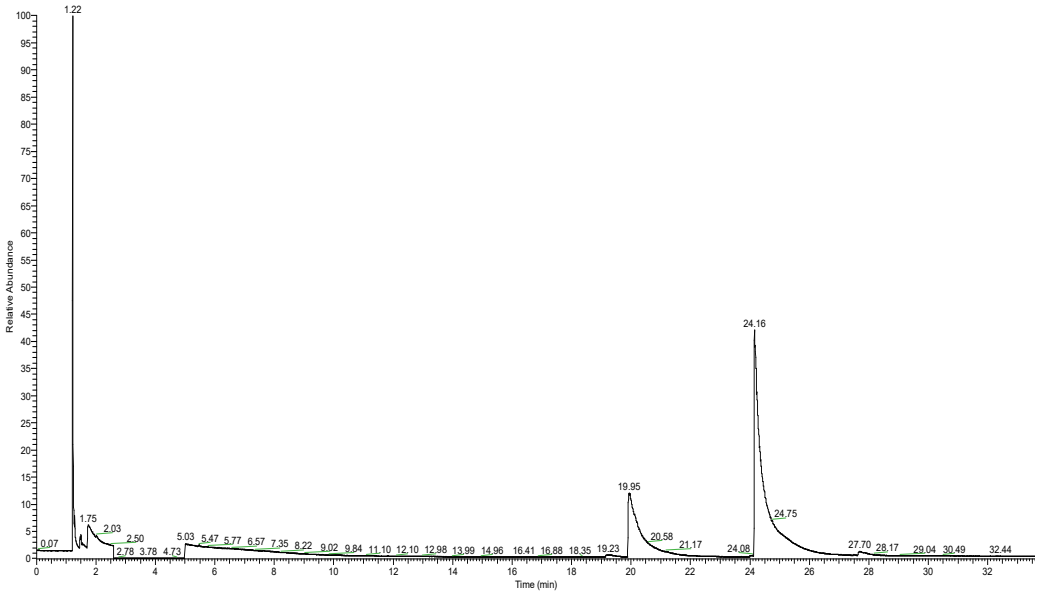

Figure S41. GCMS picture of 4-nitrochlorobenzene hydrogen transfer reaction product. Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 °C, 10 min, purging nitrogen for three times.

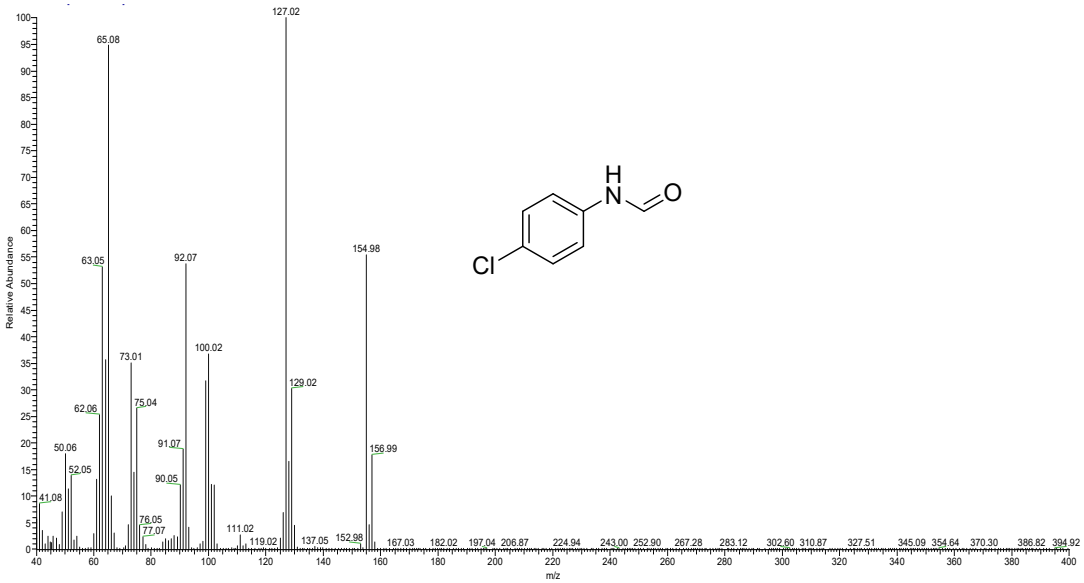

Figure S42. N-(4-chlorophenyl)-formamide GCMS fragment peak graph.

