

Supporting information

Iron catalysed decarboxylative oxidation photocatalysis of alpha-carbon to access aldehyde/ketone from aryl aliphatic carboxylic acid

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1. Copies of ^1H NMR, ^{13}C NMR

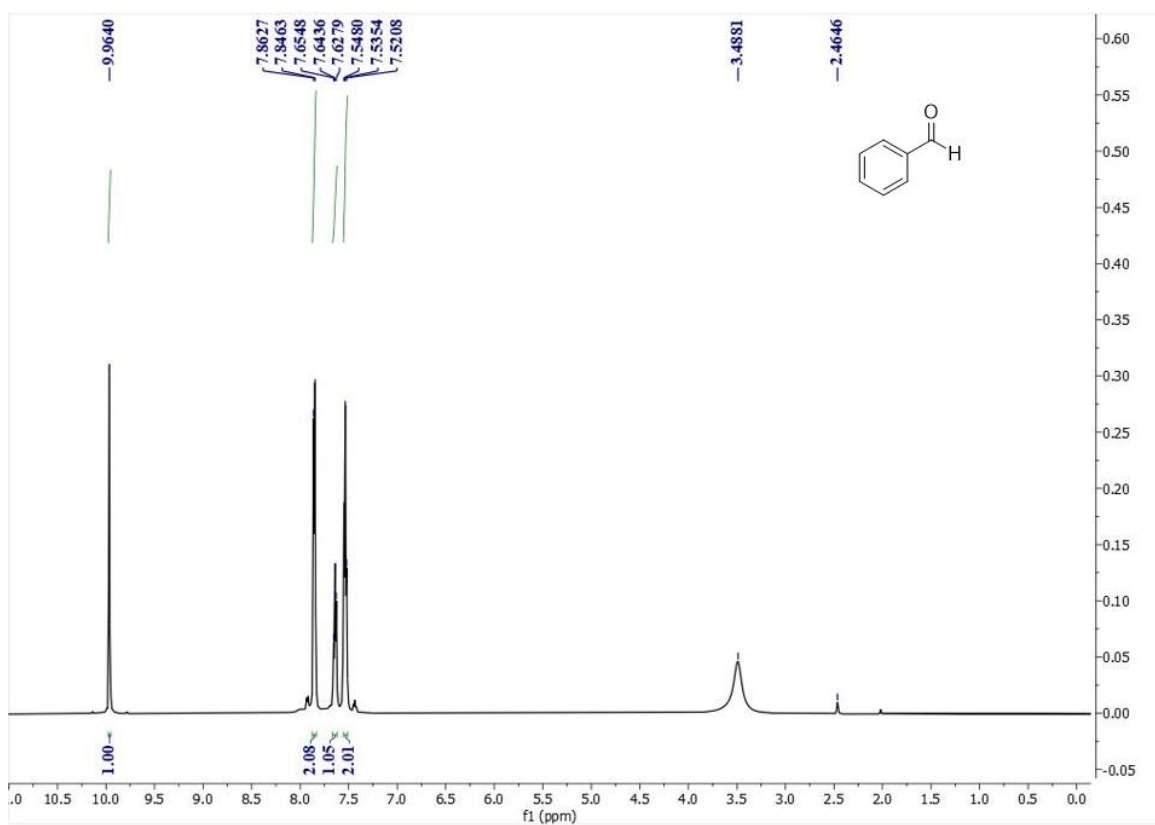


Fig.S1 ^1H NMR for Benzaldehyde (2a)

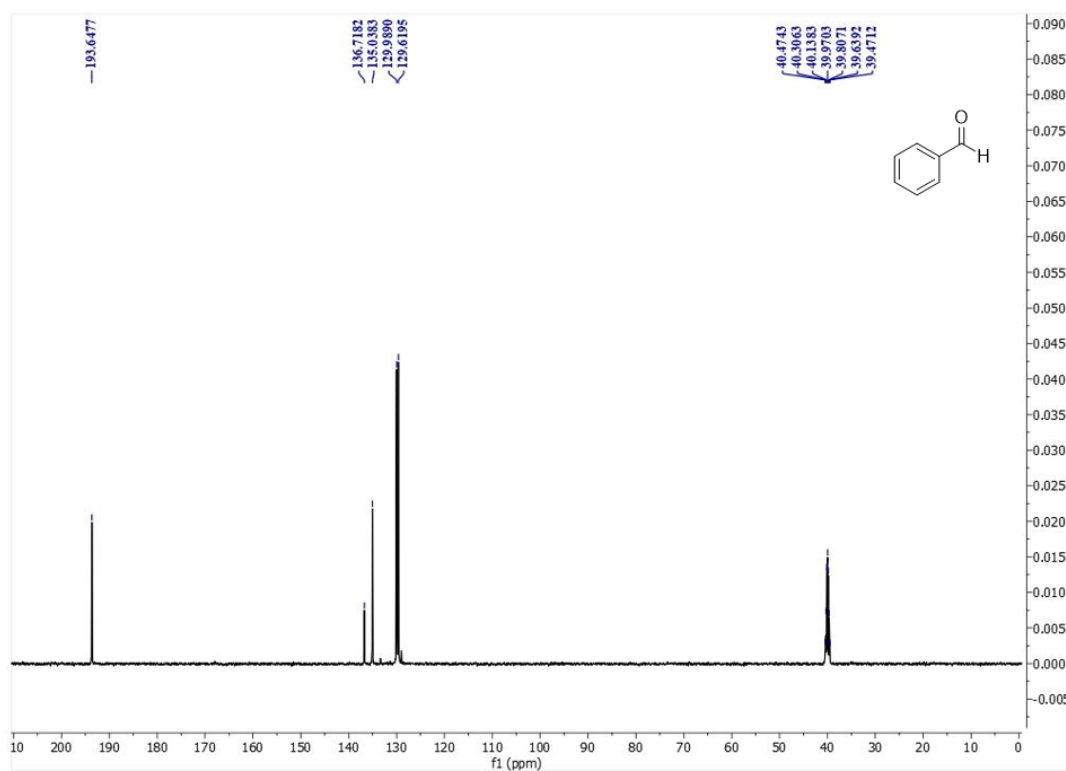


Fig.S2 ^{13}C NMR for Benzaldehyde (2a)

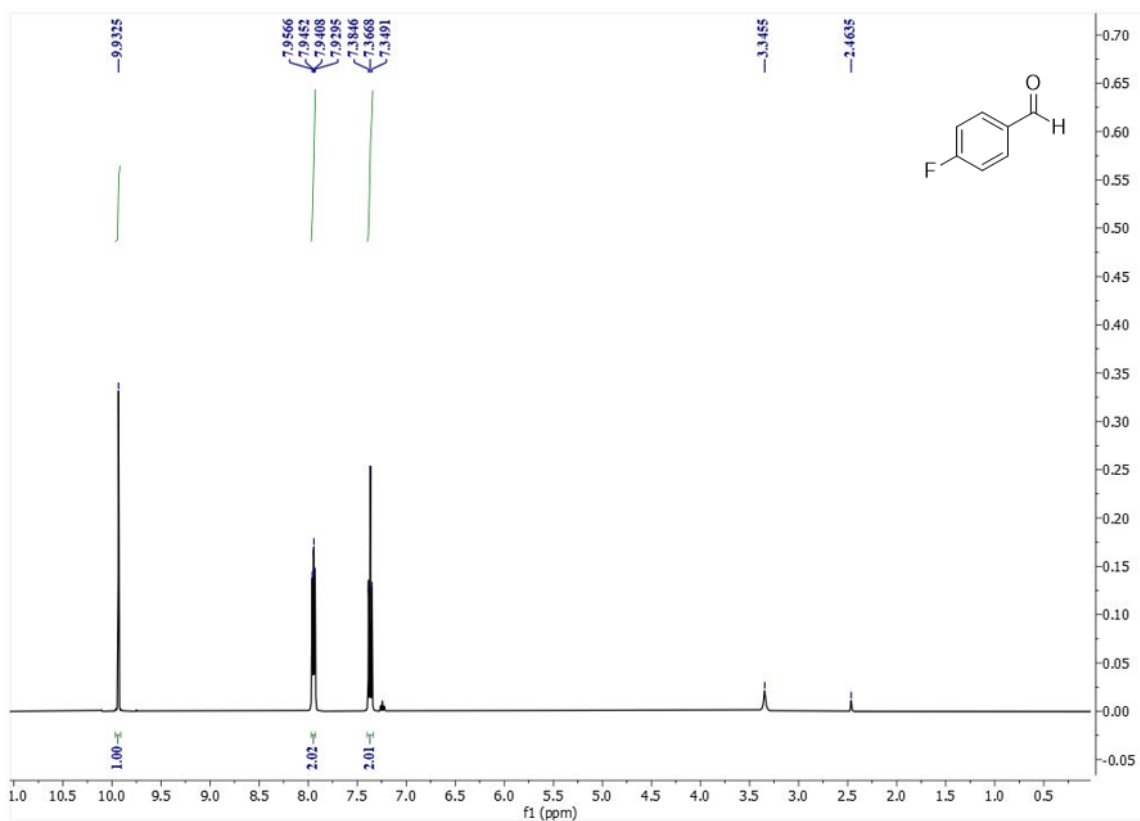


Fig.S3 ^1H NMR for 4-Fluoro benzaldehyde (2b)

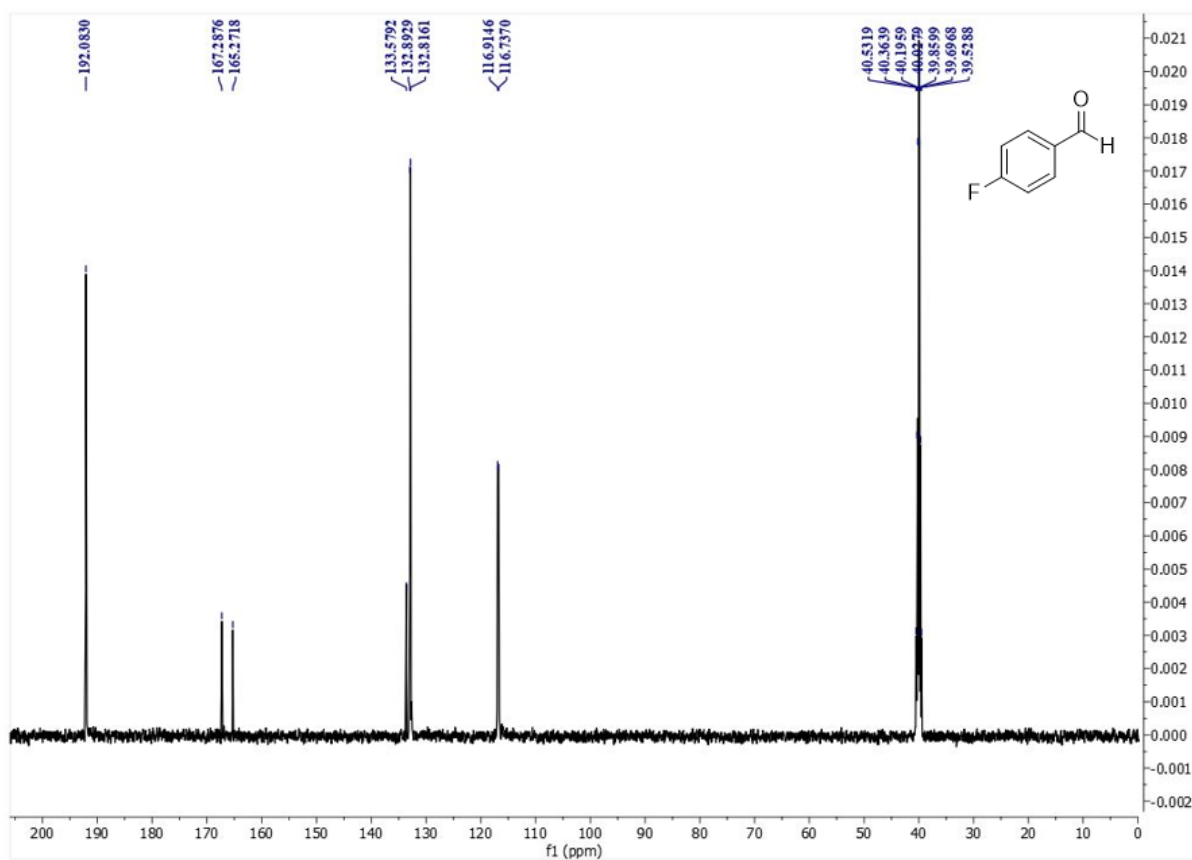


Fig.S4 ^{13}C NMR for 4-Fluoro benzaldehyde (2b)

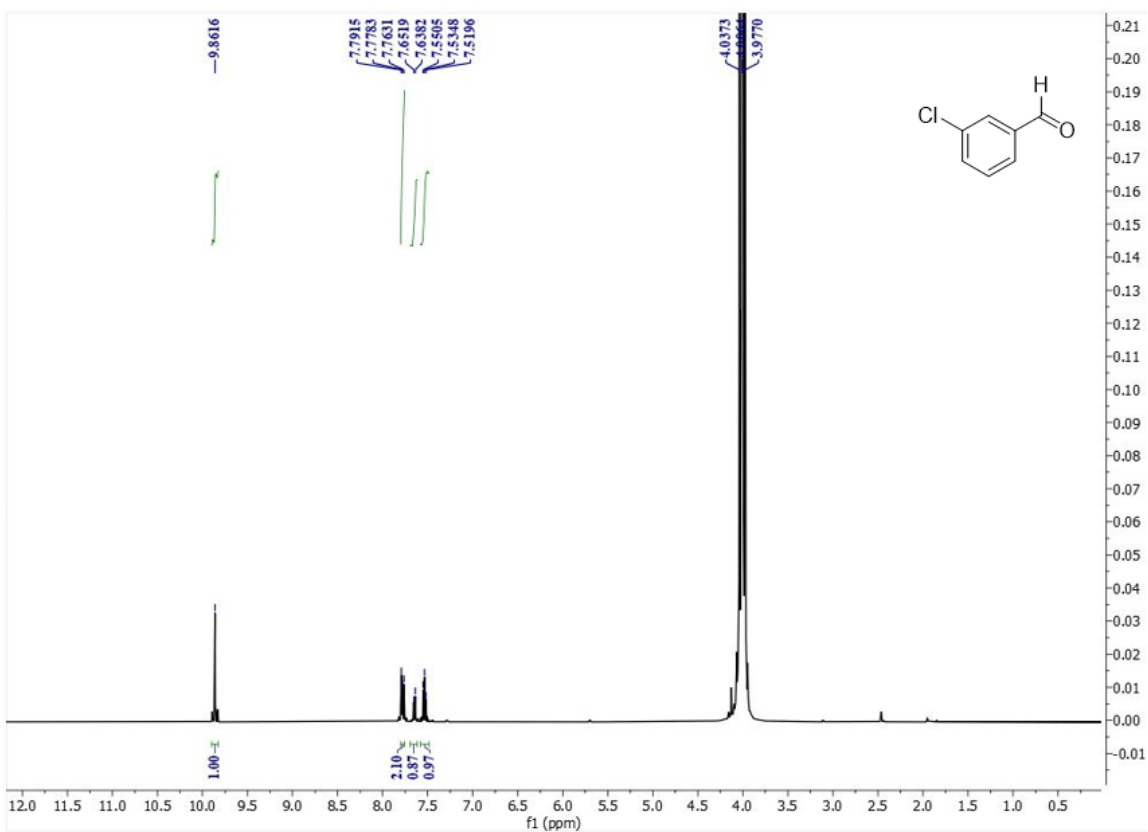


Fig.S5 ^1H NMR for 3-Chloro benzaldehyde (2c)

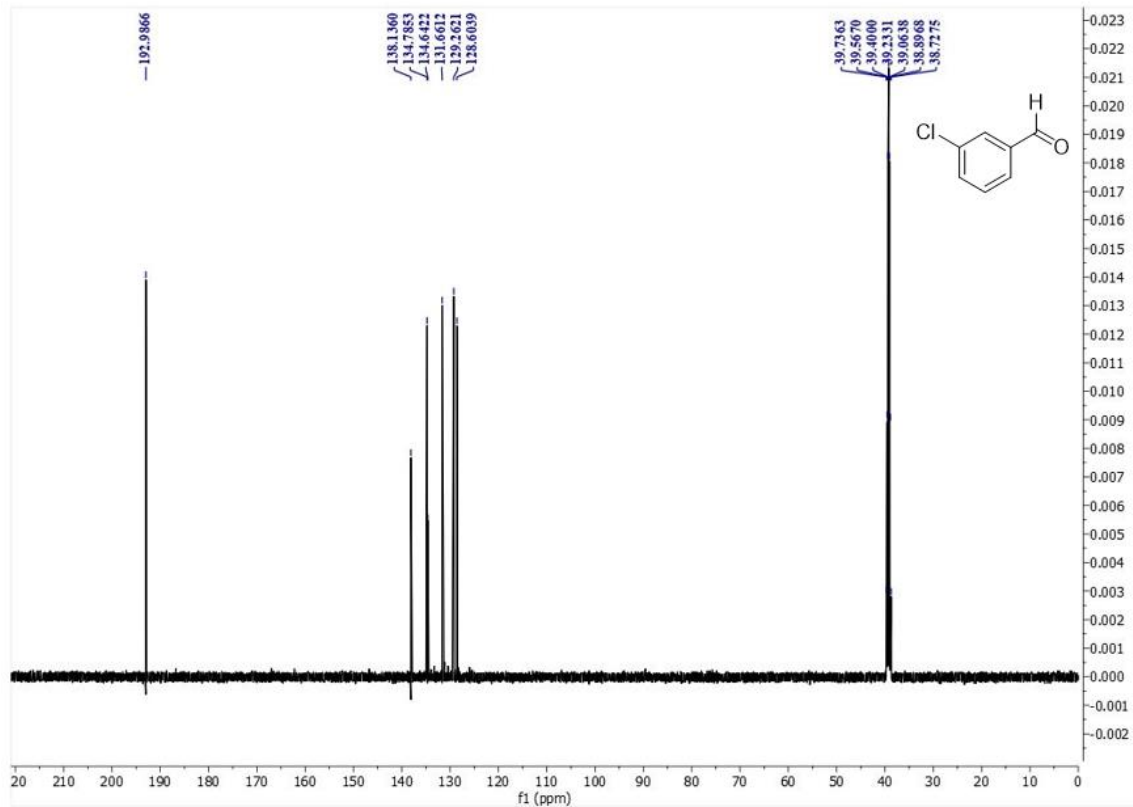


Fig.S6 ^{13}C NMR for 3-Chloro benzaldehyde (2c)

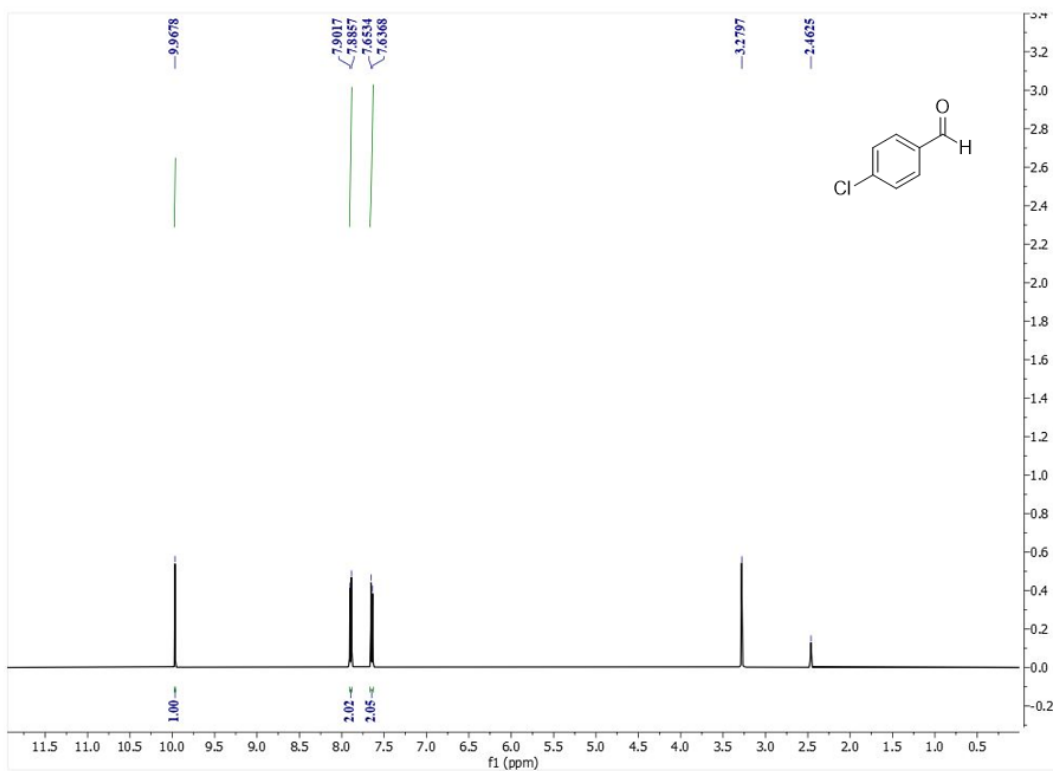


Fig.S7 ^1H NMR for 4-Chloro benzaldehyde (2d)

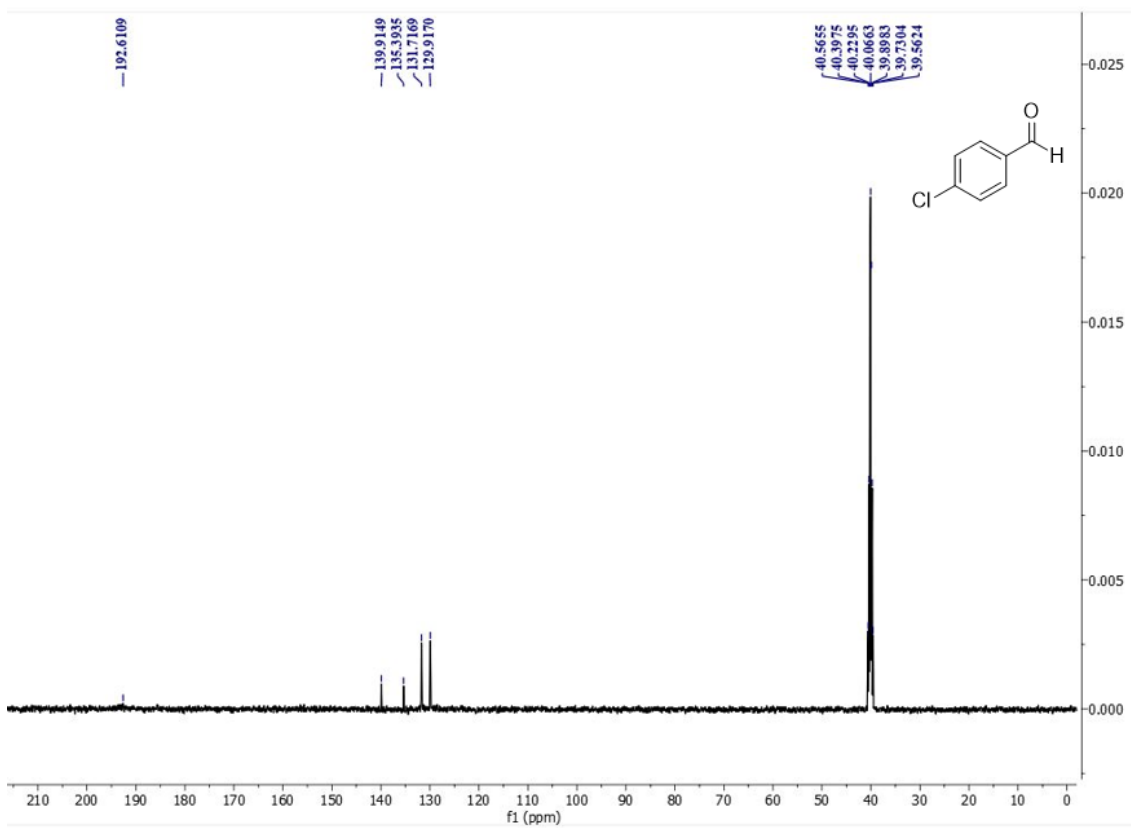


Fig.S8 ^{13}C NMR for 4-Chloro benzaldehyde (2d)