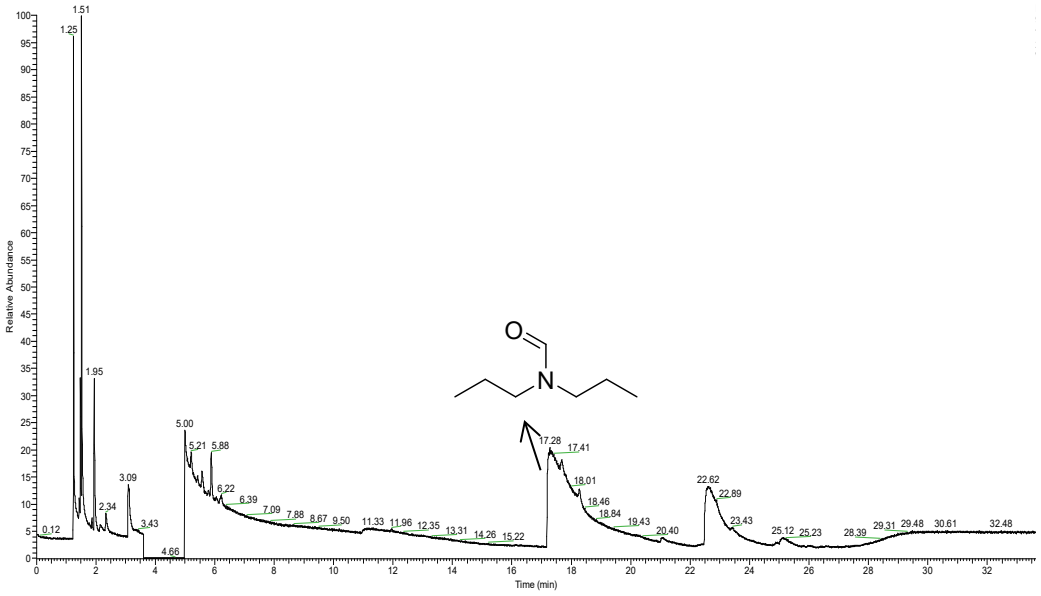

Figure S43. GCMS picture of 1-nitropropane hydrogen trandfer reaction product.

Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 °C, 10 min, purging nitrogen for three times.

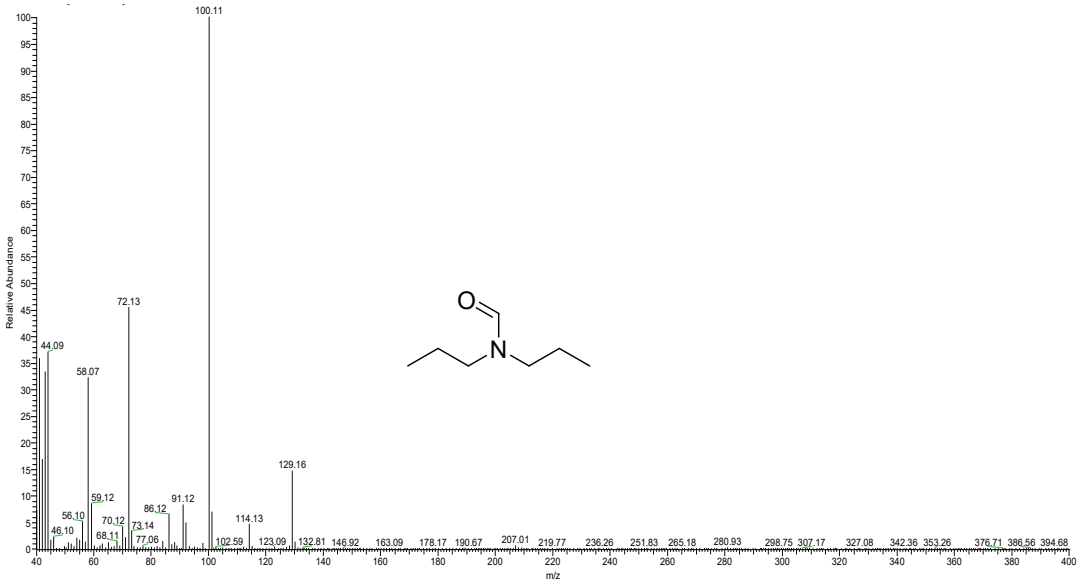

Figure S44. N,N-dipropylformanmide GCMS fragment peak graph.