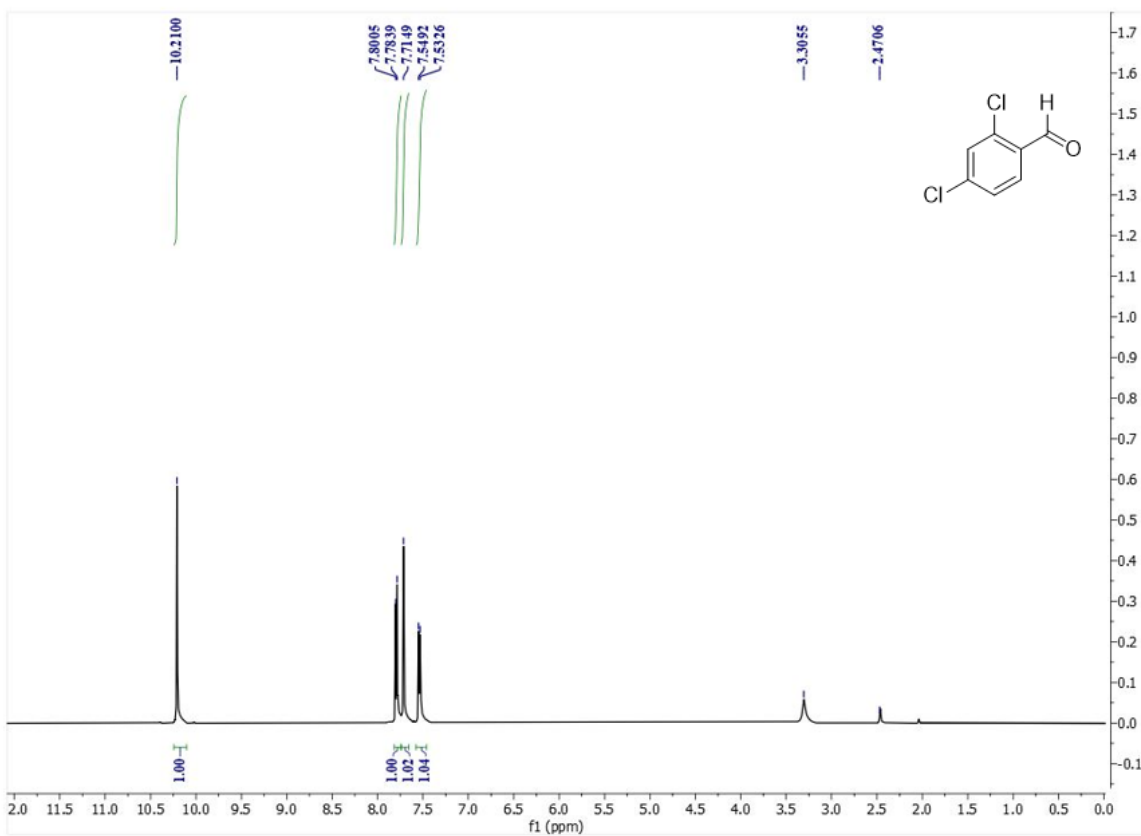


Fig.S9 ^1H NMR for 2,4-dichloro benzaldehyde (2e)

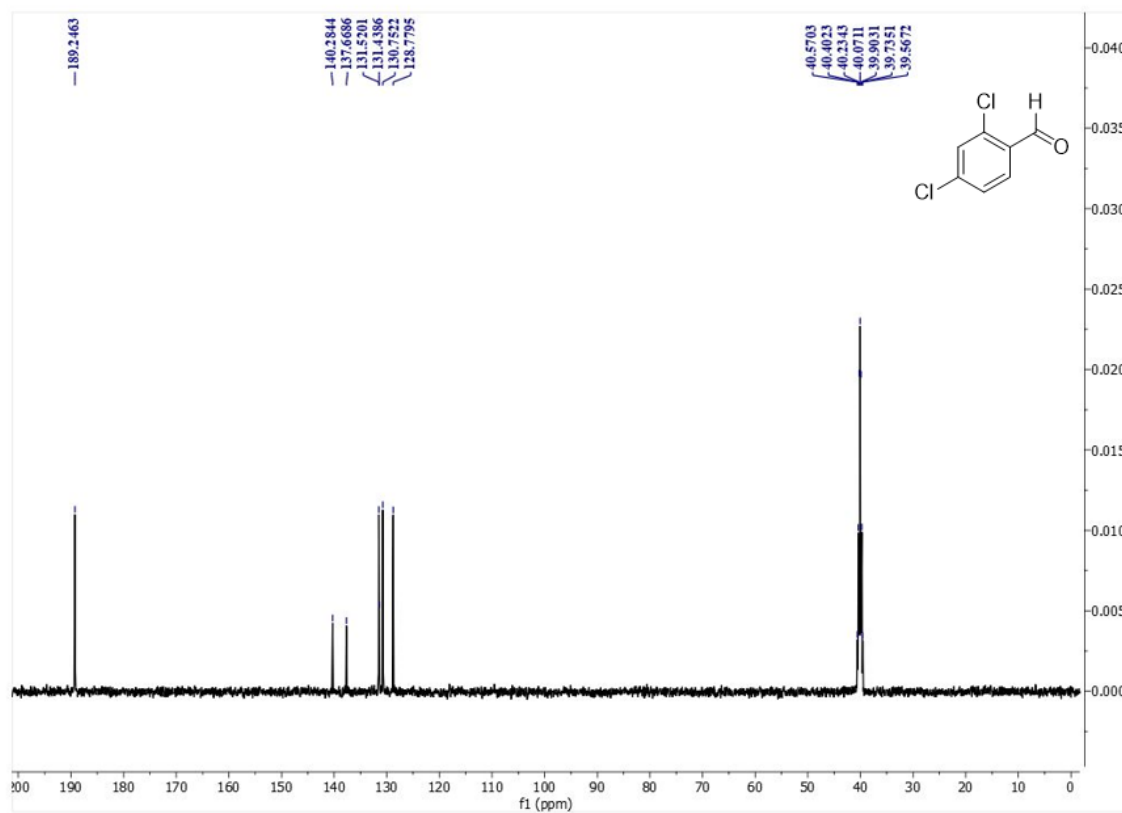


Fig.S10 ^{13}C NMR for 2,4-dichloro benzaldehyde (2e)

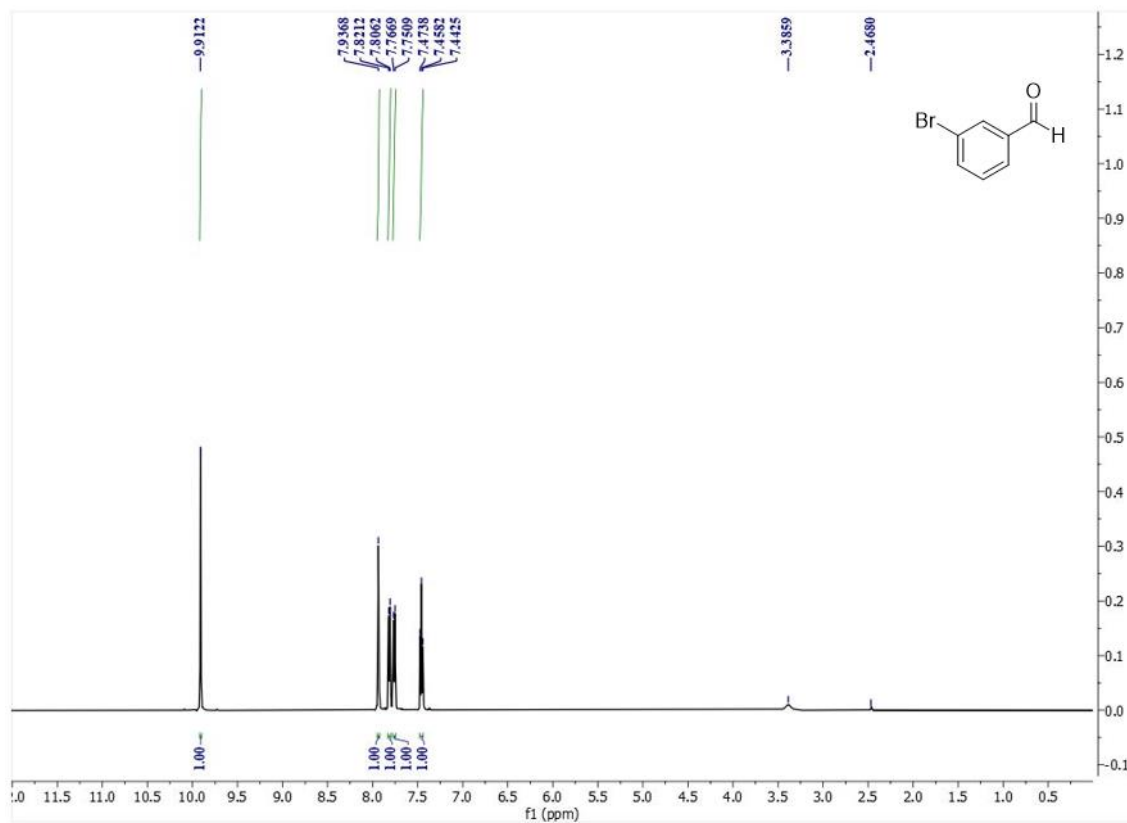


Fig.S11 ^1H NMR for 3-Bromo benzaldehyde (2f)

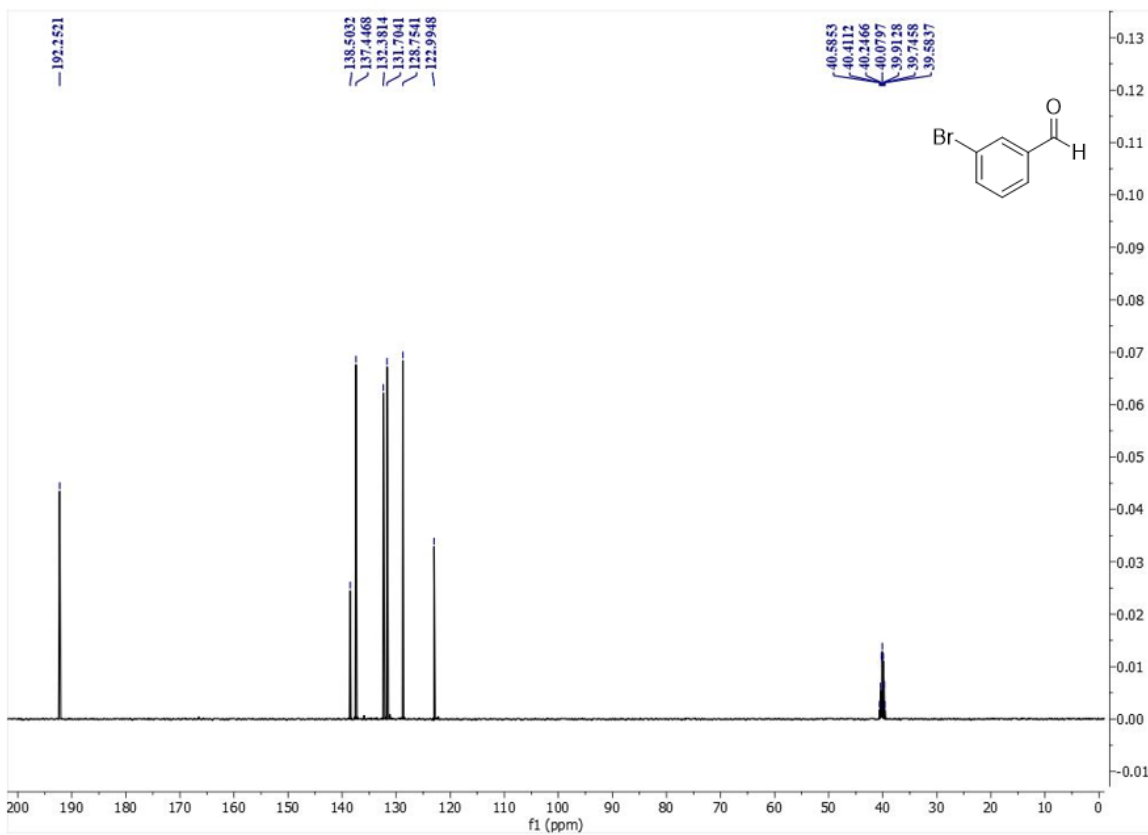


Fig.S12 ^{13}C NMR for 3-Bromo benzaldehyde (2f)

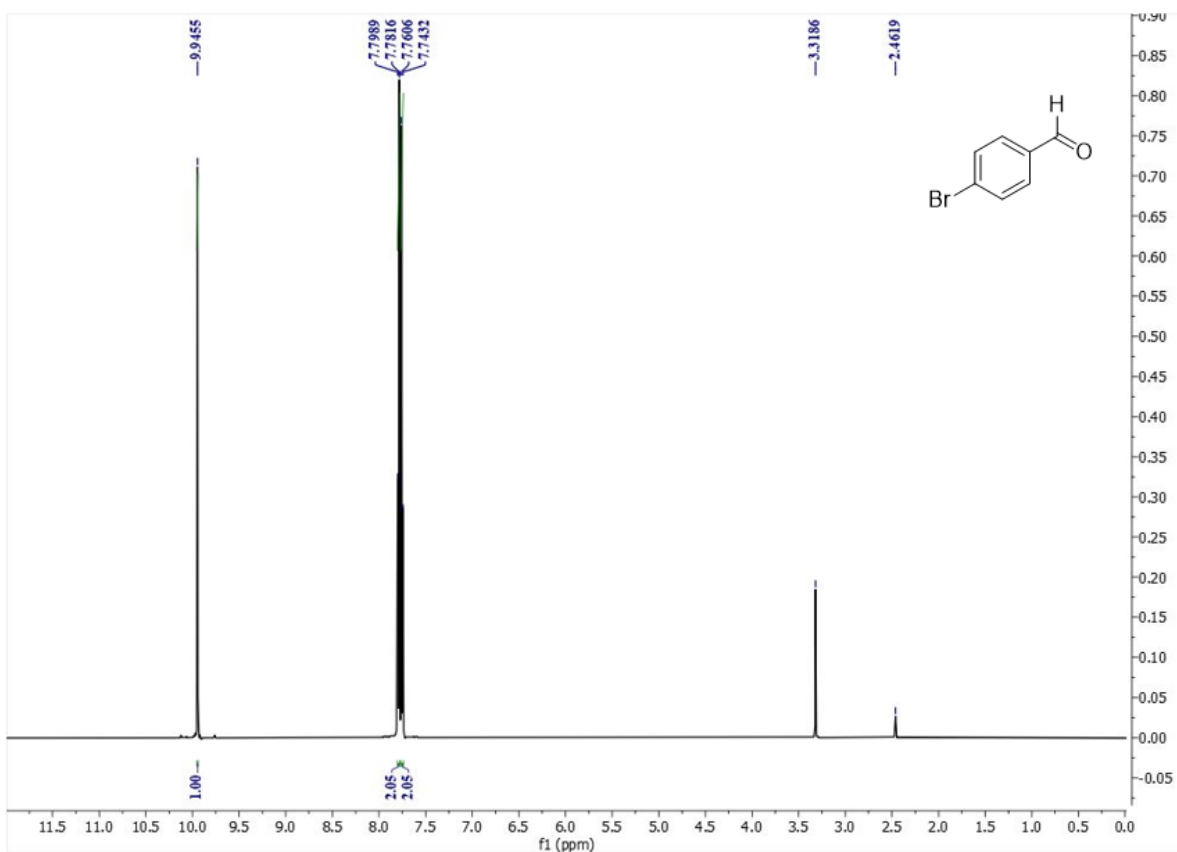


Fig.S13 ^1H NMR for 4-Bromo benzaldehyde (2g)

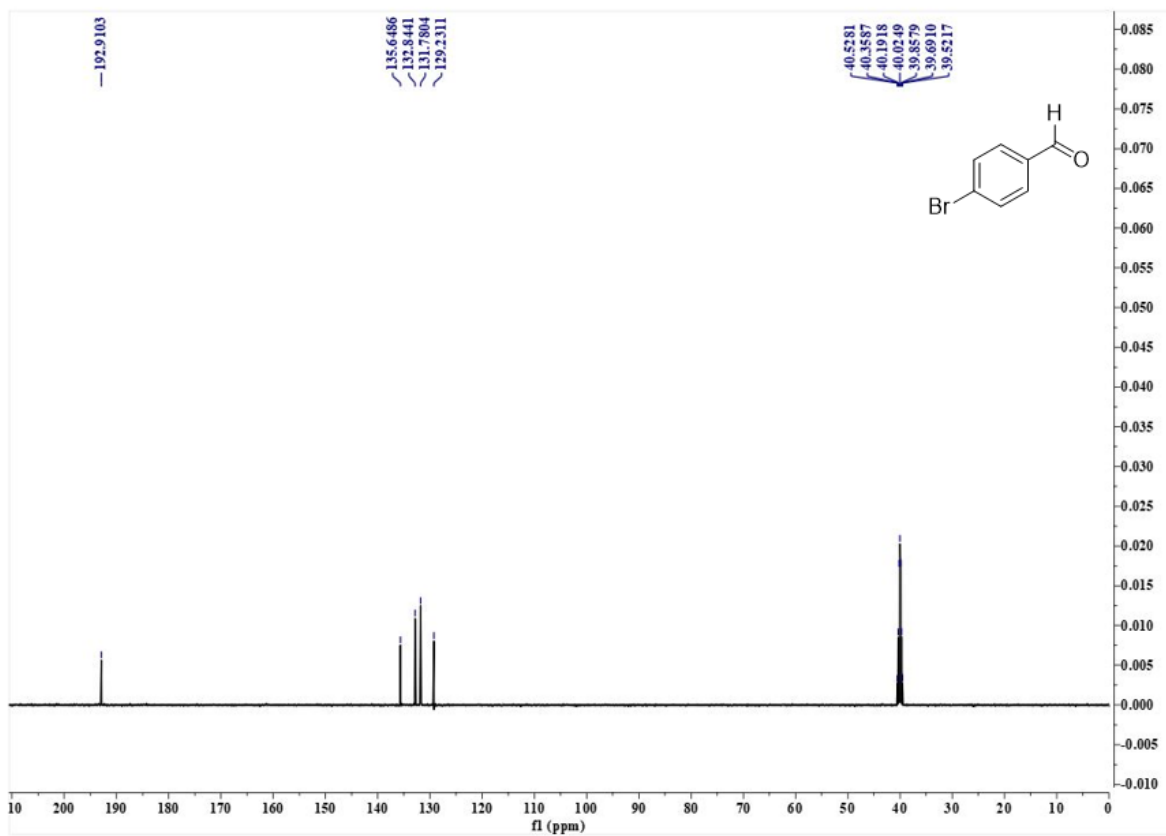


Fig.S14 ^{13}C NMR for 4-Bromo benzaldehyde (2g)

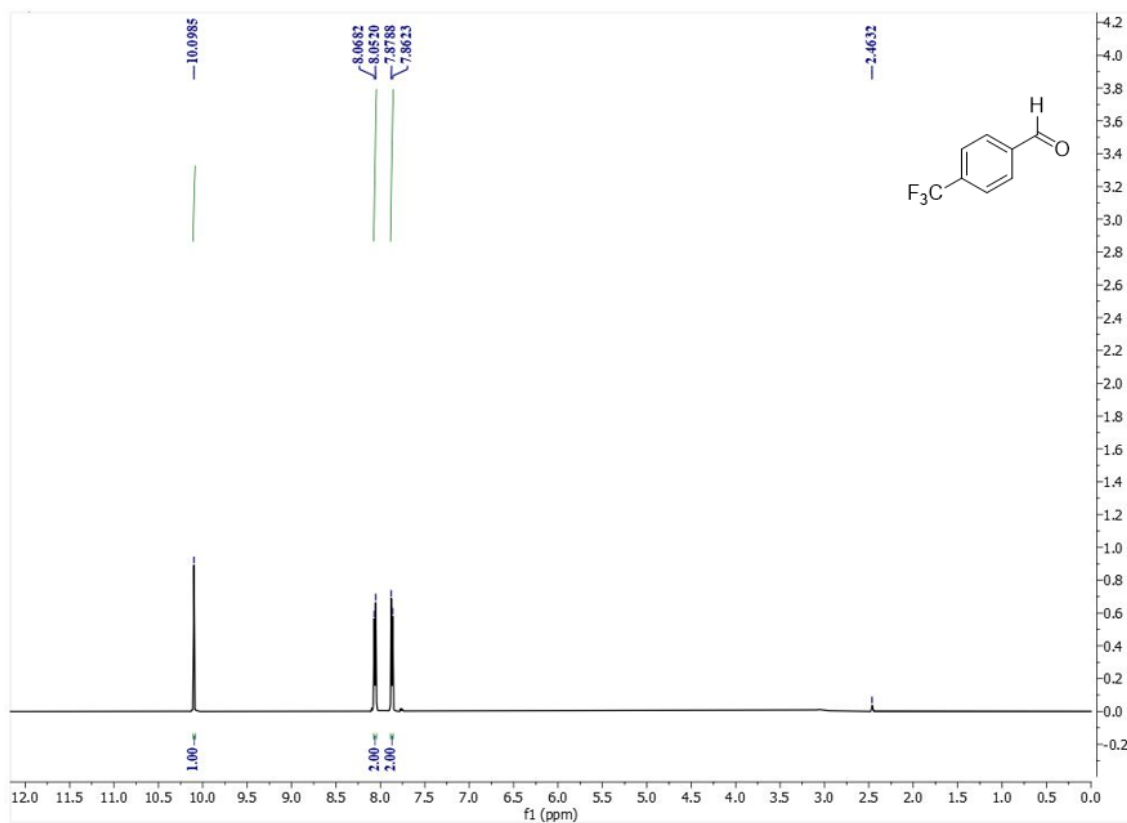


Fig.S15 ^1H NMR for 4-Trifluoromethyl benzaldehyde (2h)

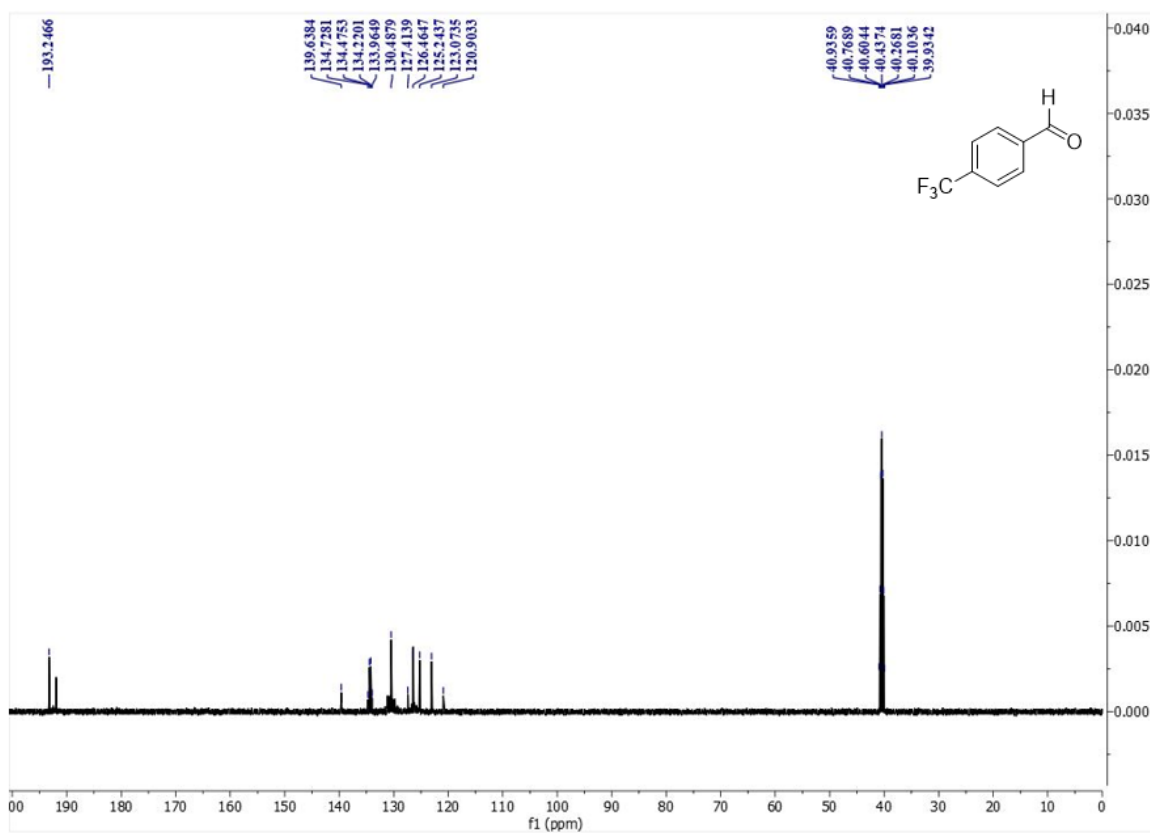


Fig.S16 ^{13}C NMR for 4-Trifluoromethyl benzaldehyde (2h)

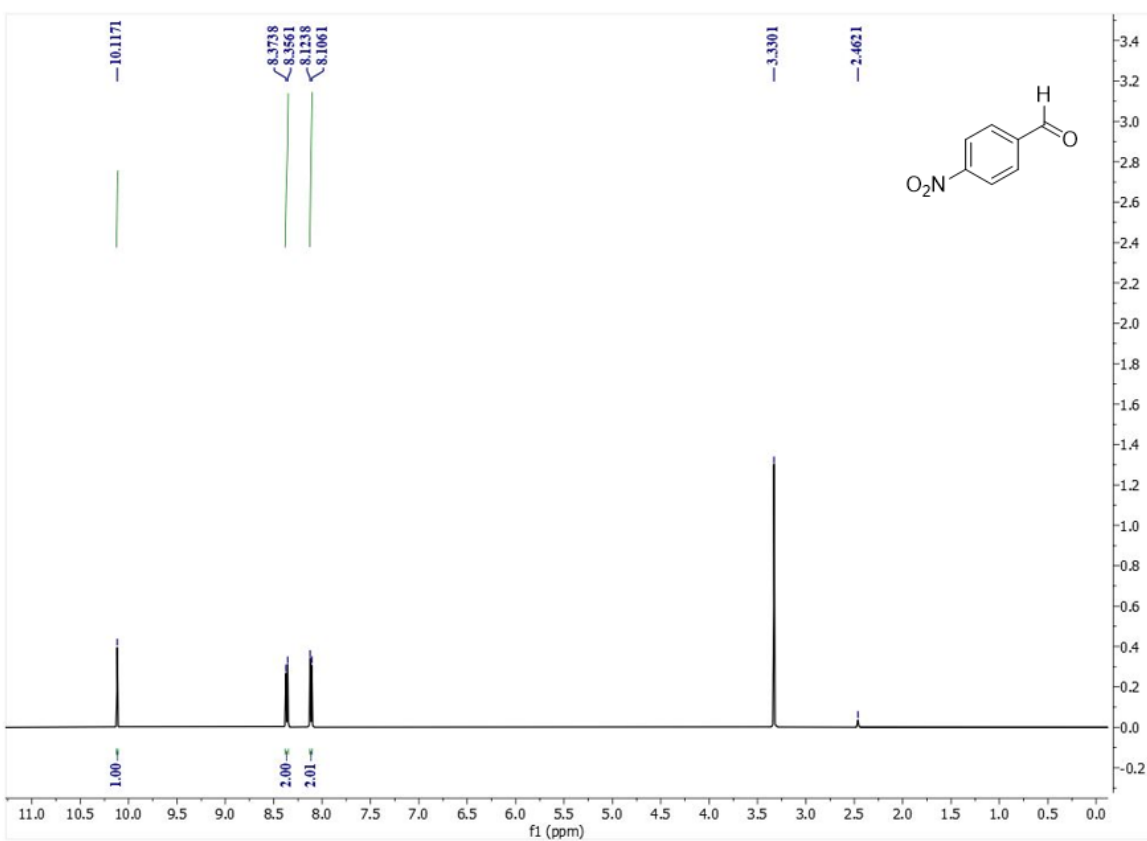


Fig.S17 ^1H NMR for 4-Nitro benzaldehyde (2i)

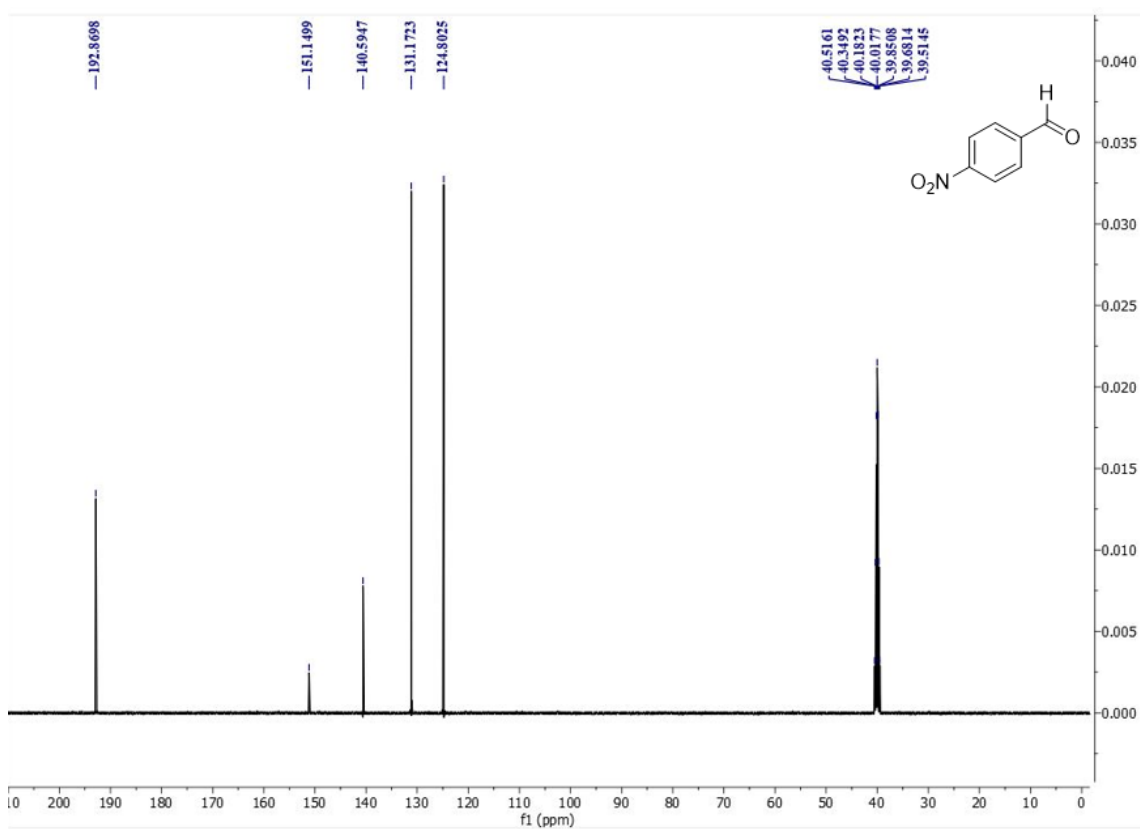


Fig.S18 ^{13}C NMR for 4-Nitro benzaldehyde (2i)

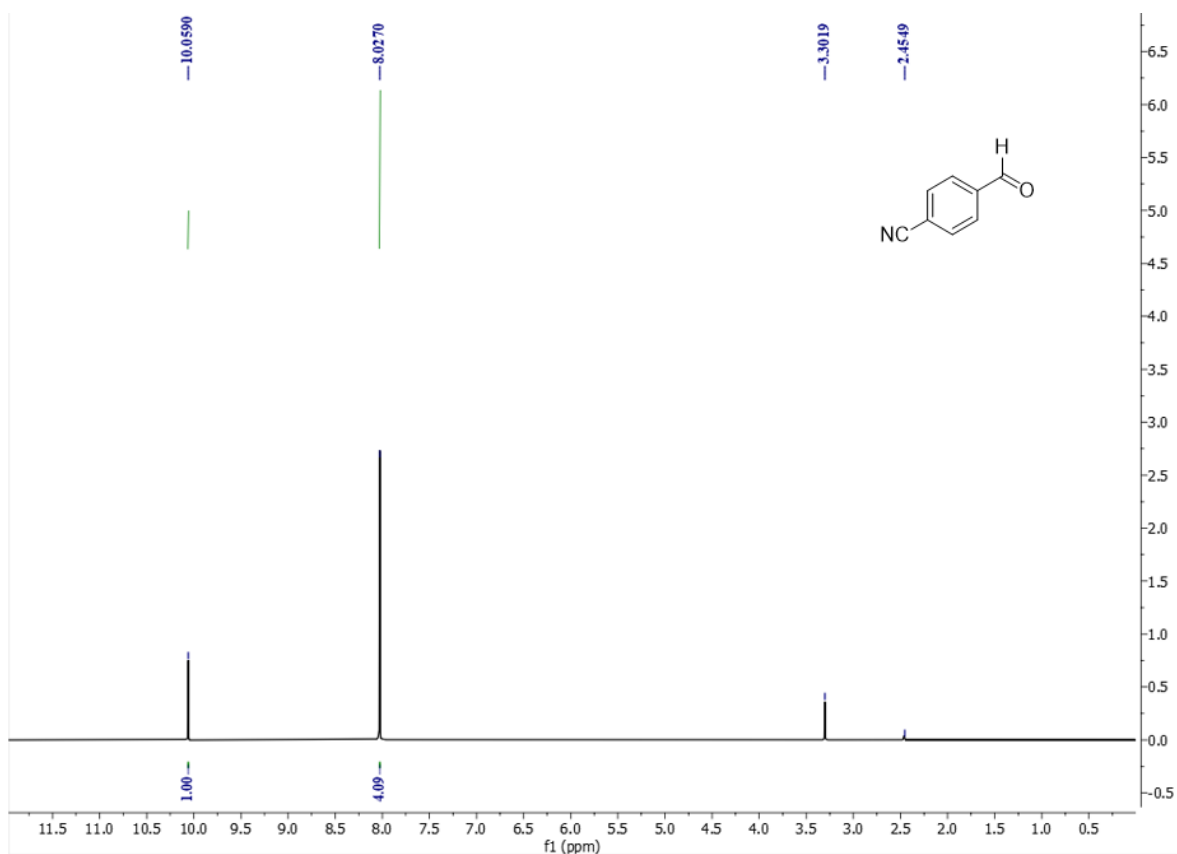


Fig.S19 ^1H NMR for 4-Cyano benzaldehyde (2j)

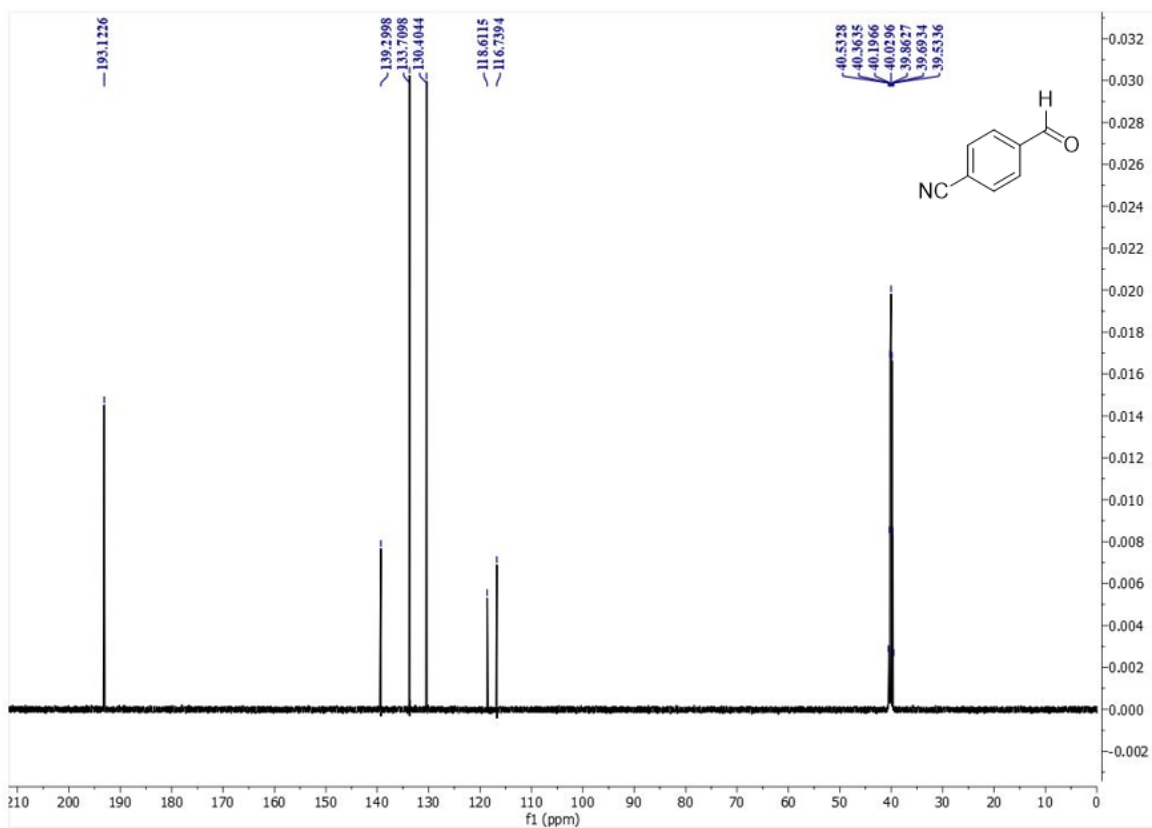


Fig.S20 ^{13}C NMR for 4-Cyanobenzaldehyde (2j)

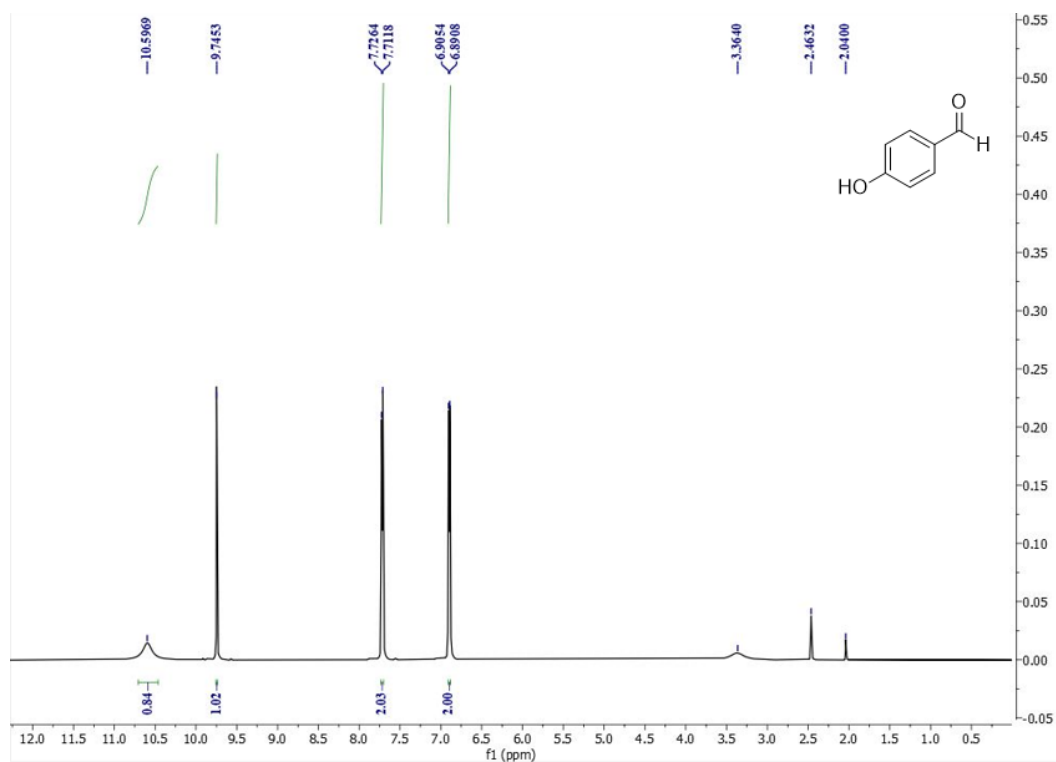


Fig.S21 ^1H NMR for 4-Hydroxybenzaldehyde (2k)

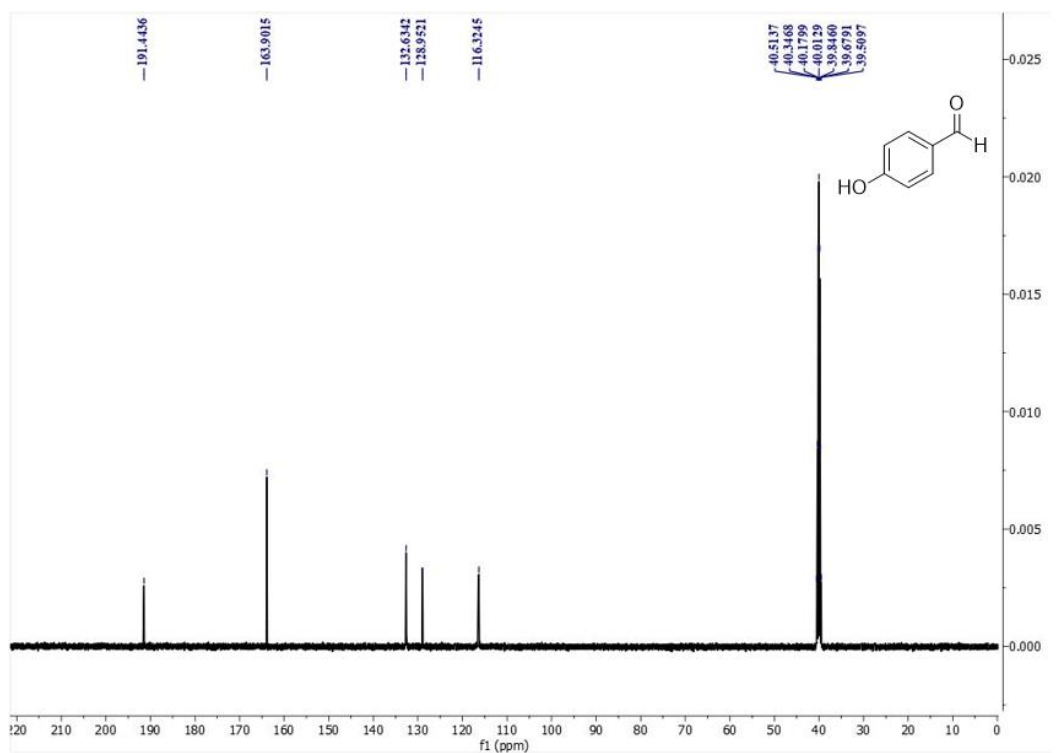


Fig.S22 ^{13}C NMR for 4-Hydroxybenzaldehyde (2k)

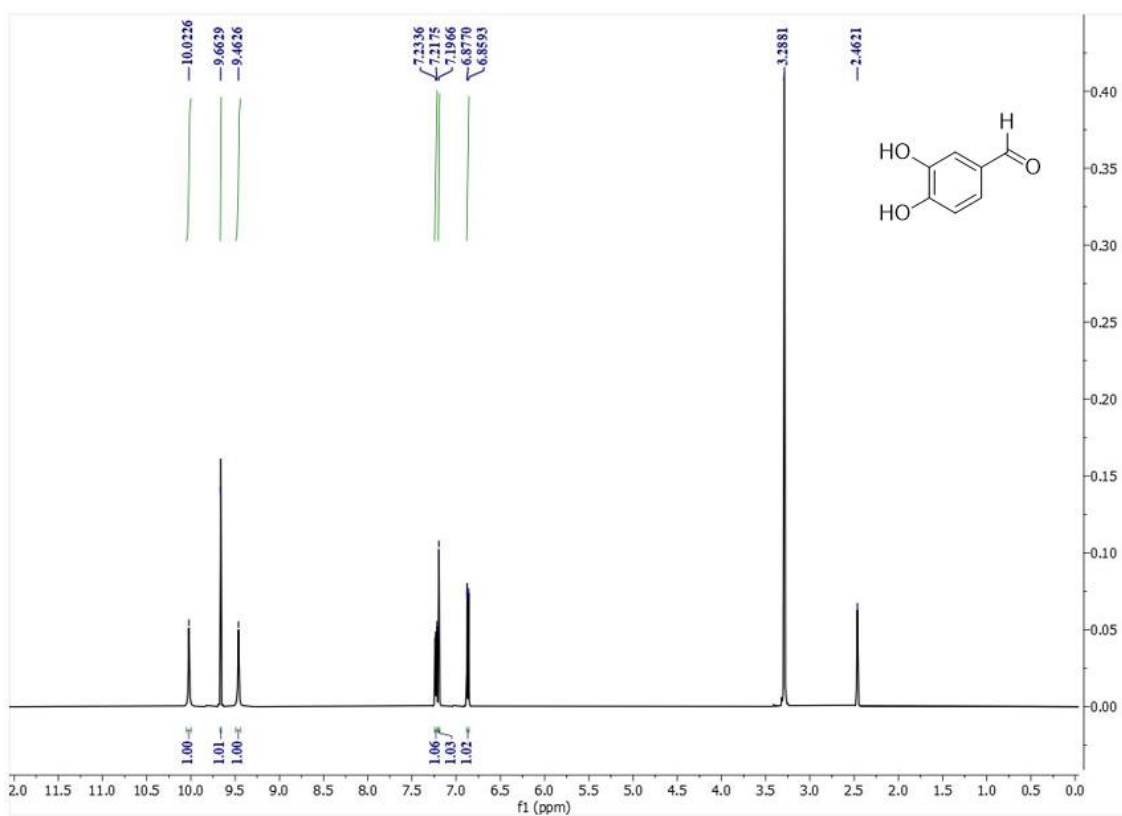


Fig.S23 ^1H NMR for 3,4-dihydroxy benzaldehyde (2l)

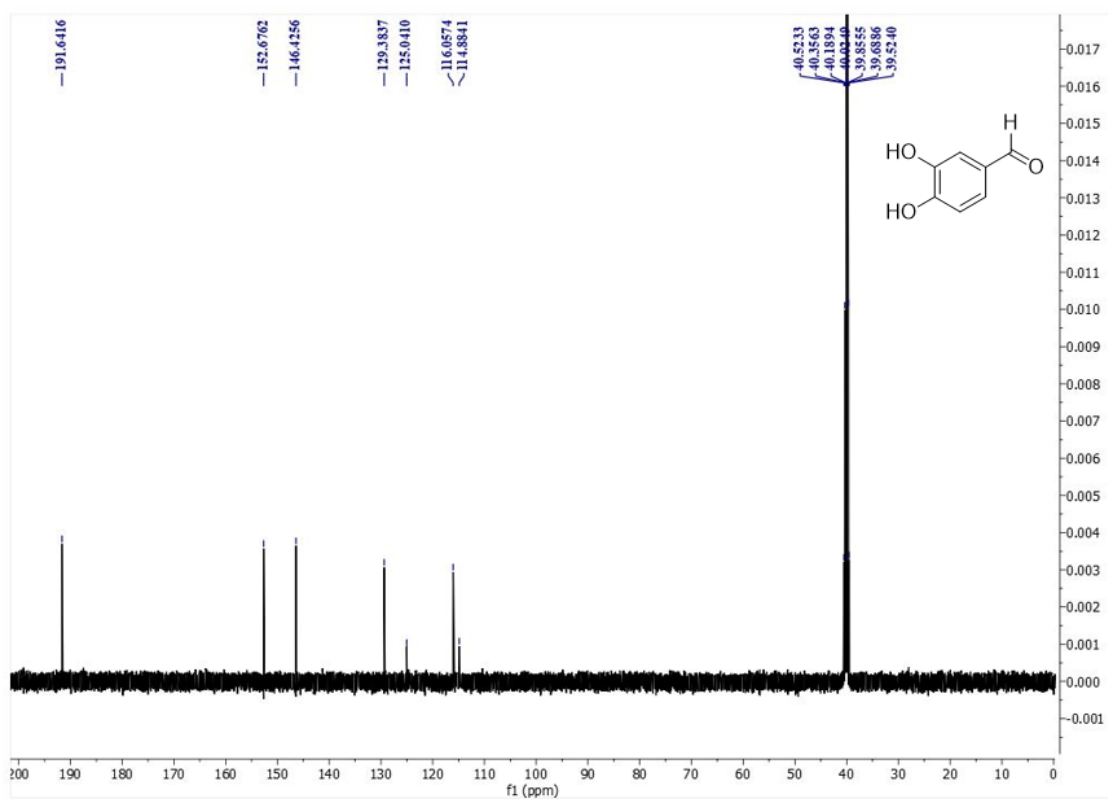


Fig.S24 ^{13}C NMR for 3,4-dihydroxy benzaldehyde (2l)