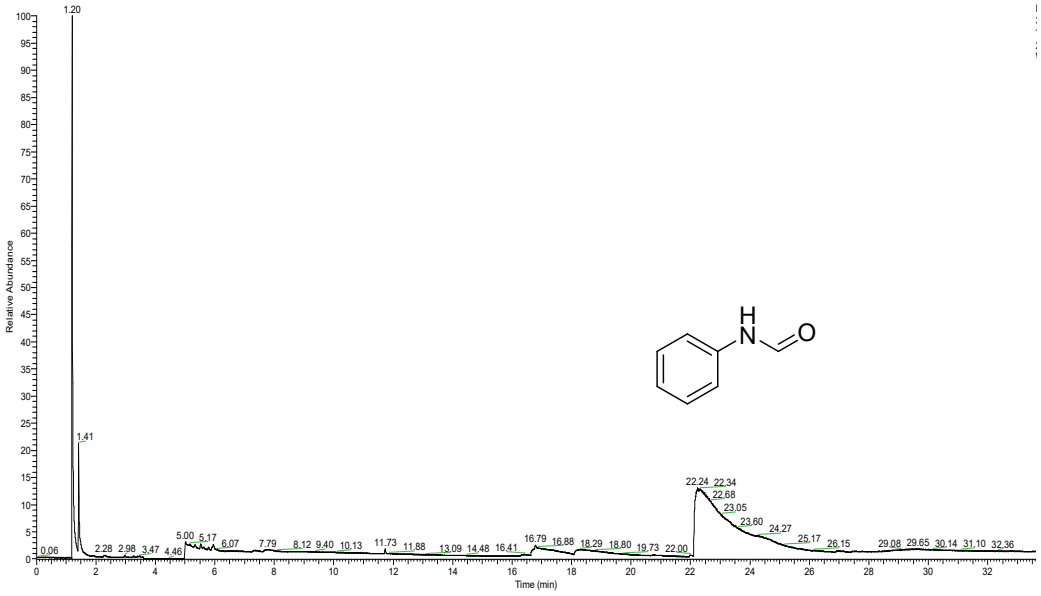

Figure S45. GCMS picture of nitrosobenzene hydrogen transfer reaction product.

Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

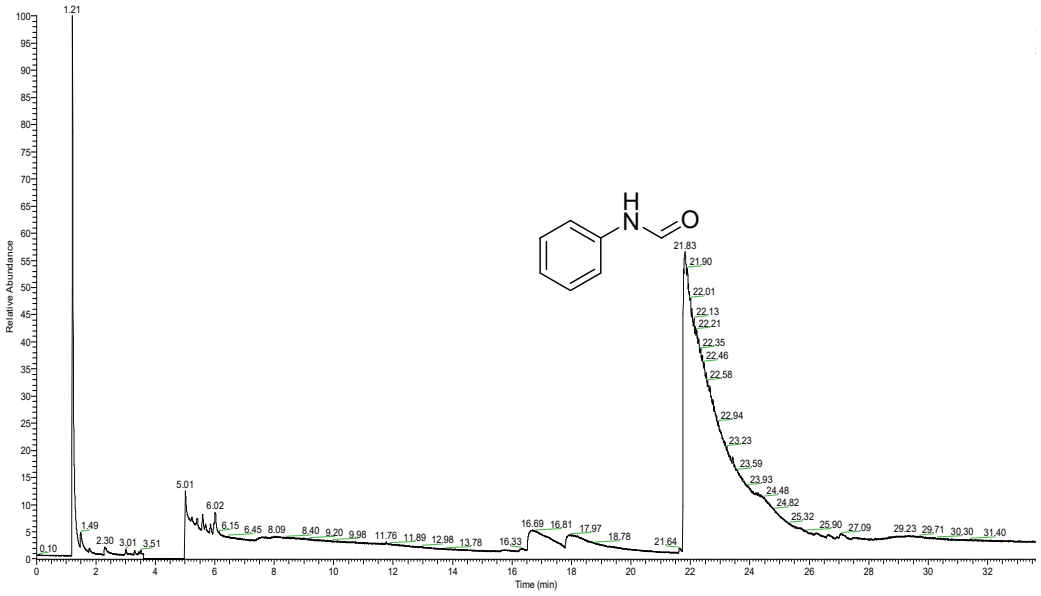

Figure S46. GCMS picture of phenylhydroxylamine hydrogen transfer reaction product.

Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

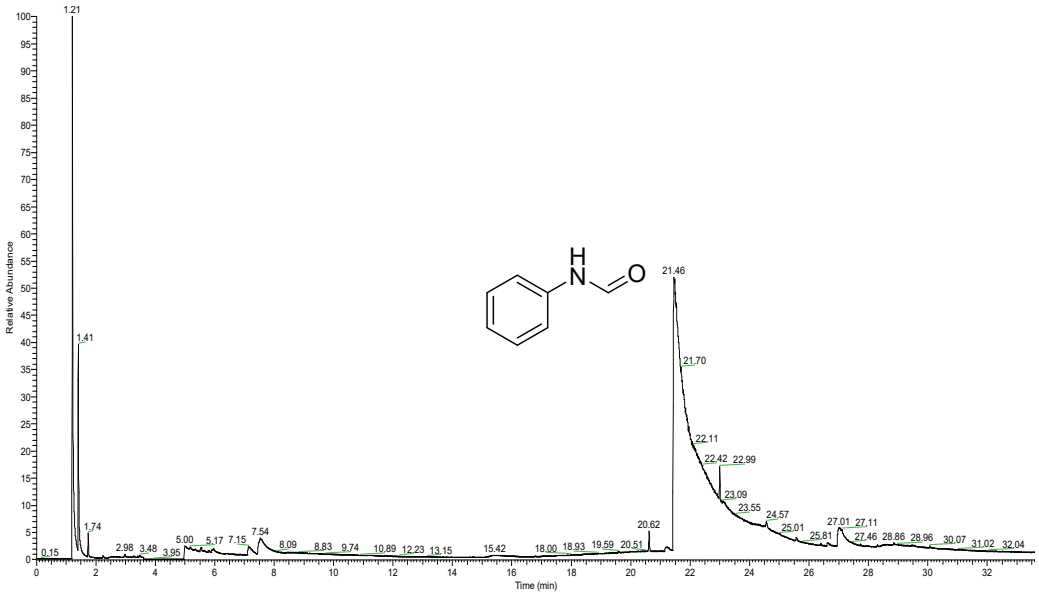

Figure S47. GCMS picture of azobenzene hydrogen transfer reaction product.

Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.

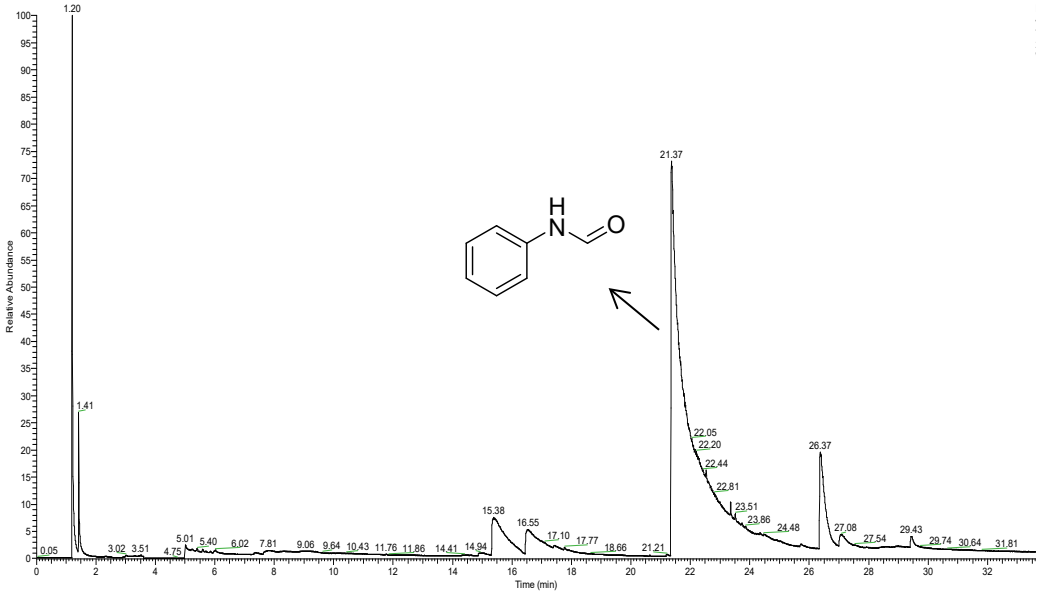

Figure S48. GCMS picture of azoxybenzene hydrogen transfer reaction product.

Reaction condition: 3.0 mmol substrates, 0.3 mmol NaI, 32 mmol HCOOH, 12 ml Toluene, 600 rpm, 180 ^{o}C, 10 min, purging nitrogen for three times.