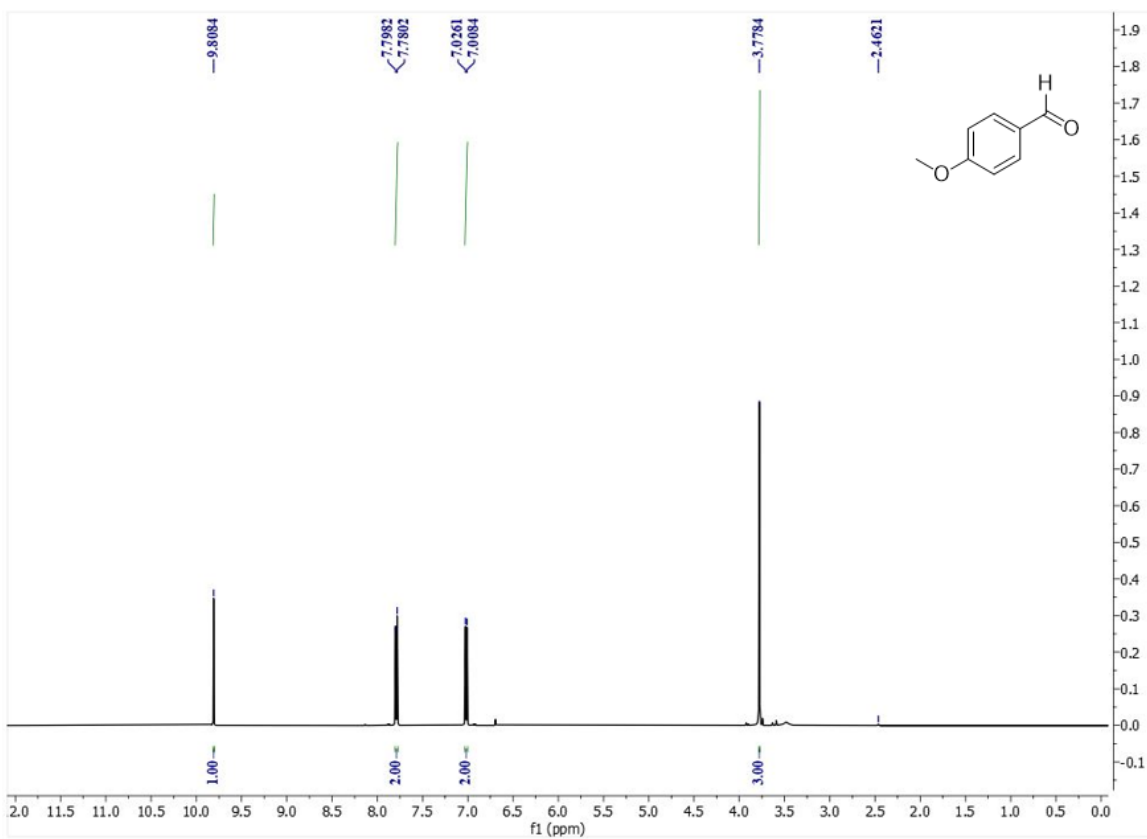


Fig.S24 ^1H NMR for 4-Methoxy benzaldehyde (2m)

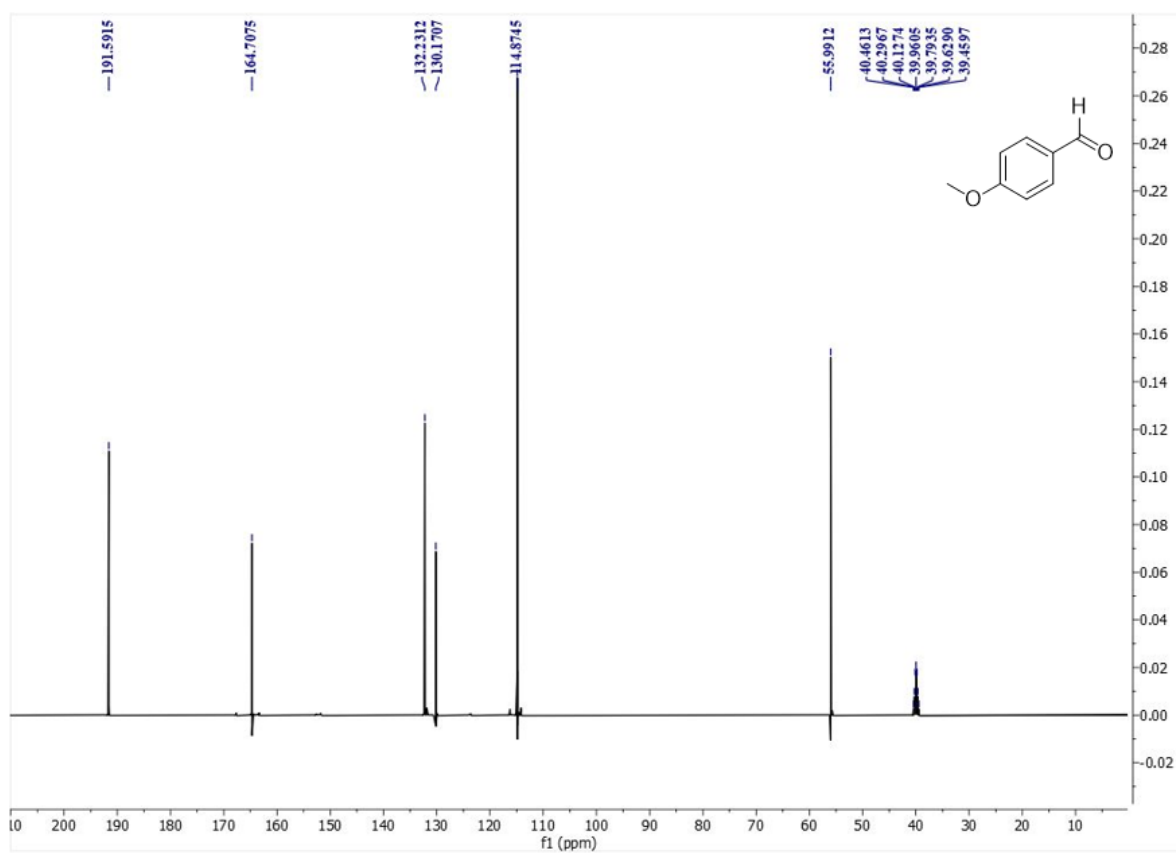


Fig.S26 ^{13}C NMR for 4-Methoxy benzaldehyde (2m)

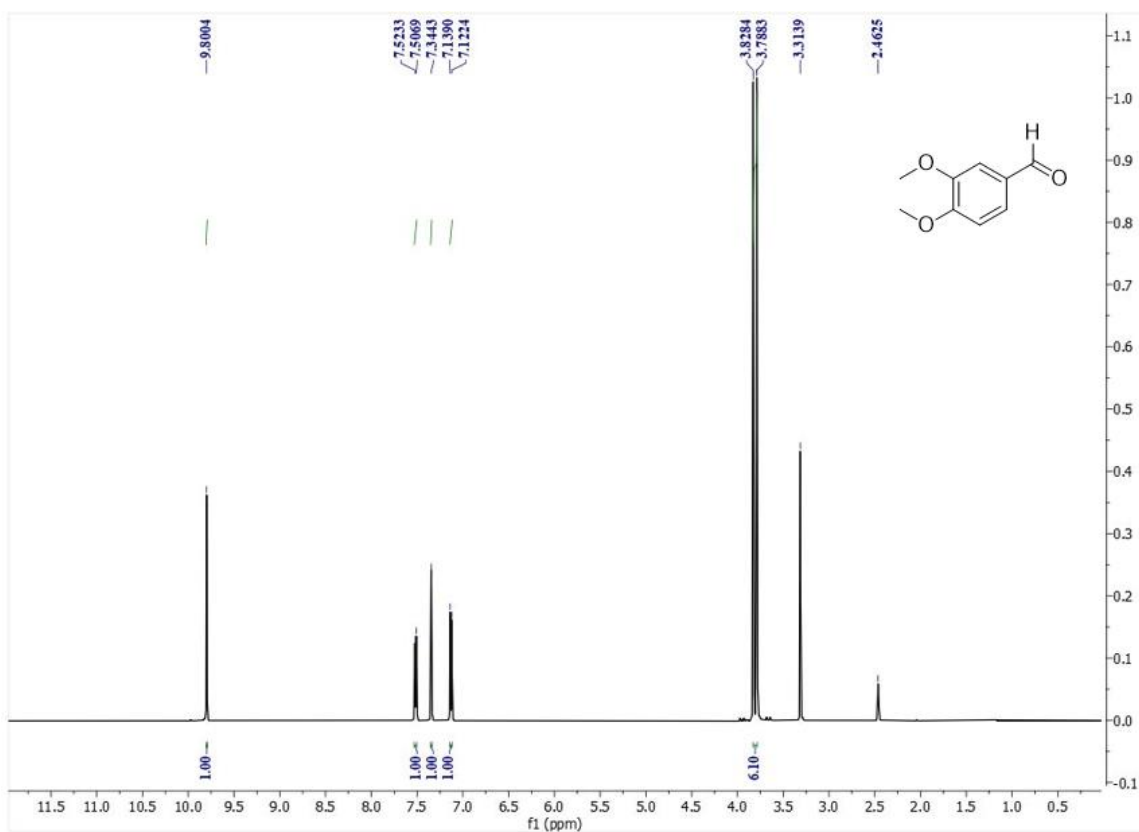


Fig.S27 ^1H NMR for 3,4-dimethoxy benzaldehyde (2n)

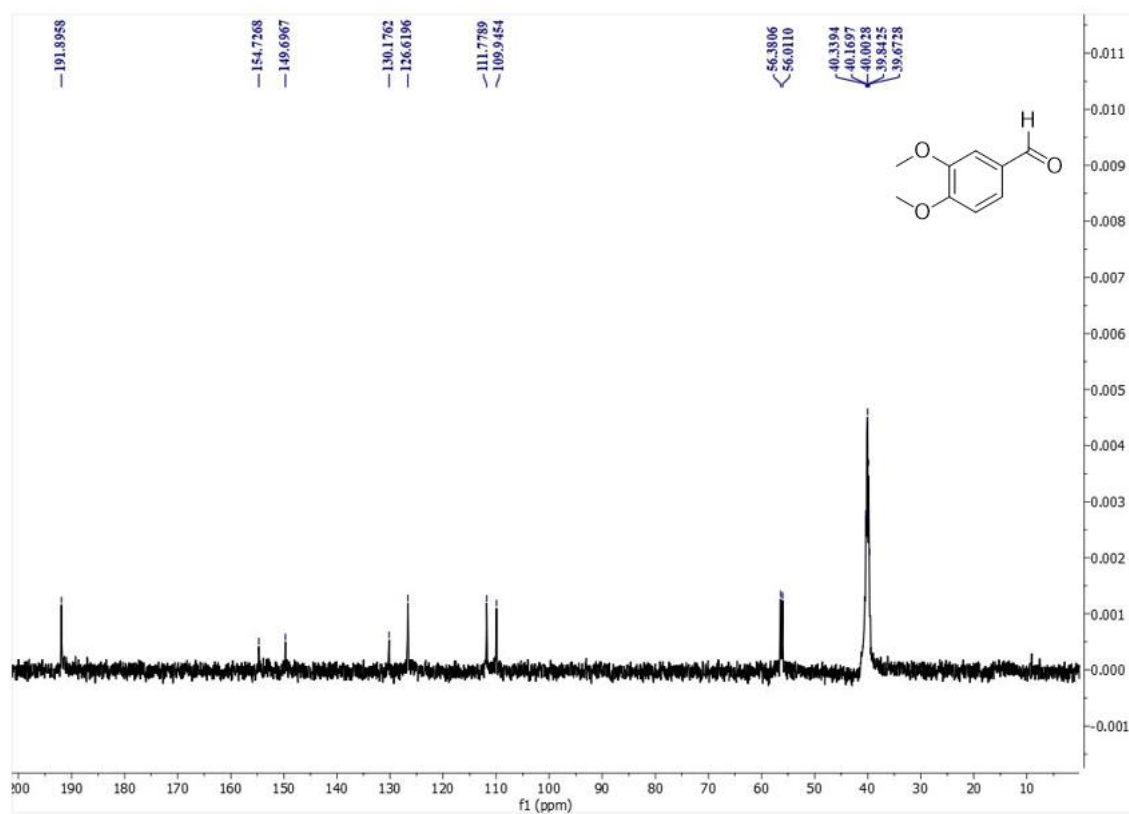


Fig.S28 ^{13}C NMR for 3,4-dimethoxy benzaldehyde (2n)

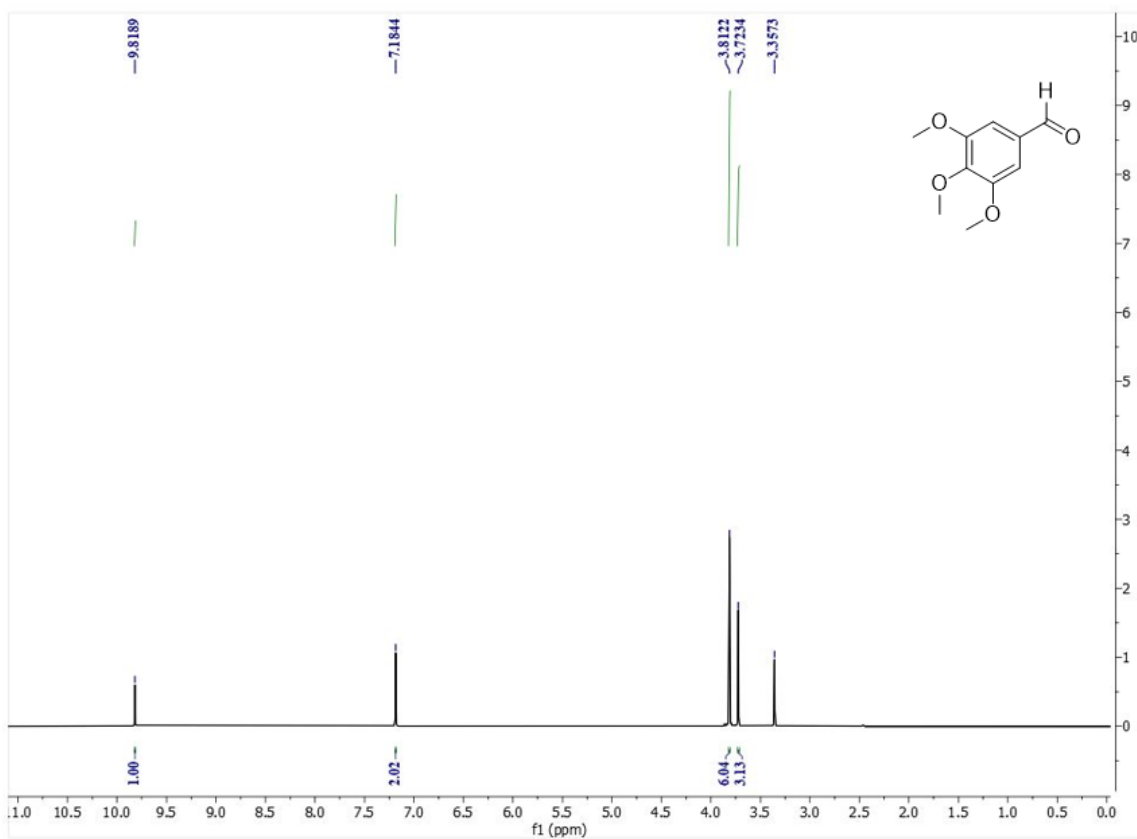


Fig.S29 ^1H NMR for 3,4,5-Trimethoxy benzaldehyde (2o)

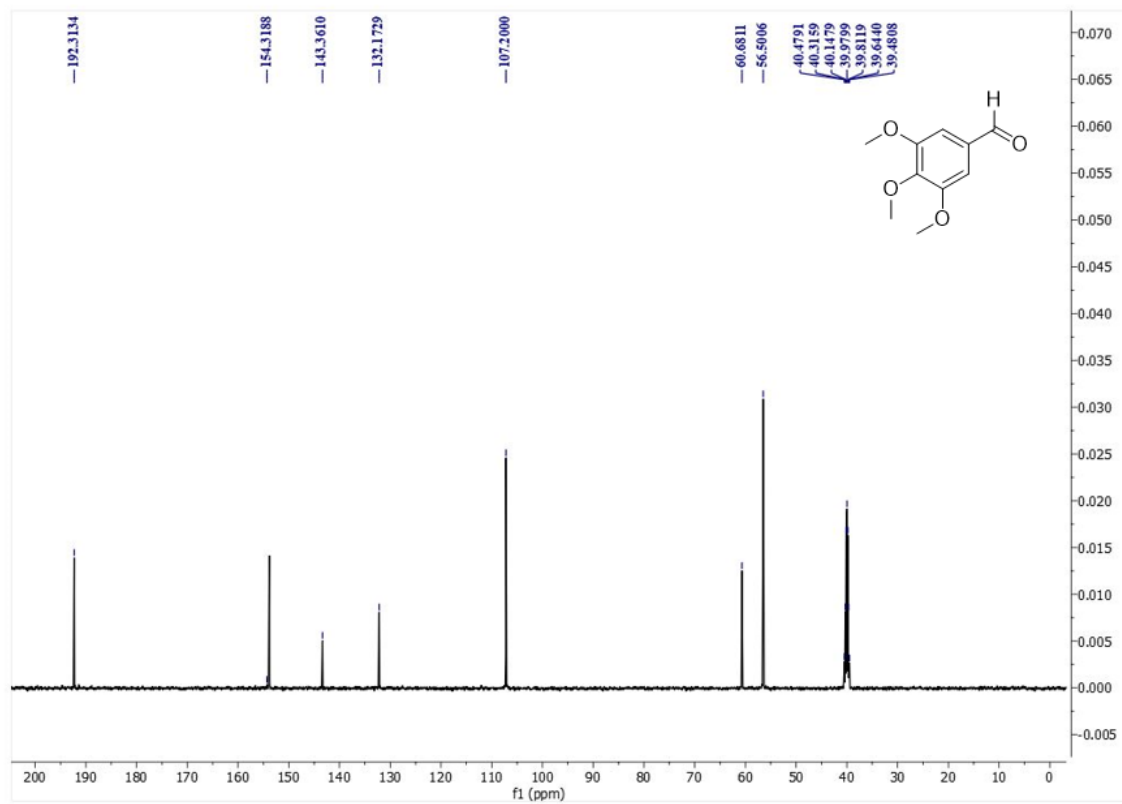


Fig.S30 ^{13}C NMR for 3,4,5-Trimethoxy benzaldehyde (2o)

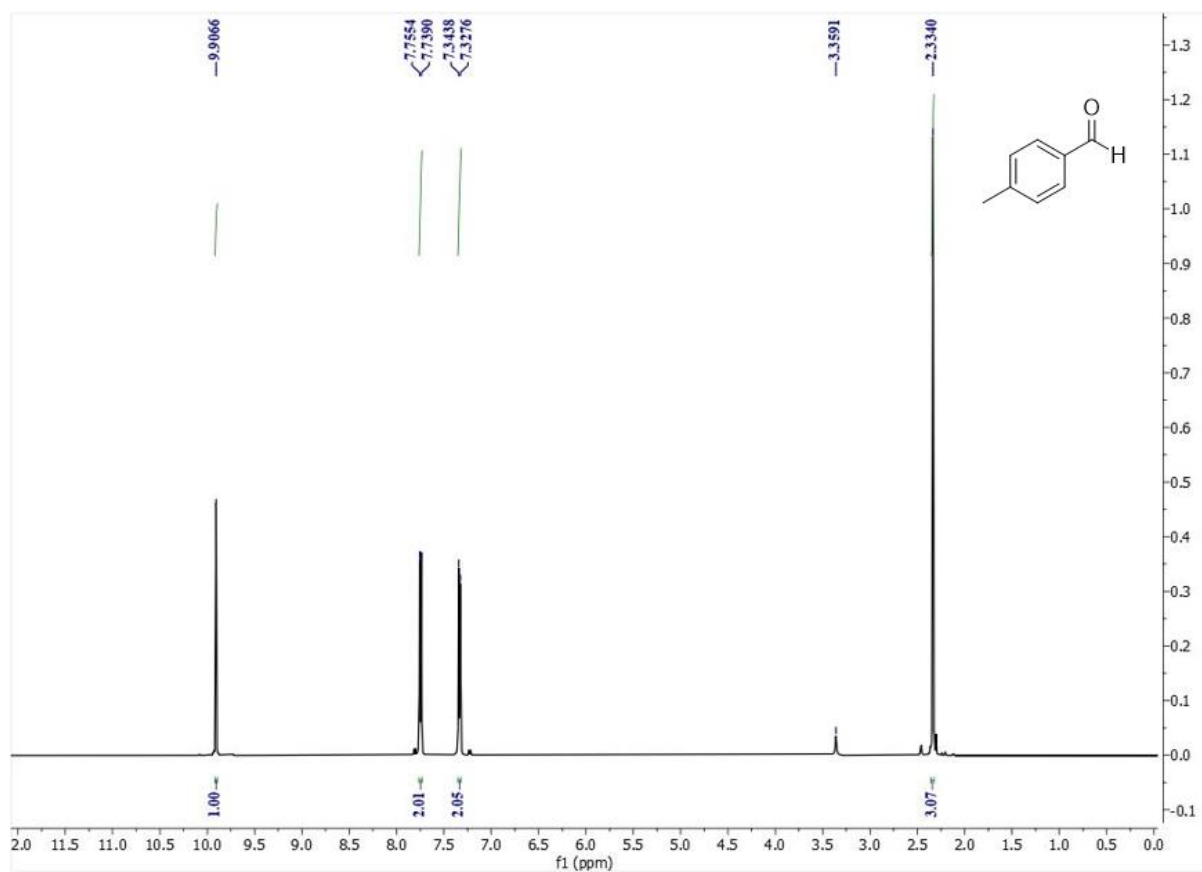


Fig.31 ^1H NMR for 4-Methyl benzaldehyde (2p)

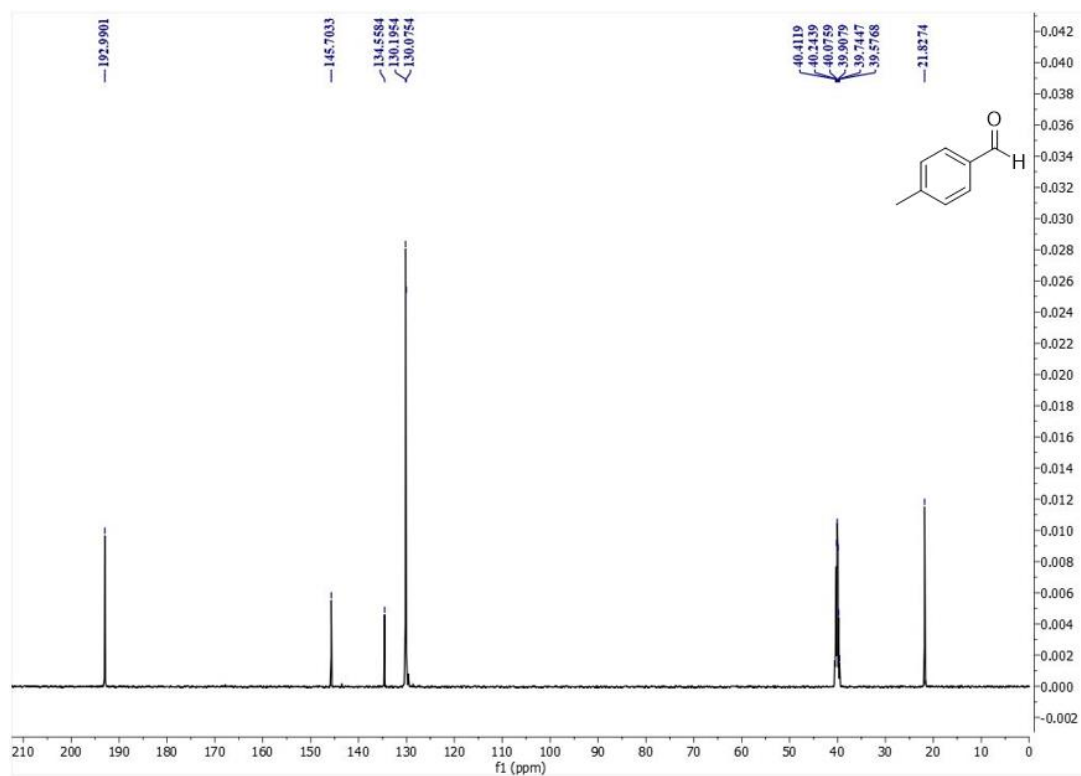


Fig.S32 ^{13}C NMR for 4-Methyl benzaldehyde (2p)

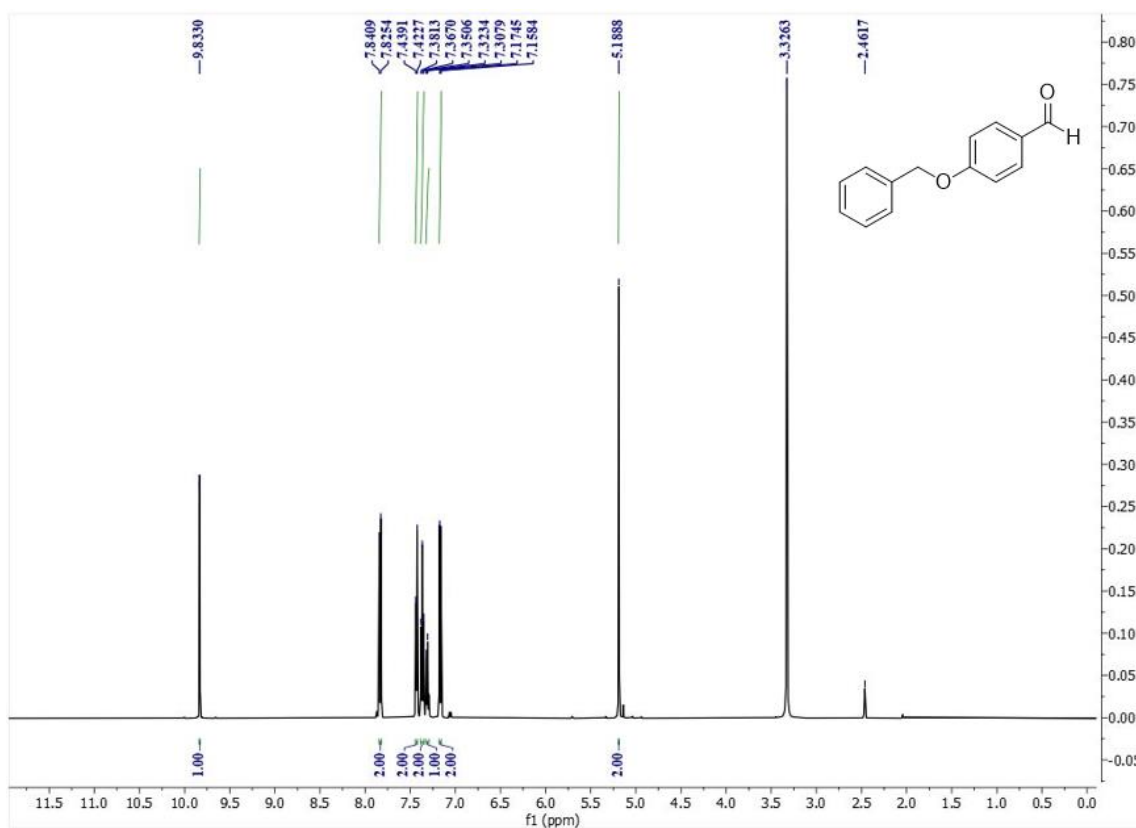


Fig.S33 ^1H NMR for 4-Benzyloxy benzaldehyde (2q)

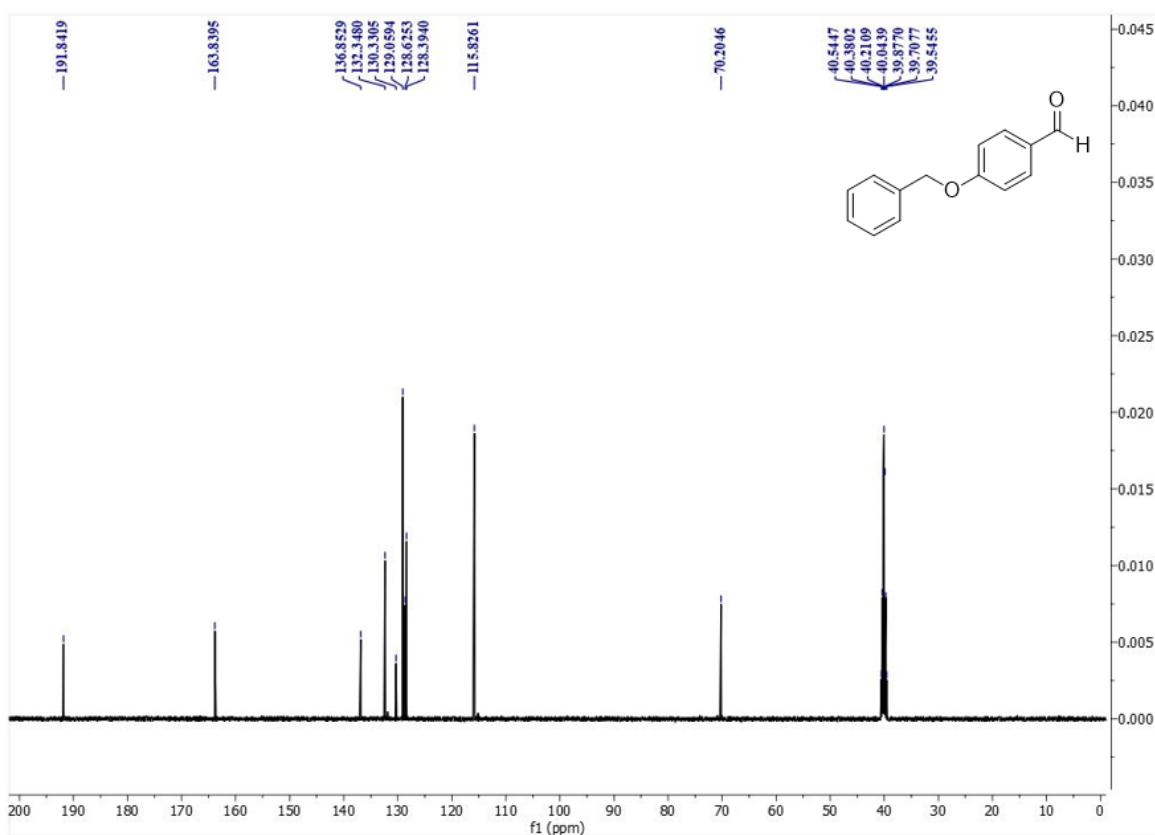


Fig.S34 ^{13}C NMR for 4-Benzyloxy benzaldehyde (2q)

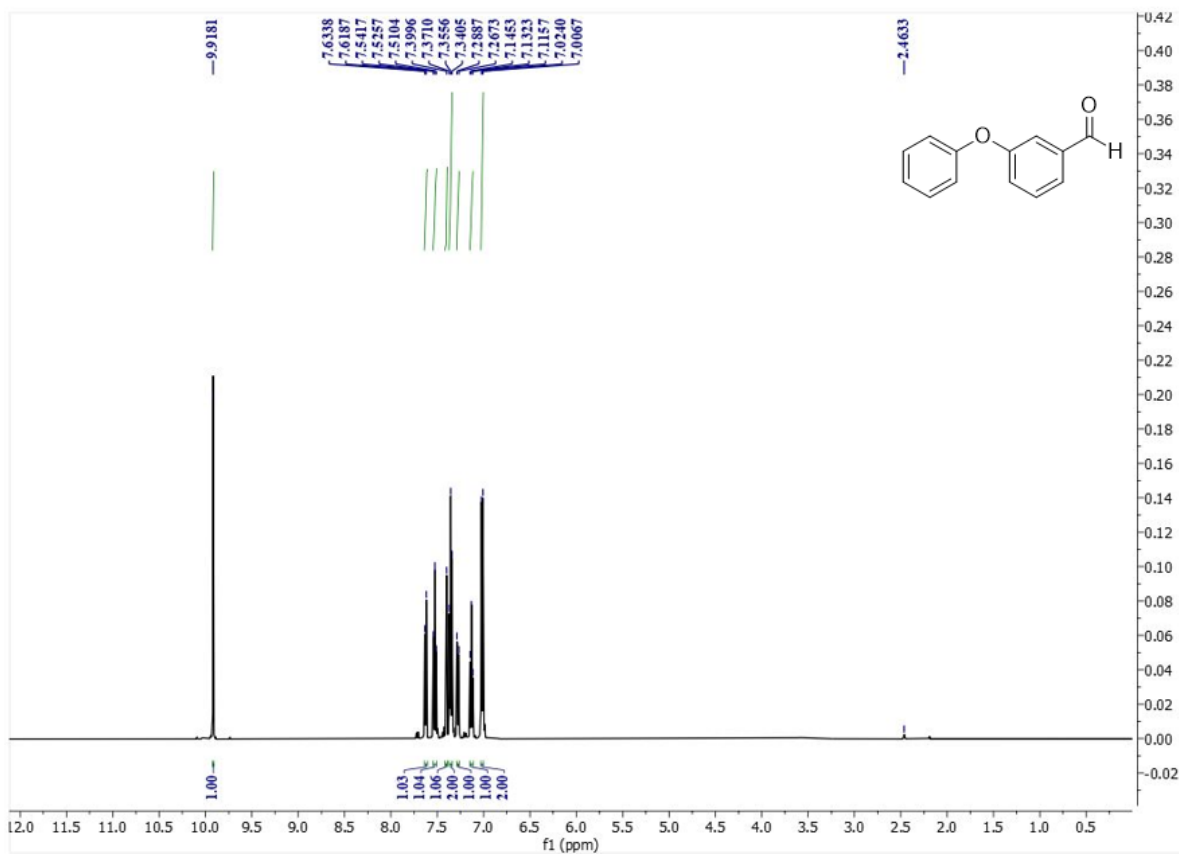


Fig.S35 ^1H NMR for 3-Phenoxybenzaldehyde (2r)

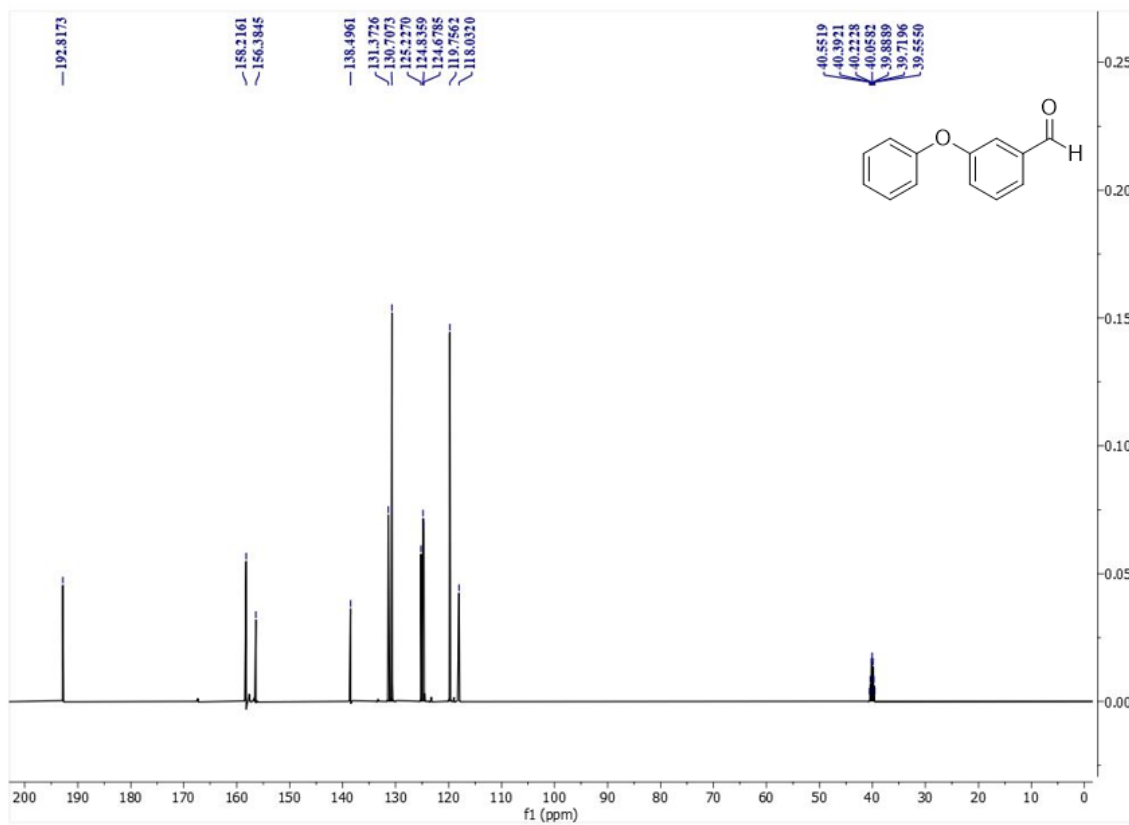


Fig.S36 ^{13}C NMR for 3-Phenoxybenzaldehyde (2r)

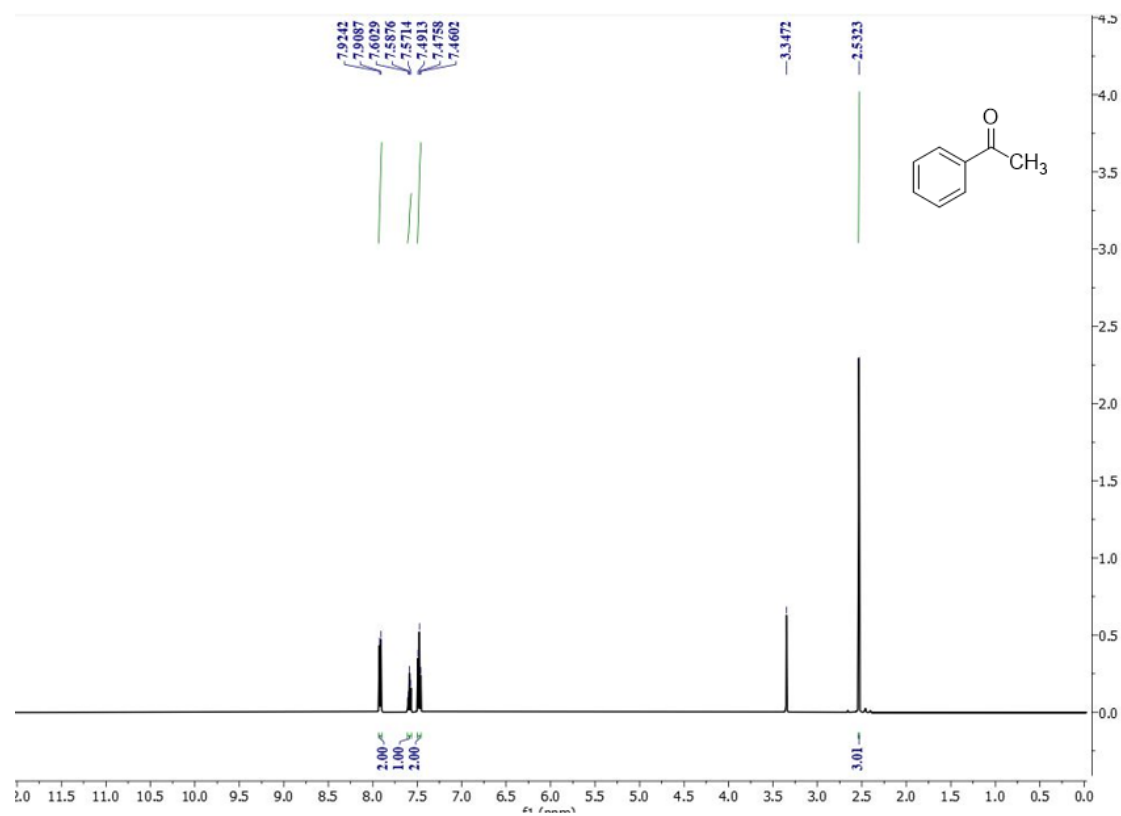


Fig.S37 ¹H NMR for Acetophenone (4a)

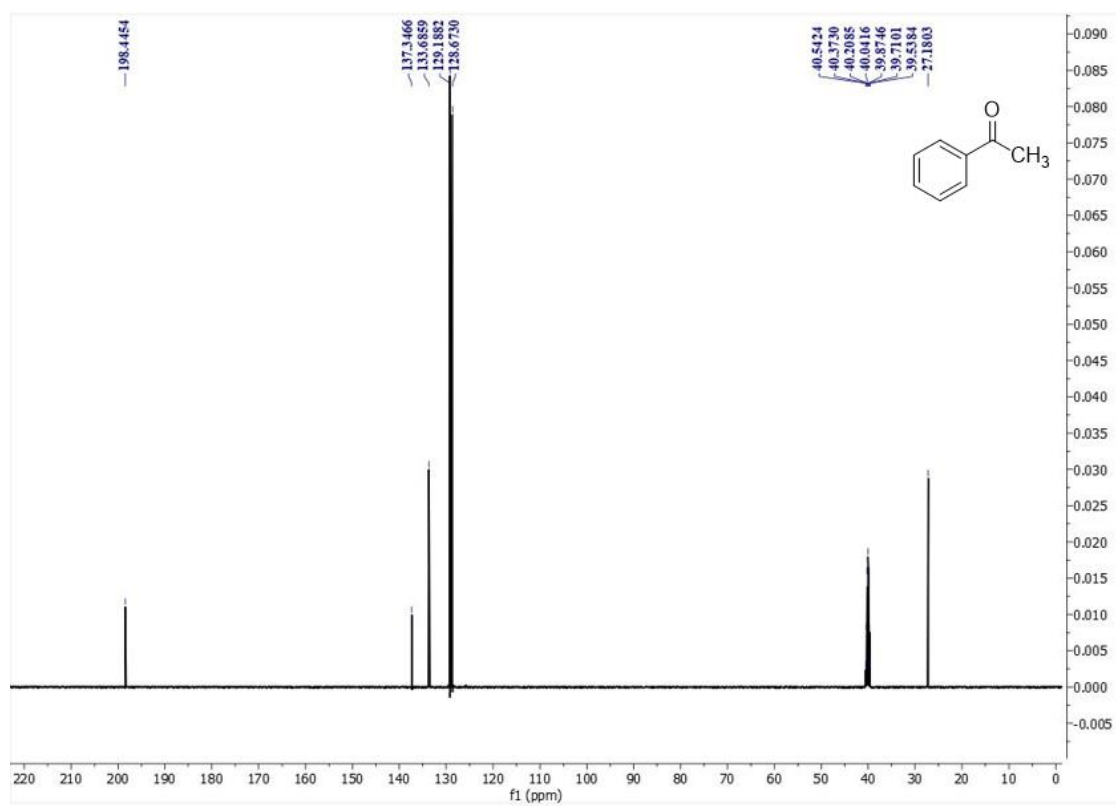


Fig.S38 ¹³C NMR for Acetophenone (4a)

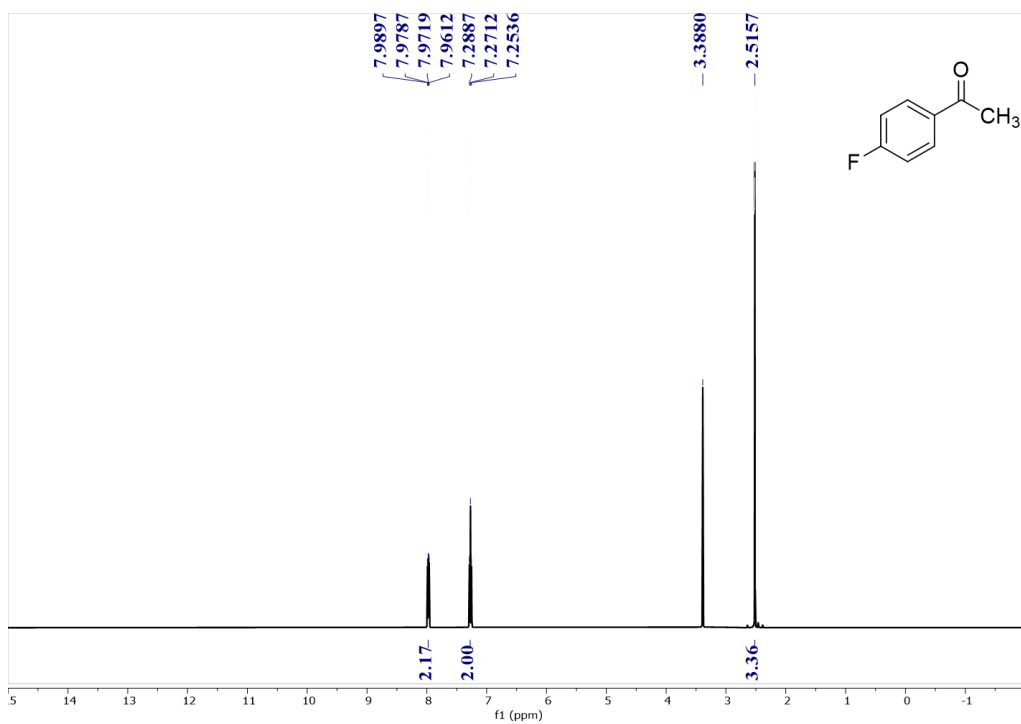


Fig.S39 ¹H NMR for 4-Fluoroacetophenone (4b)

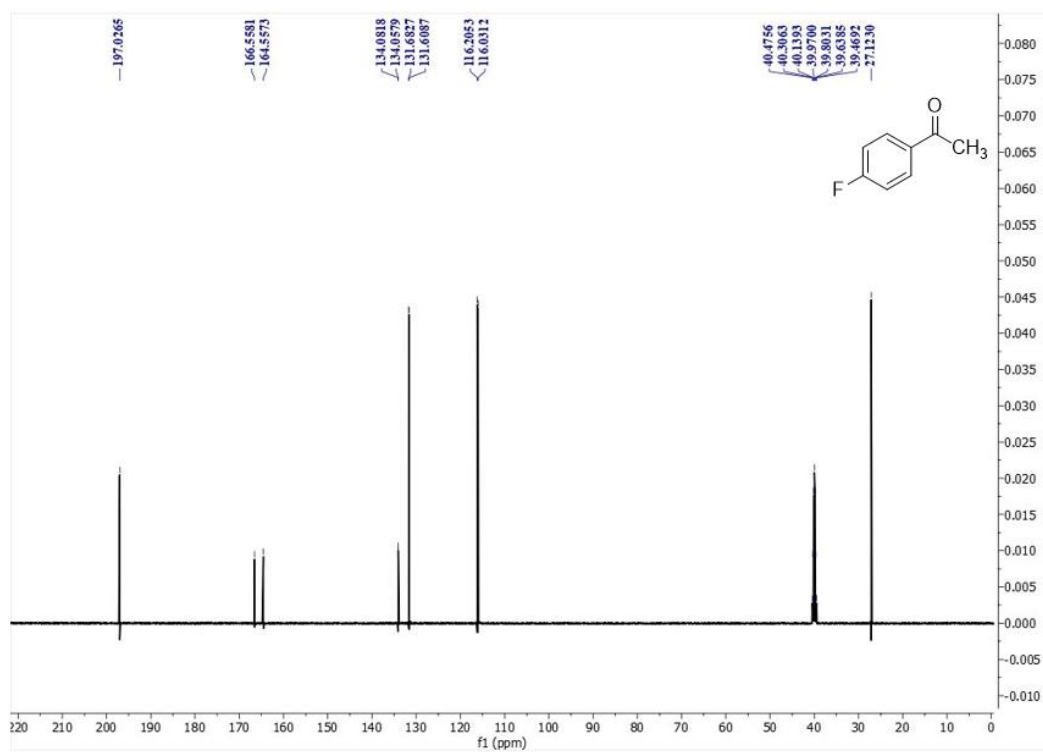


Fig.S40 ¹³C NMR for 4-Fluoroacetophenone (4b)

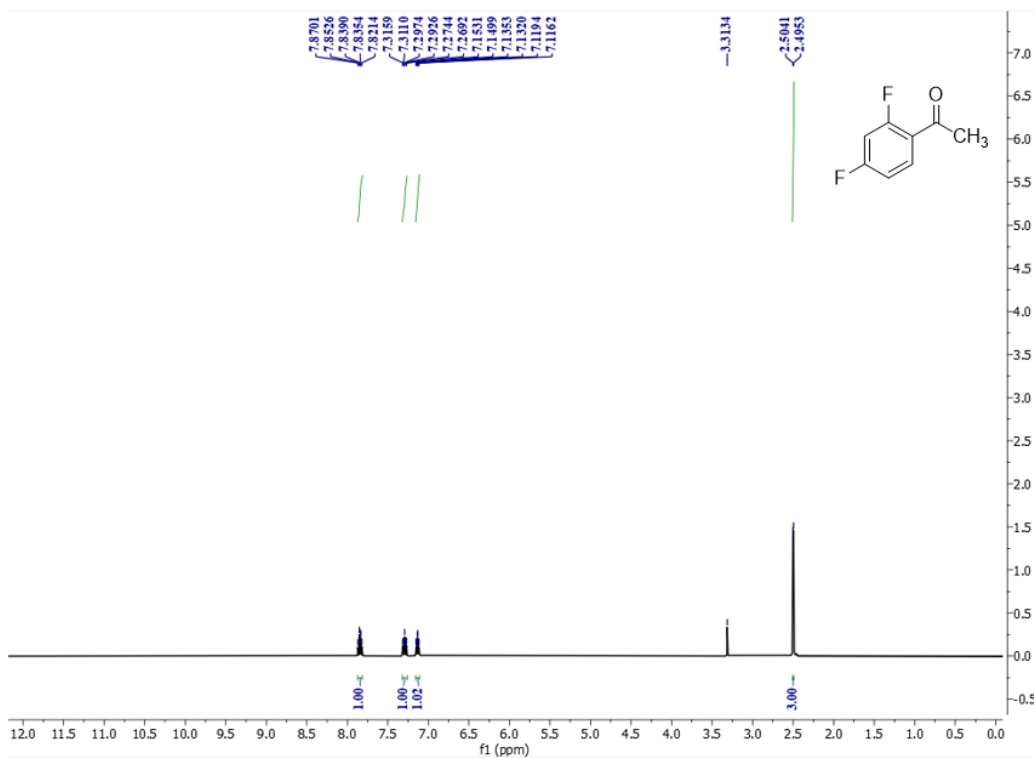


Fig.S41 ¹H NMR for 2,4-Difluoroacetophenone (4c)

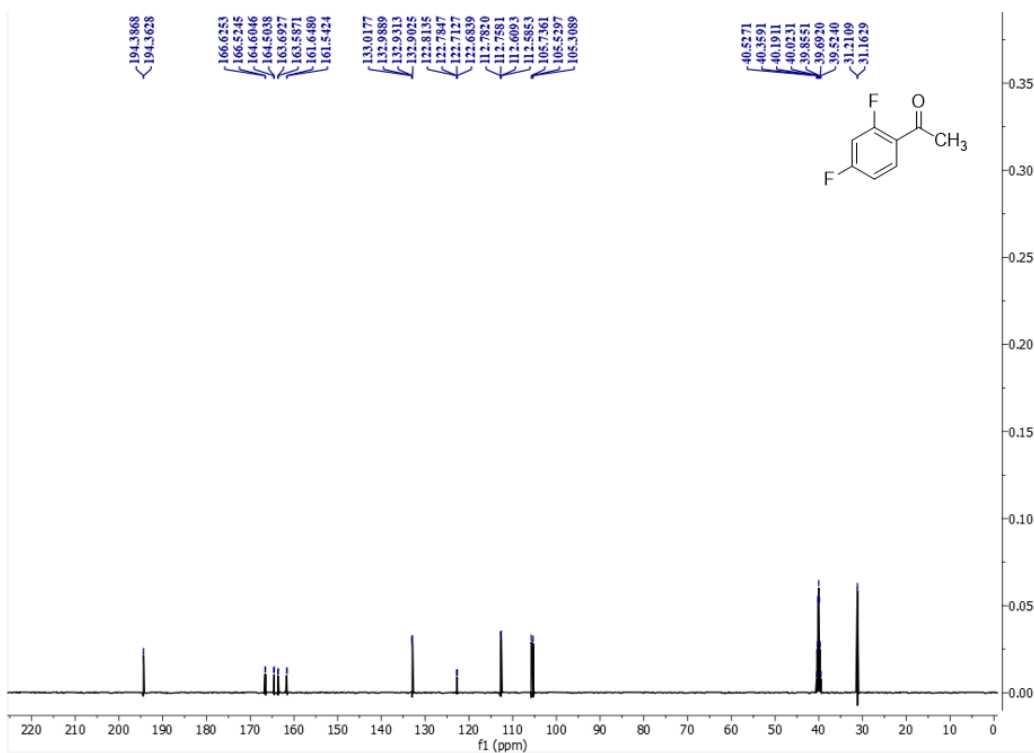


Fig.S42 ¹³C NMR for 2,4-Difluoroacetophenone (4c)

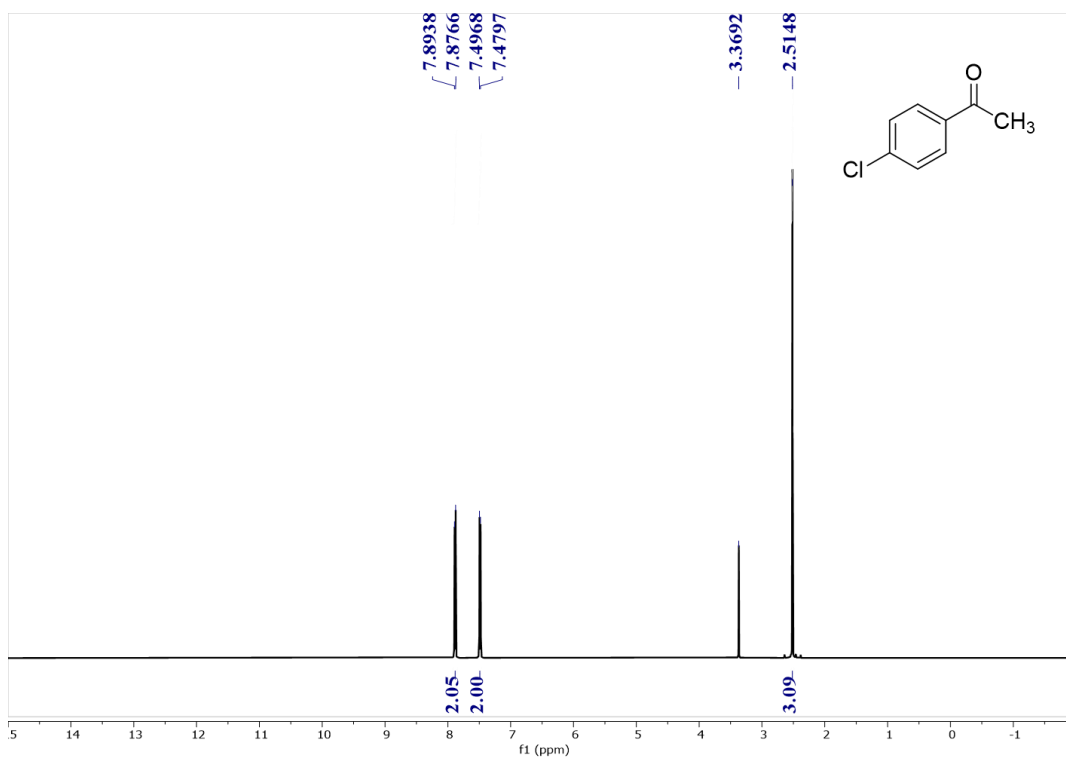


Fig.S43 ¹H NMR for 4-Chloroacetophenone (4d)

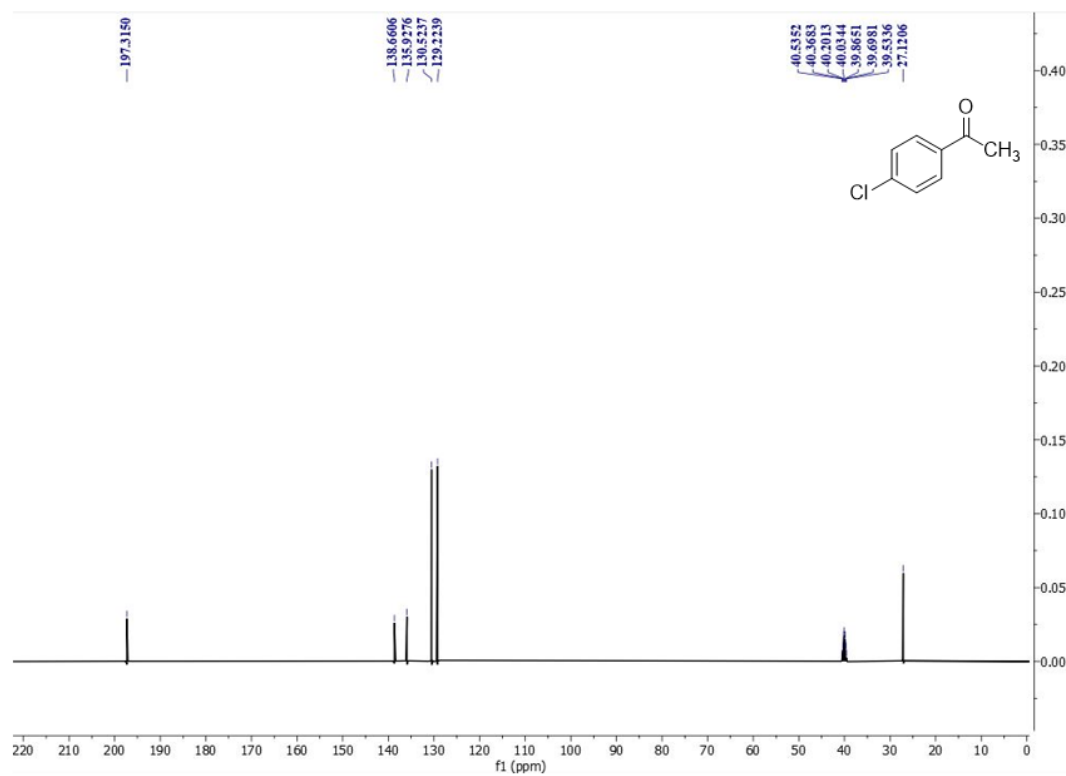


Fig.S44 ¹³C NMR for 4-Chloroacetophenone (4d)

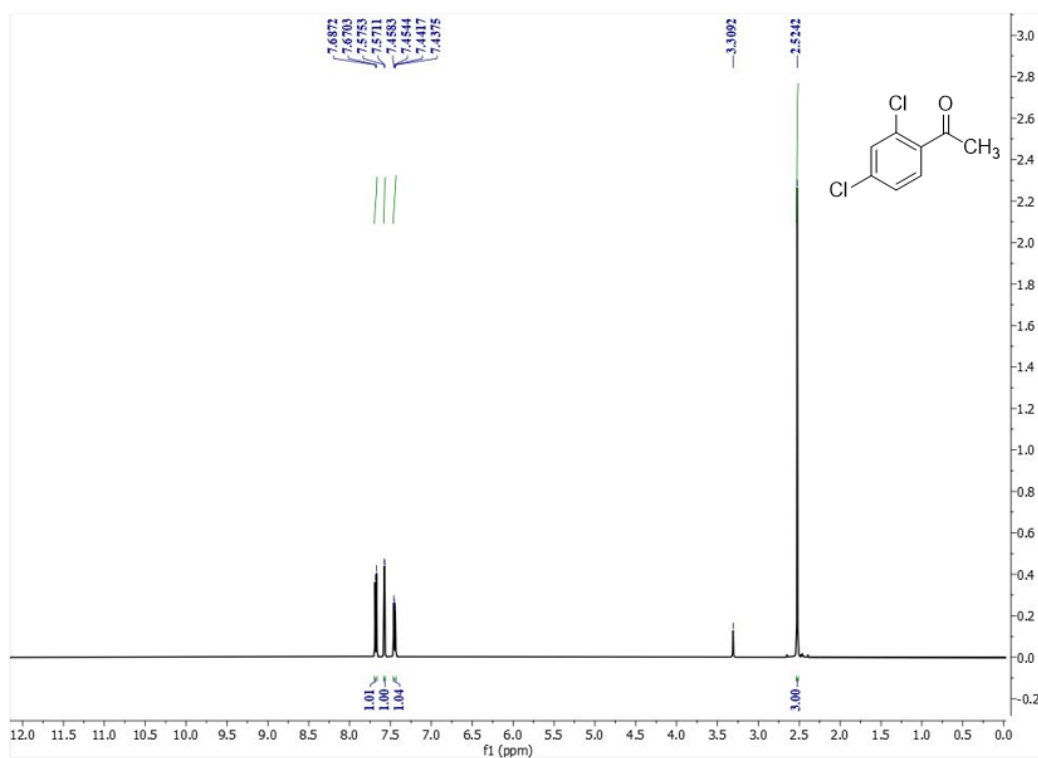


Fig.S45 ¹H NMR for 2,4-Dichloroacetophenone (4e)

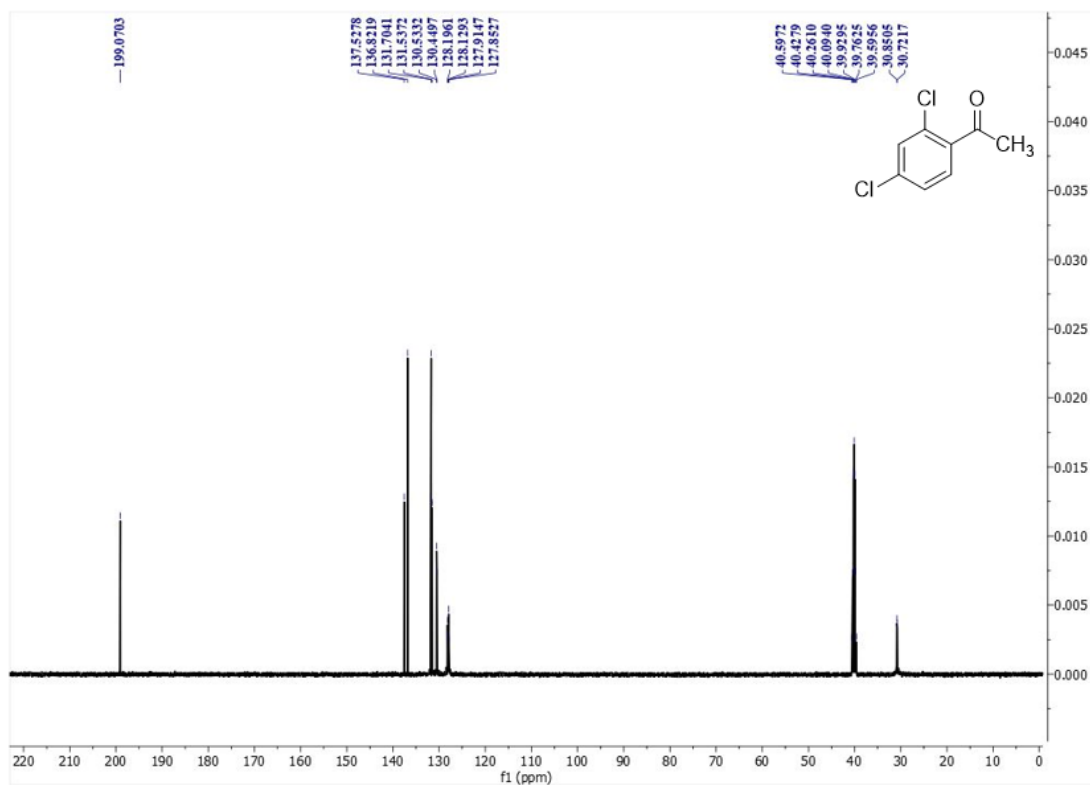


Fig.S46 ¹³C NMR for 2,4-Dichloroacetophenone (4e)

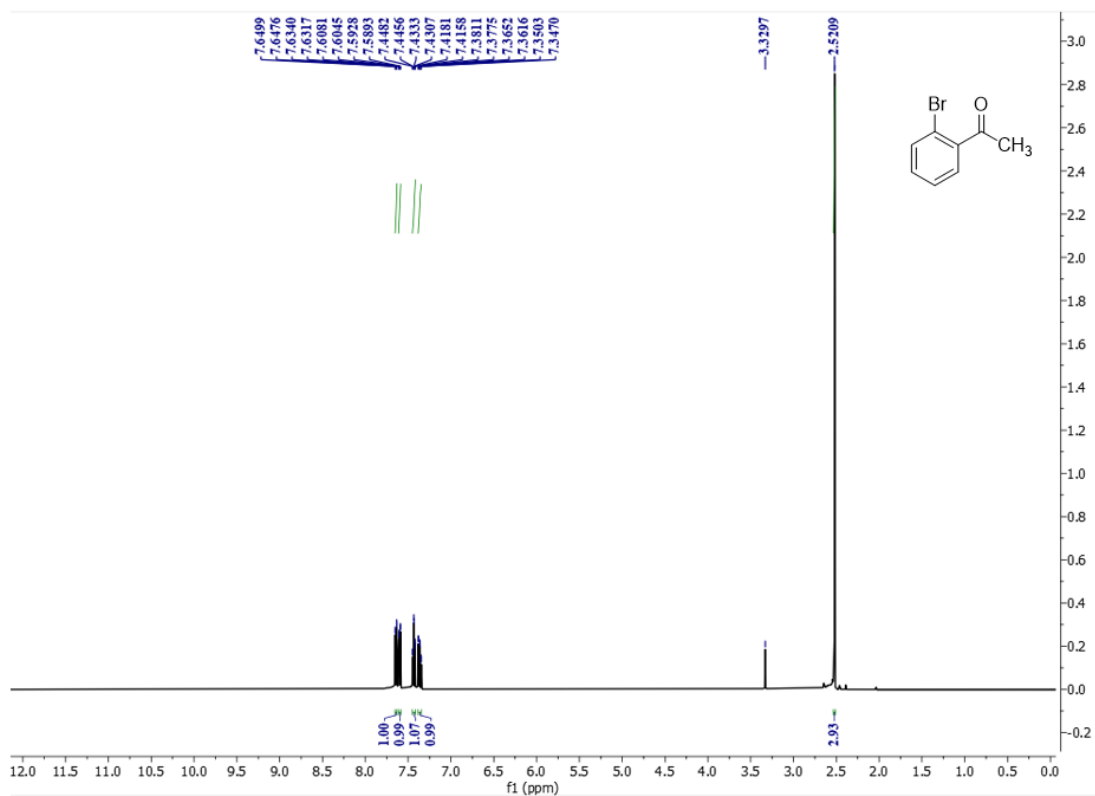


Fig.S47 ^1H NMR for 2-Bromoacetophenone (4f)

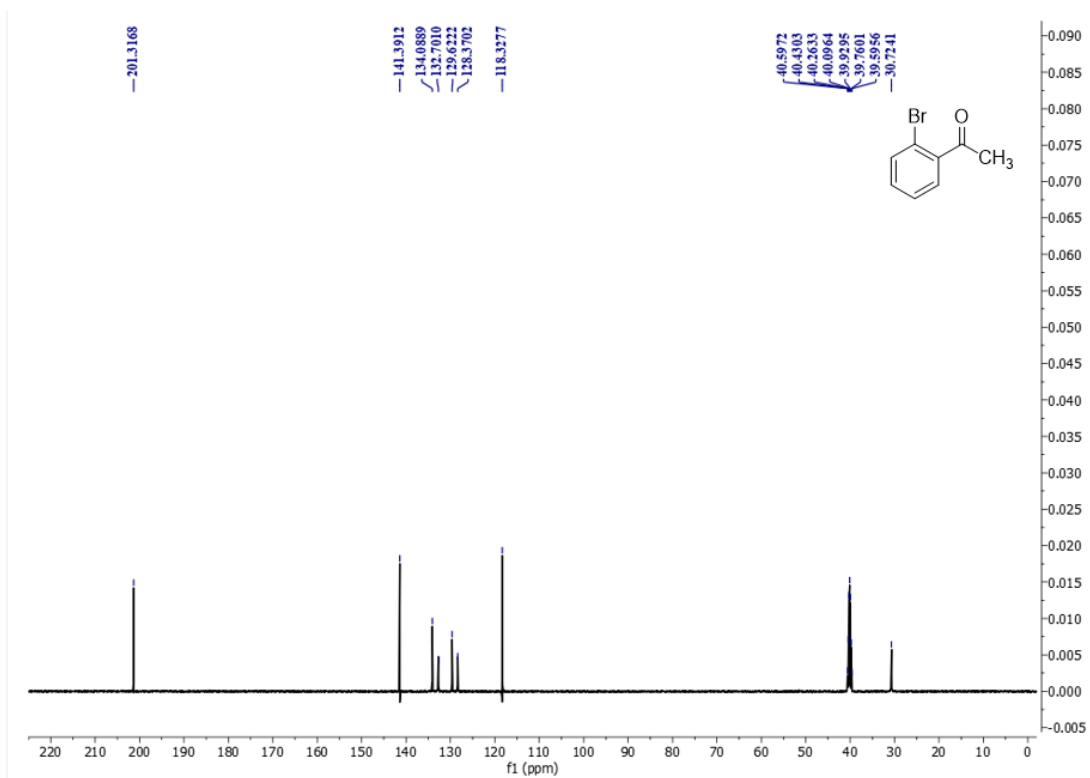


Fig.S48 ^{13}C NMR for 2-Bromoacetophenone (4f)

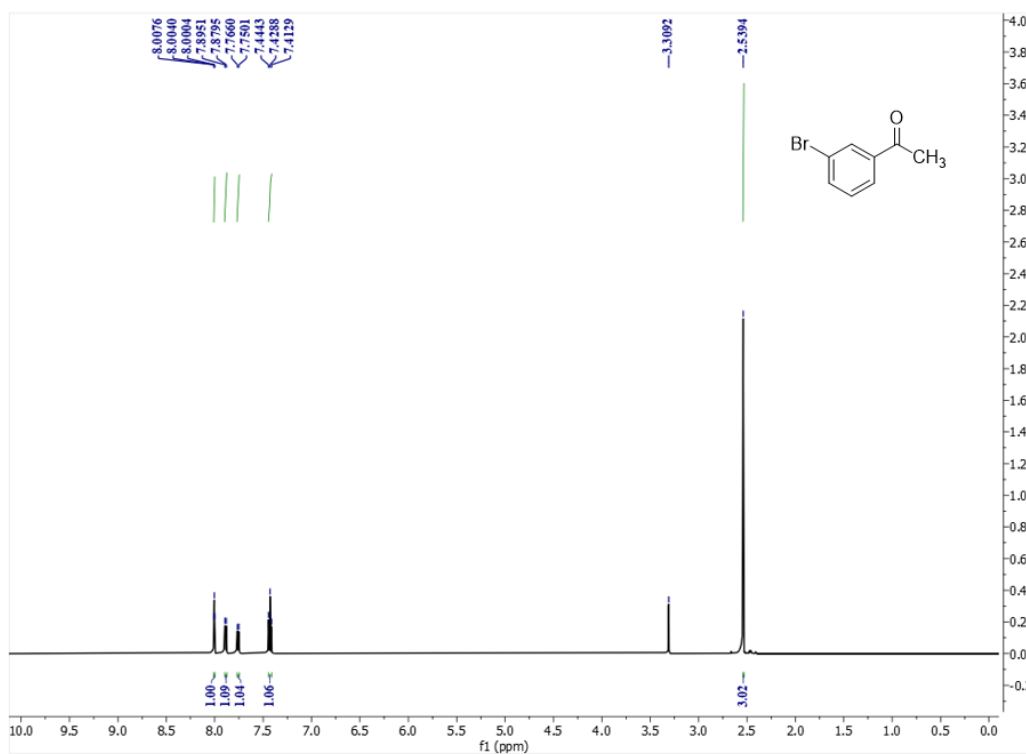


Fig.S49 ¹H NMR for 3-Bromoacetophenone (4g)

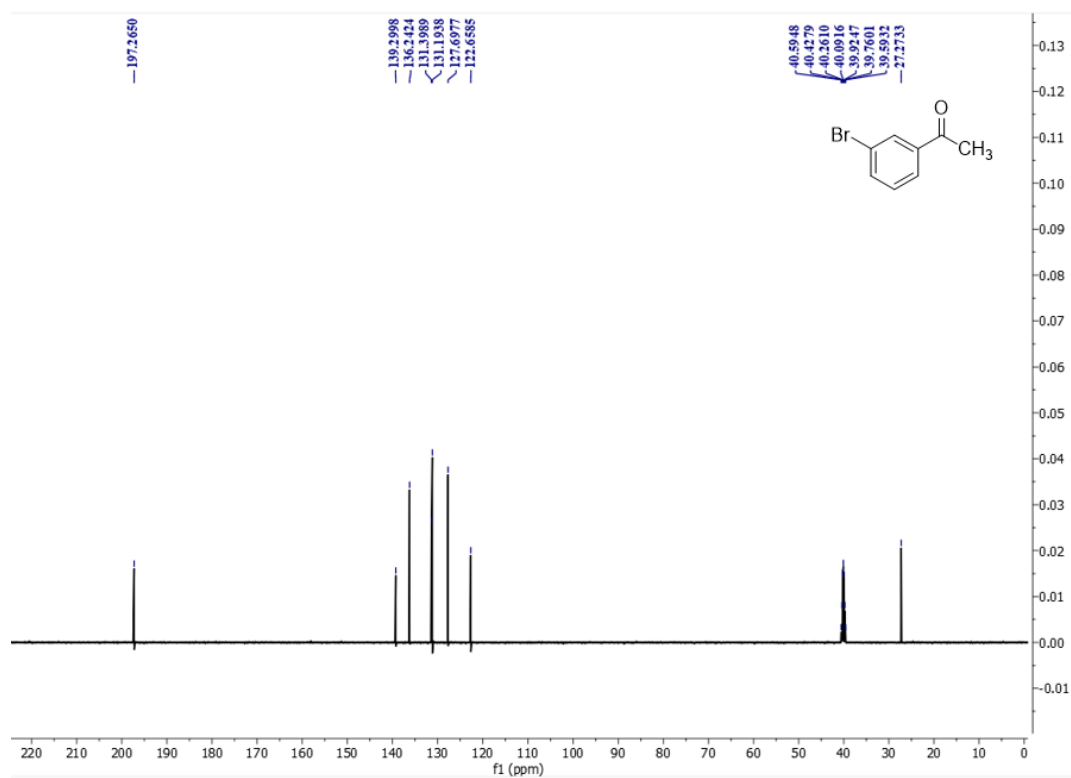


Fig.S50 ¹³C NMR for 3-Bromoacetophenone (4g)

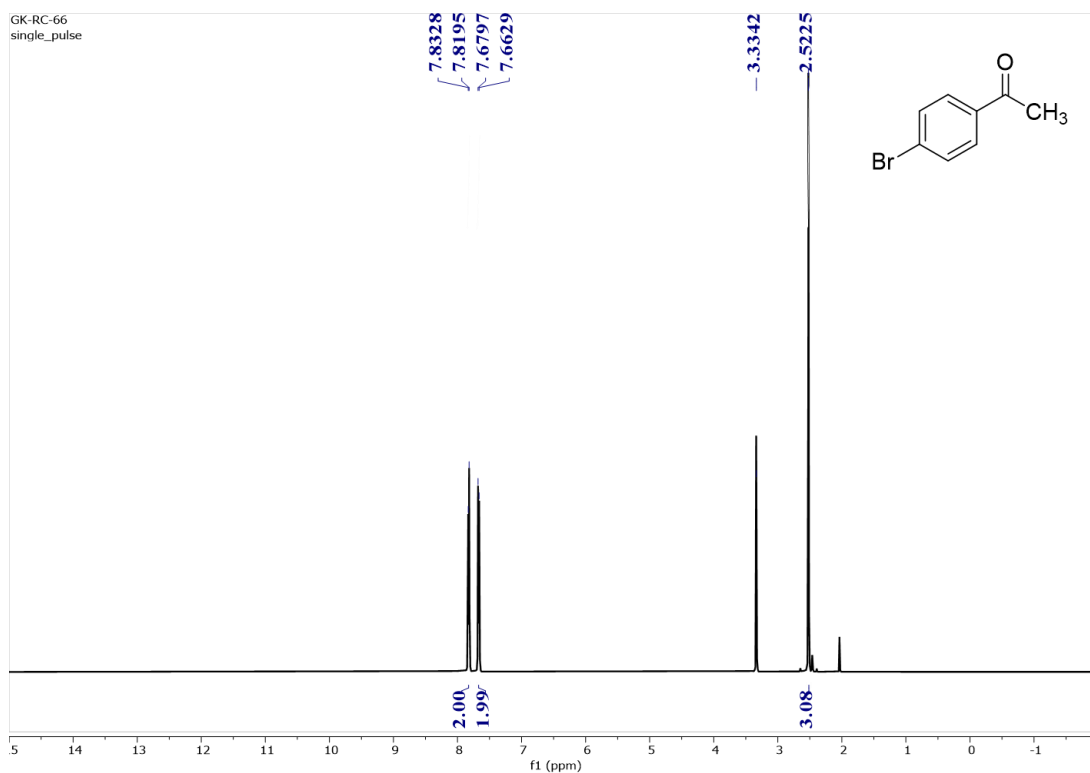


Fig.S51 ¹H NMR for 4-Bromoacetophenone (4h)

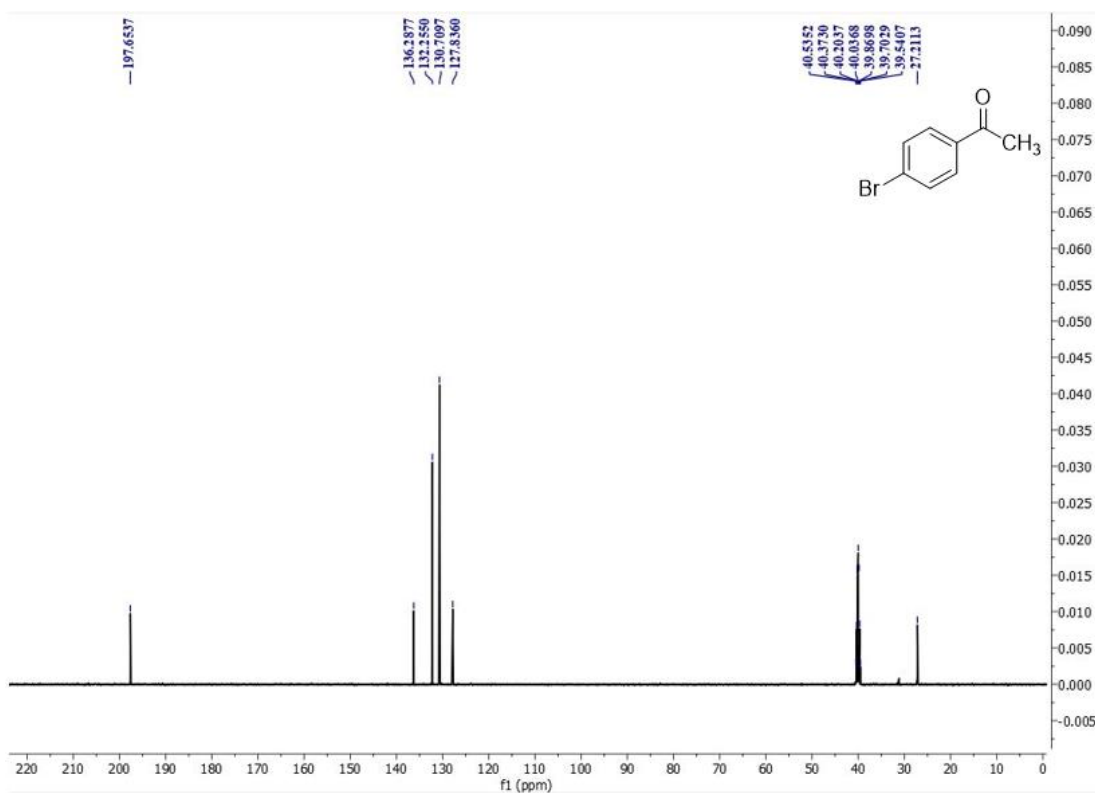


Fig.S52 ¹³C NMR for 4-Bromoacetophenone (4h)

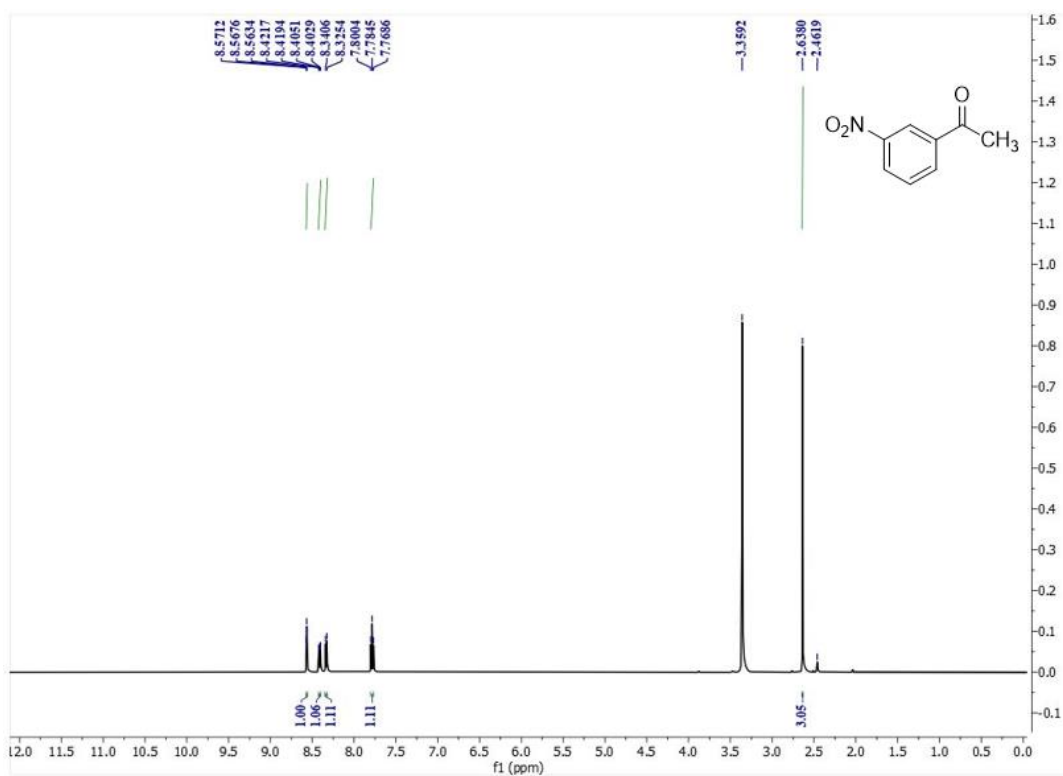


Fig.S53 ¹H NMR for 3-Nitroacetophenone (4i)

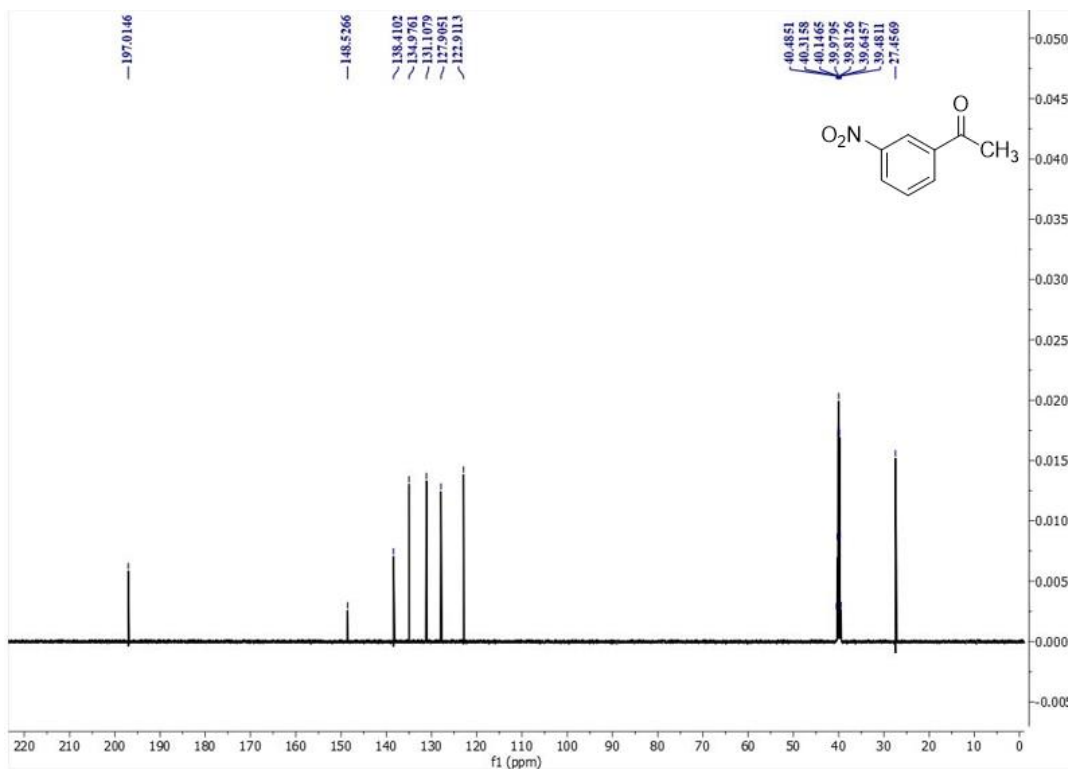


Fig.S54 ¹³C NMR for 3-Nitroacetophenone (4i)

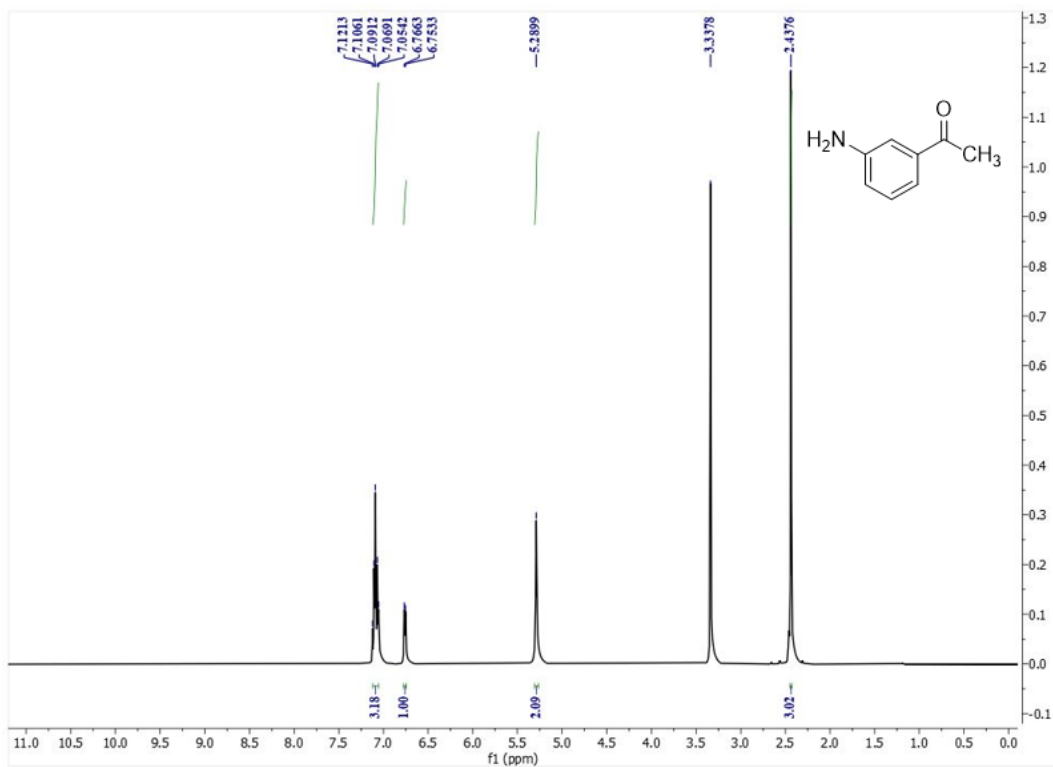


Fig.S55 ^1H NMR for 3-Aminoacetophenone (4j)

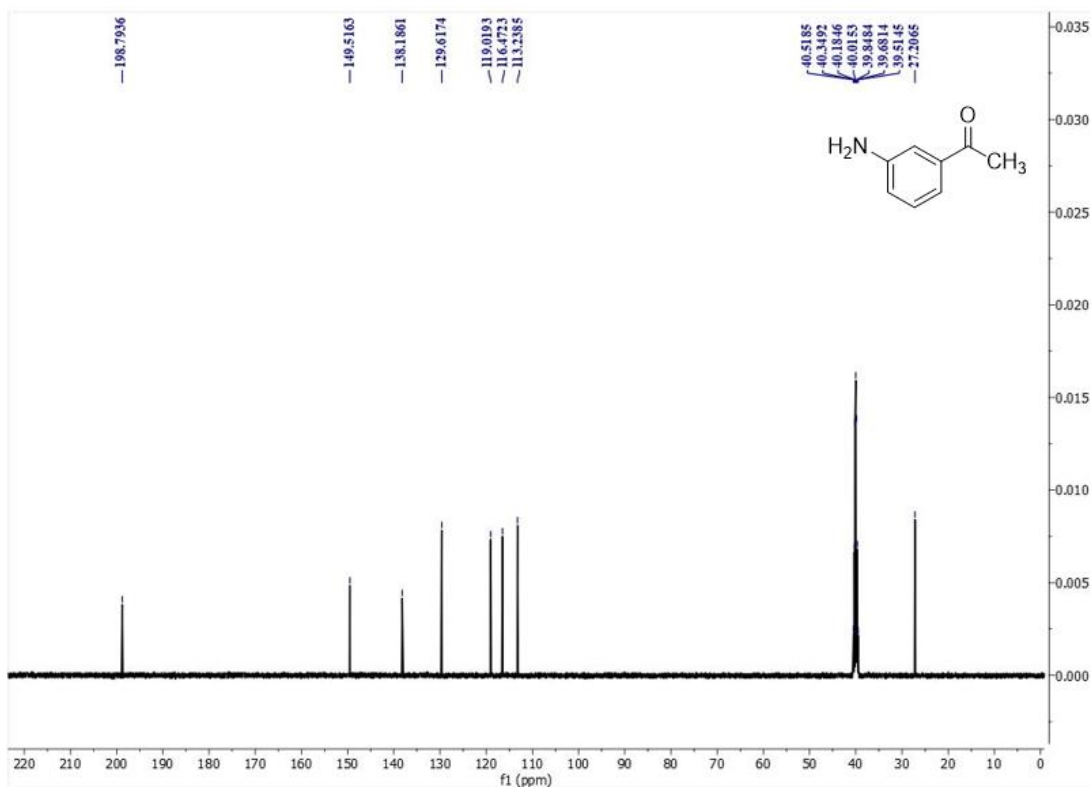


Fig.S56 ^{13}C NMR for 3-Aminoacetophenone (4j)

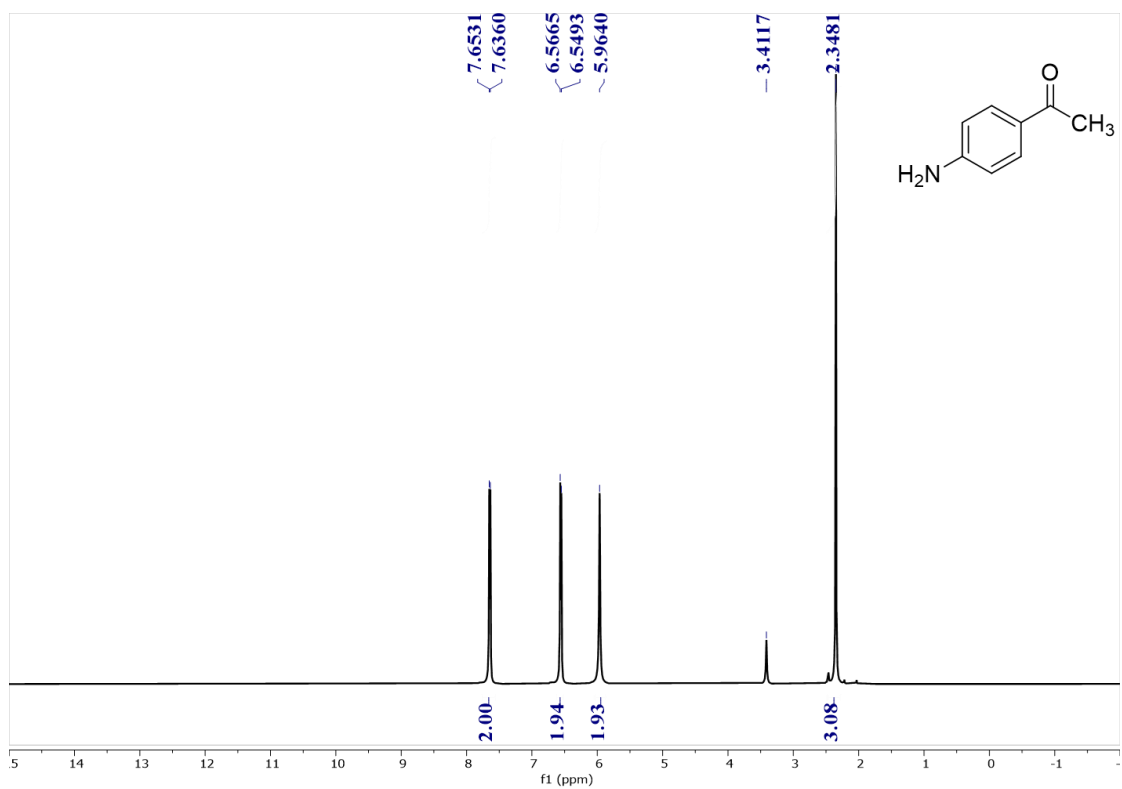


Fig.S57 ^1H NMR for 4-Aminoacetophenone (4k)

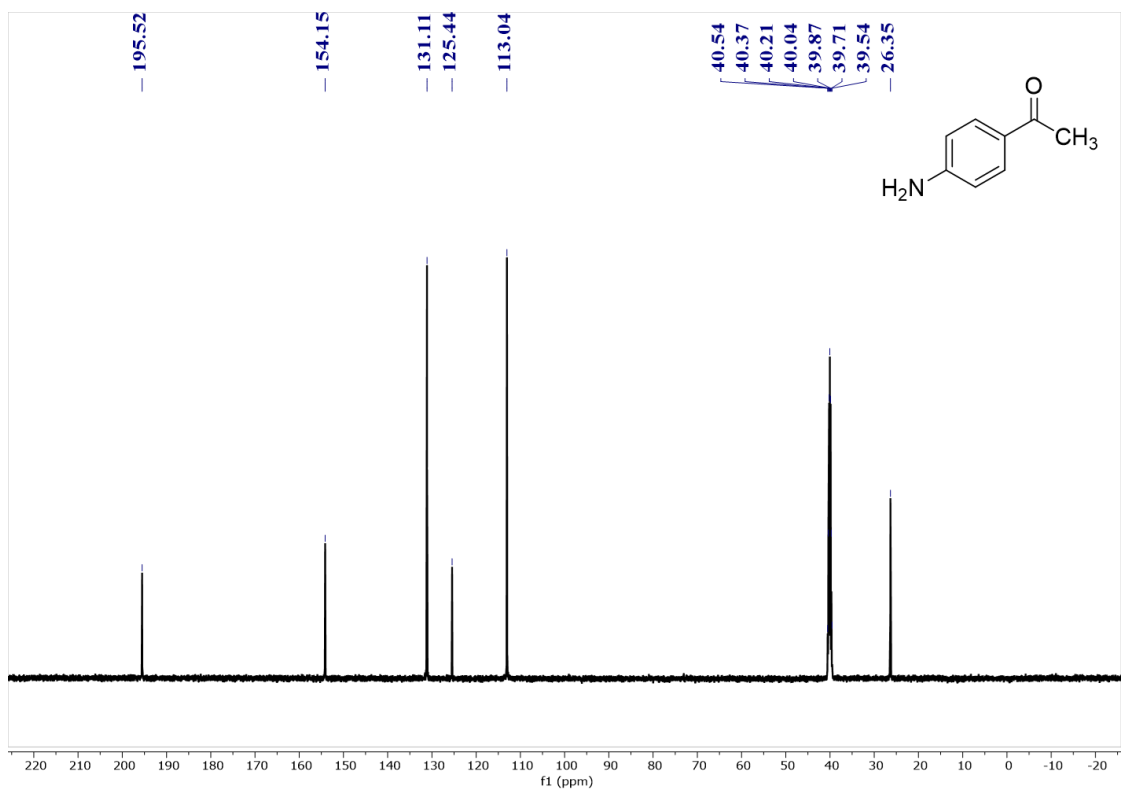


Fig.S58 ^{13}C NMR for 4-Aminoacetophenone (4k)

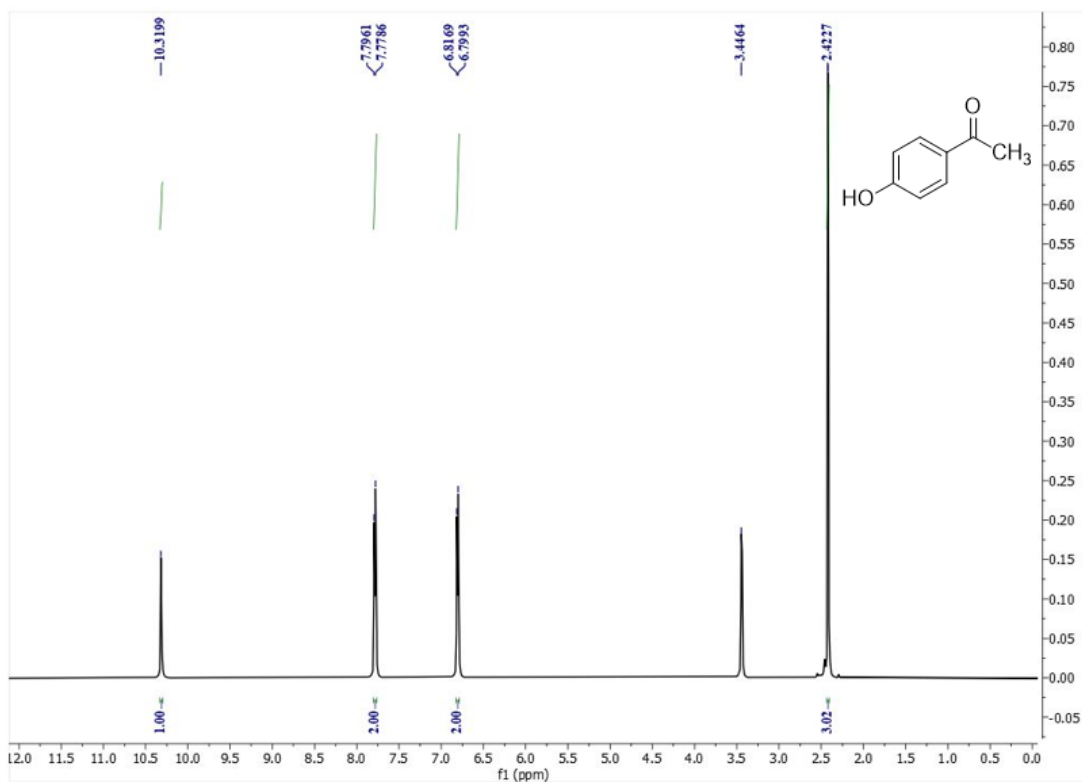


Fig.S59 ^1H NMR for 4-Hydroxyacetophenone (4I)

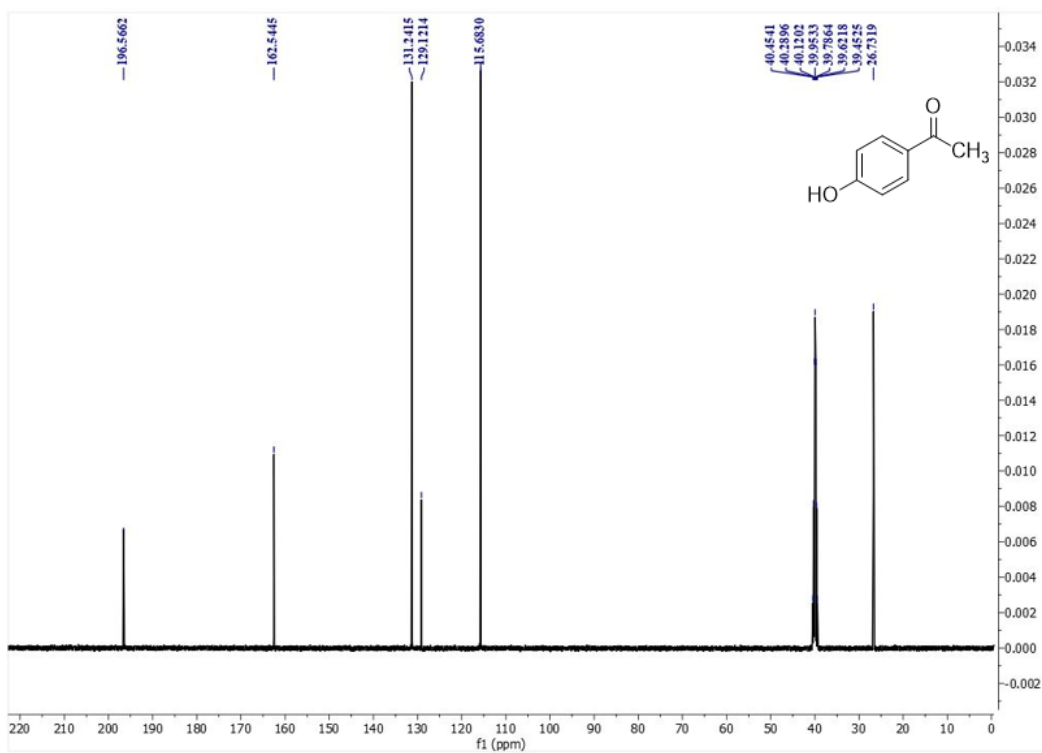


Fig.S60 ^{13}C NMR for 4-Hydroxyacetophenone (4I)

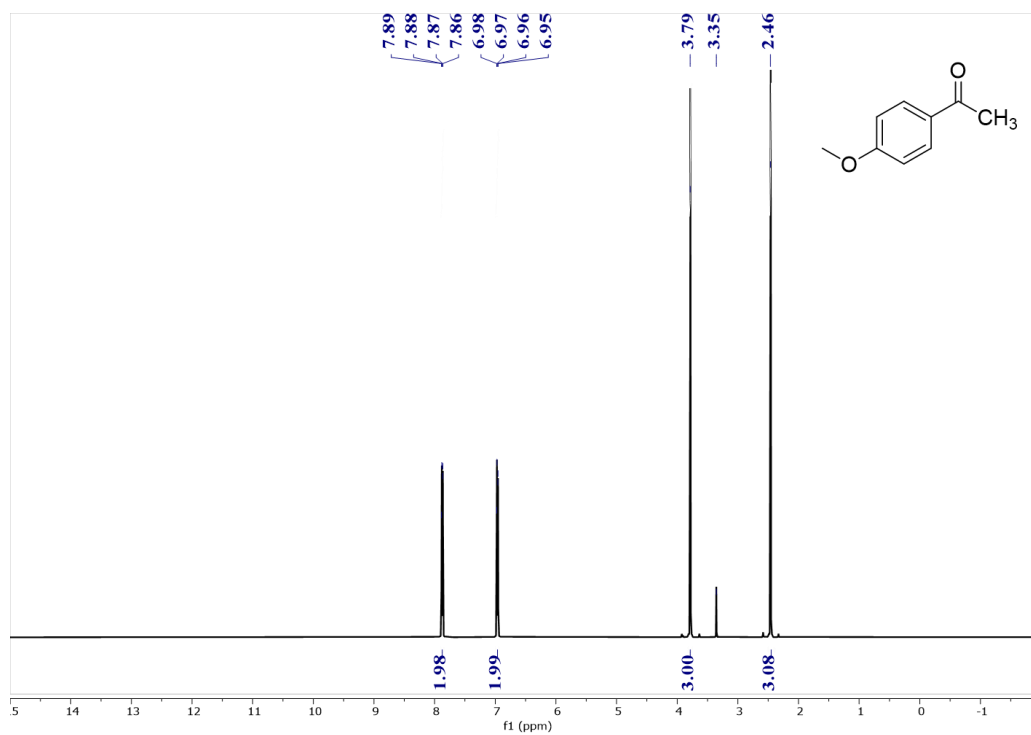


Fig.S61 ^1H NMR for 4-Methoxyacetophenone (4m)

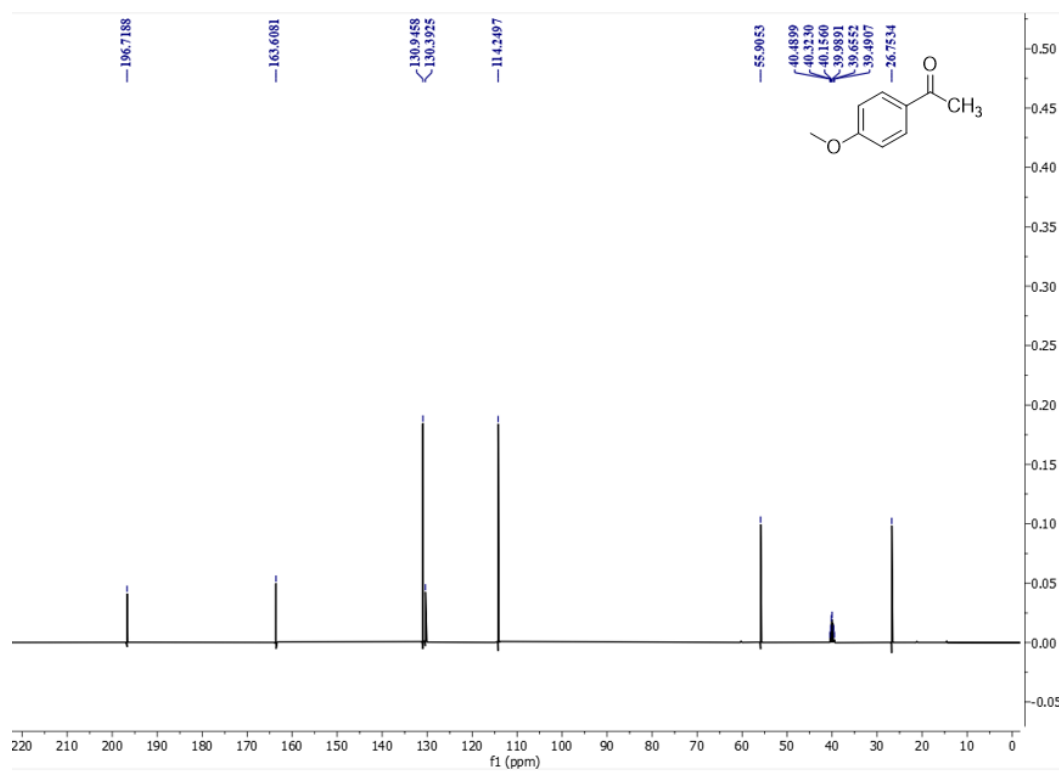


Fig.S62 ^{13}C NMR for 4-Methoxyacetophenone (4m)

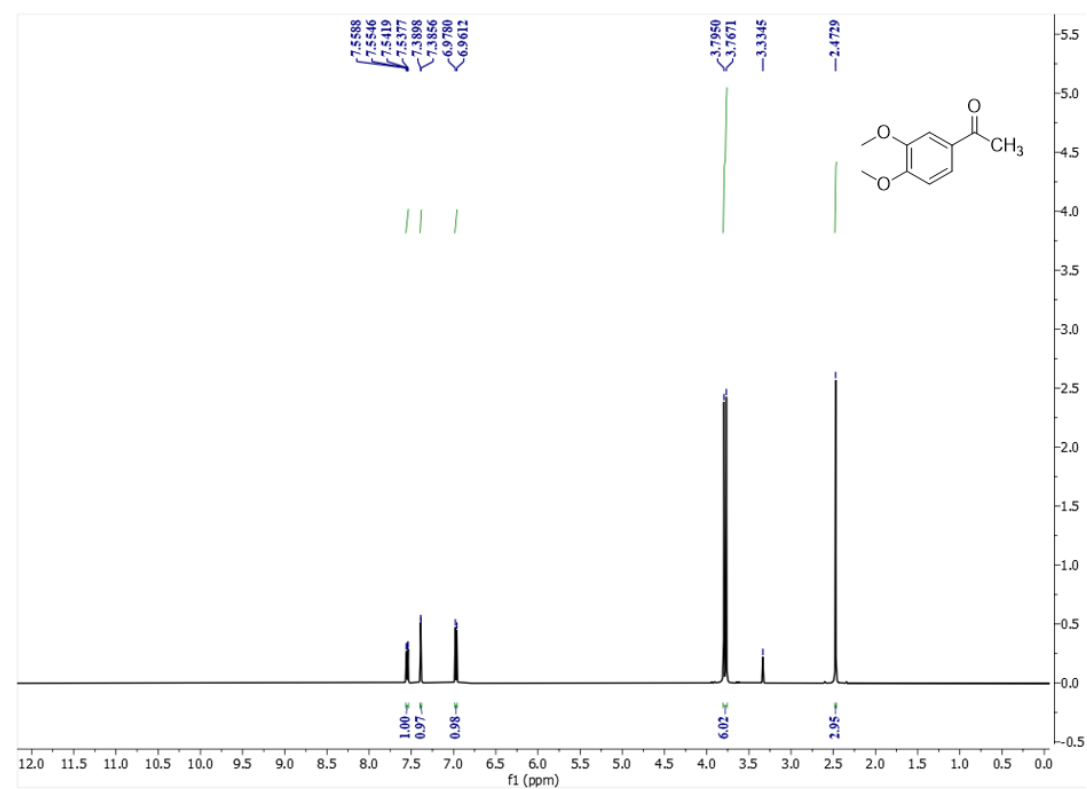


Fig.S63 ¹H NMR for 3,4-Dimethoxyacetophenone (4n)

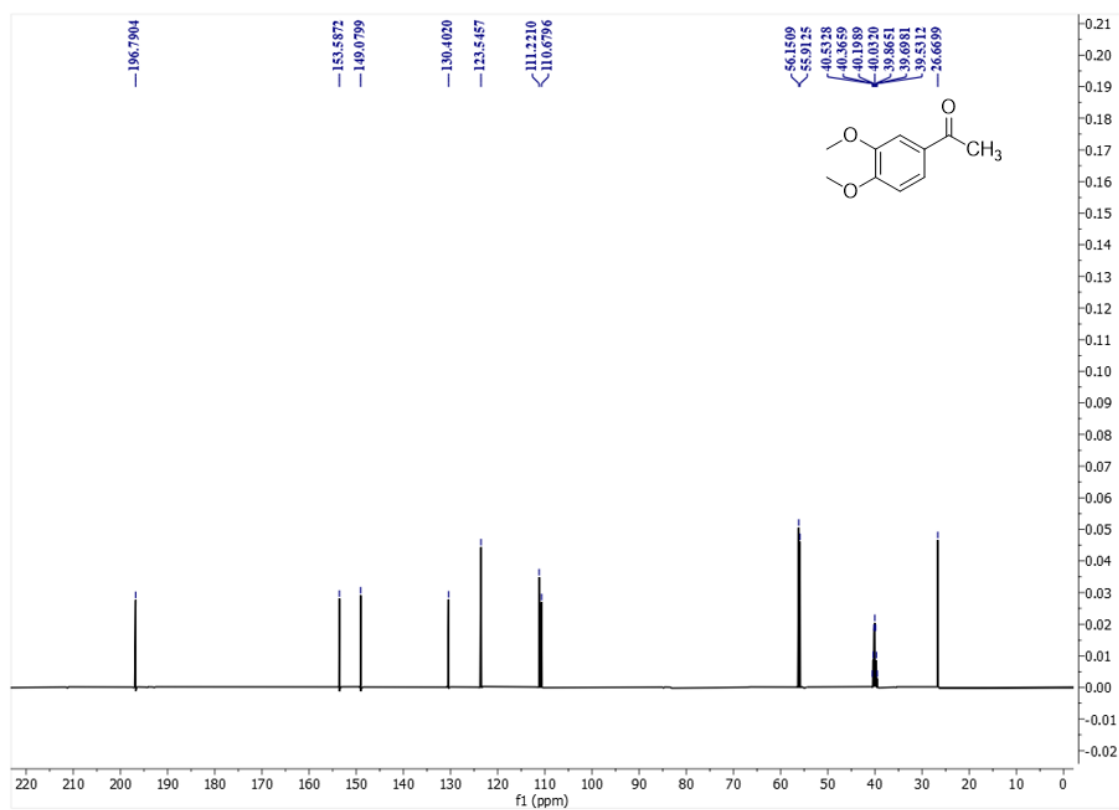


Fig.S64 ¹³C NMR for 3,4-Dimethoxyacetophenone (4n)

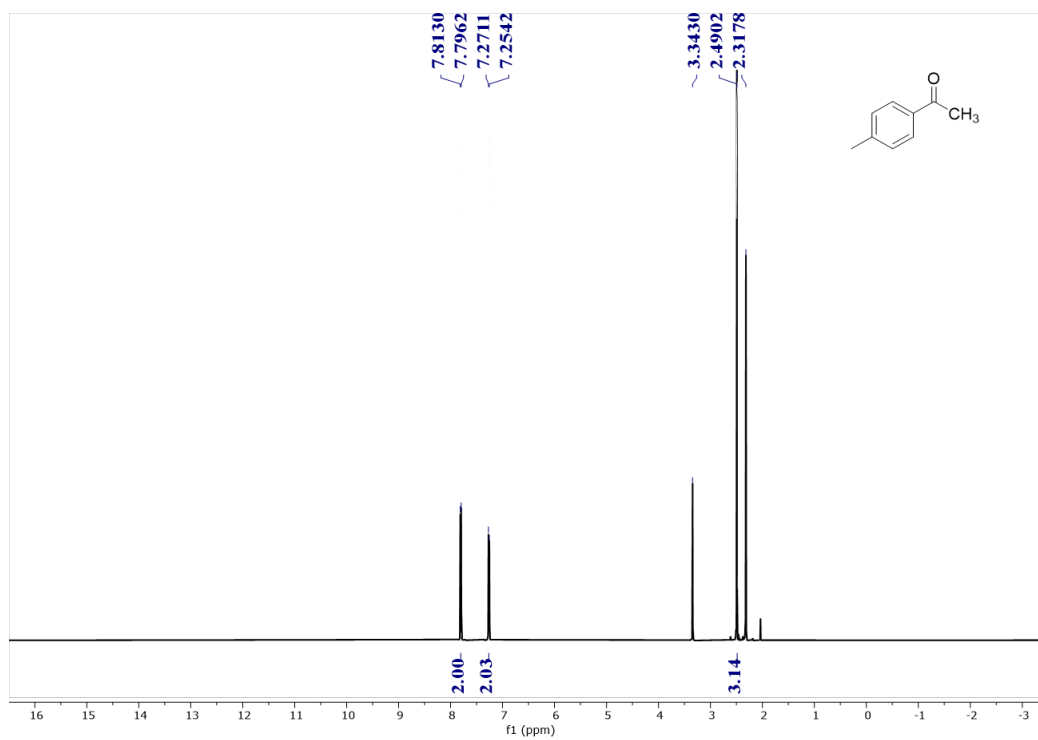


Fig.S65 ^1H NMR for 4-Methylacetophenone (4o)

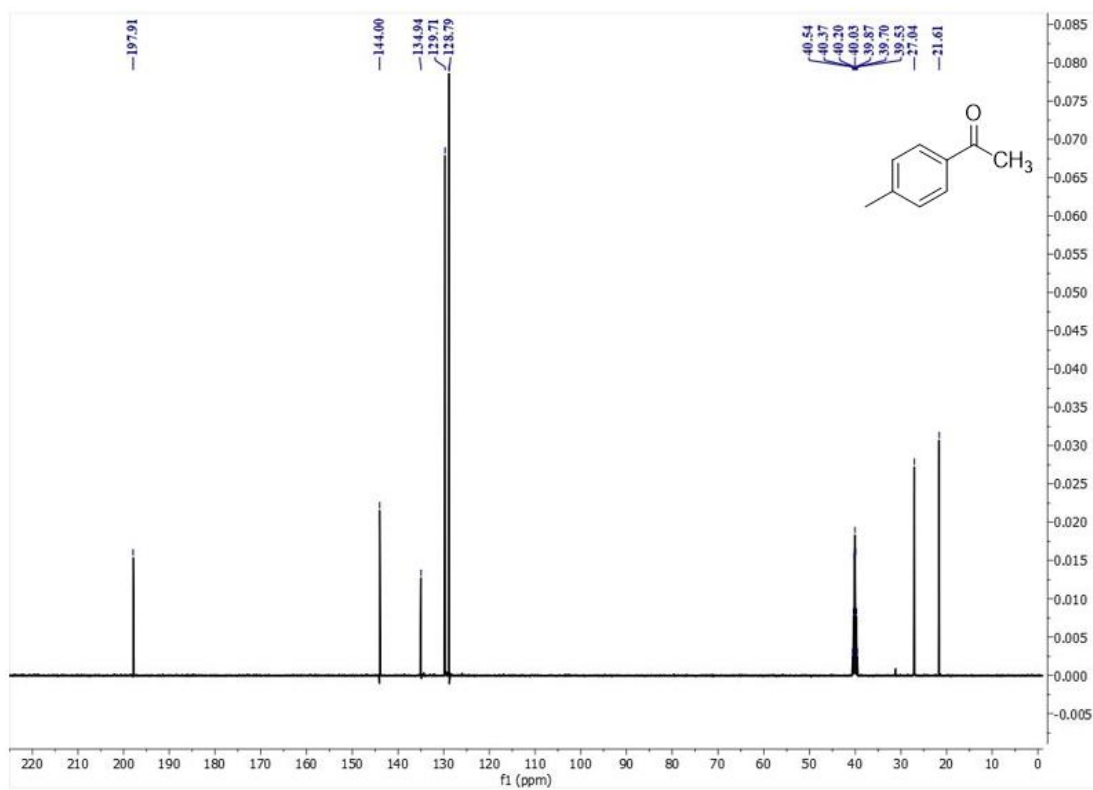


Fig.S66 ^{13}C NMR for 4-Methylacetophenone (4o)