Supporting Information

Copper -Promoted Regioselective Intermolecular Diamination of Ynamides: Synthesis of Imidazo[1,2-*a*]pyridines

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X-Ray Crystallographic data……..S2-S3

Copies of NMR Data…….…….....S4-S33

X-Ray Crystallographic data-

Data for compounds **3u** and **5b** were collected at room temperature on a Bruker D8 QUEST instrument with an IμS Mo microsource (λ = 0.7107 A) and a PHOTON-100 detector. The raw data frames were reduced and corrected for absorption effects using the Bruker Apex 3 software suite programs [1].The structure was solved using intrinsic phasing method [2] and further refined with the SHELXL [2] program and expanded using Fourier techniques. Anisotropic displacement parameters were included for all non-hydrogen atoms. The hydrogen atoms attached to water molecule of **3u** were located in a difference density map and refined isotropically All other H atoms were positioned geometrically and treated as riding on their parent C atoms [C-H = 0.93-0.98 Å and $U_{iso}(H) = 1.5U_{eq}(C)$ for methyl H or $1.2U_{eq}(c)$ for other H atoms]. The methyl groups were allowed to rotate but not to tip.

Crystal Data for 3u: $C_{34}H_{30}N_6O_5F_2$ (M =640.64 g/mol): monoclinic, space group $P2_1/c$ (no. 14), a = 11.975(2) Å, b = 6.8162(11) Å, c = 18.711(3) Å, β = 98.345(4)°, V = 1511.2(4) Å^3, Z = 2, T = 294.15 K, μ(MoKα) = 0.105 mm^{-1}, $Dcalc$ = 1.408 g/cm^3, 23789 reflections measured (5.176° ≤ 2Θ ≤ 56.778°), 3739 unique (R_{int} = 0.0584, R_{sigma} = 0.0468) which were used in all calculations. The final R_1 was 0.0649 (I >2σ(I)) and wR_2 was 0.1637 (all data). **CCDC 1527958** contains supplementary Crystallographic data for the structure.

Crystal Data for 5b: $C_{24}H_{19}N_3O_2$ (M =381.44 g/mol): monoclinic, space group $P2_1/n$ (no. 14), a = 14.0790(7) Å, b = 9.5407(4) Å, c = 15.4359(7) Å, β = 111.764(1)°, V = 1925.61(15) Å^3, Z = 4, T = 294.15 K, μ(Mo Kα) = 0.086 mm^{-1}, $Dcalc$ = 1.3156 g/cm^3, 47362 reflections measured (5.42° ≤ 2Θ ≤ 56.72°), 4782 unique (R_{int} = 0.0323, R_{sigma} = 0.0198) which were used in all calculations. The final R_1 was 0.0585 (I>2σ(I)) and wR_2 was 0.1854 (all data). **CCDC 1527959** contains supplementary Crystallographic data for the structure. These data can be obtained free of charge at www.ccdc.cam.ac.uk/conts/retrieving.html [or from the Cambridge Crystallographic Data Centre (CCDC), 12 Union Road, Cambridge CB2 1EZ, UK; fax: +44(0) 1223 336 033; email: deposit@ccdc.cam.ac.uk].

1. Bruker (2016). APEX3, SAINT and SADABS. Bruker AXS, Inc., Madison, Wisconsin, USA.

2. Sheldrick G. M. (2015) ActaCrystallogrC71:3-8.

Figure Captions

Figure1. A view of **3u**, showing the atom-labelling scheme. Displacement ellipsoids are drawn at the 30% probability level and H atoms are represented by circles of arbitrary radii. Hydrogen bond is shown as dashed lines.

Figure2. A view of **5b**, showing the atom-labelling scheme. Displacement ellipsoids are drawn at the 30% probability level and H atoms are represented by circles of arbitrary radii.

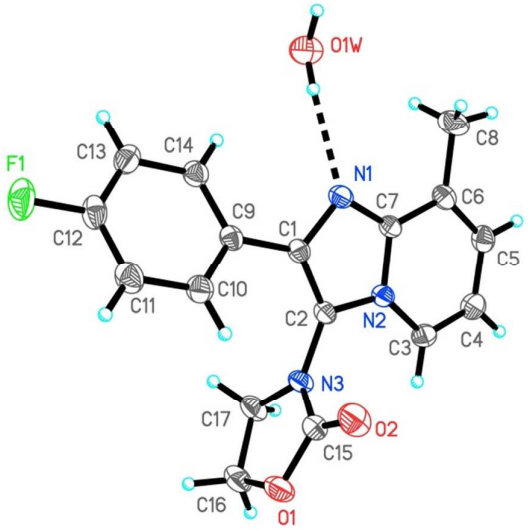


Figure1: 3u

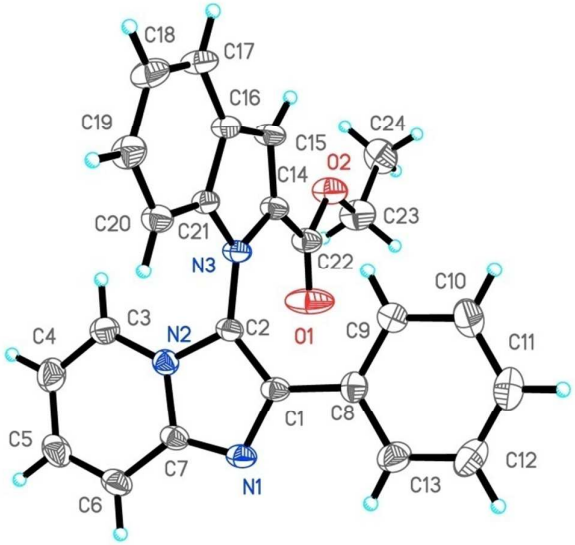
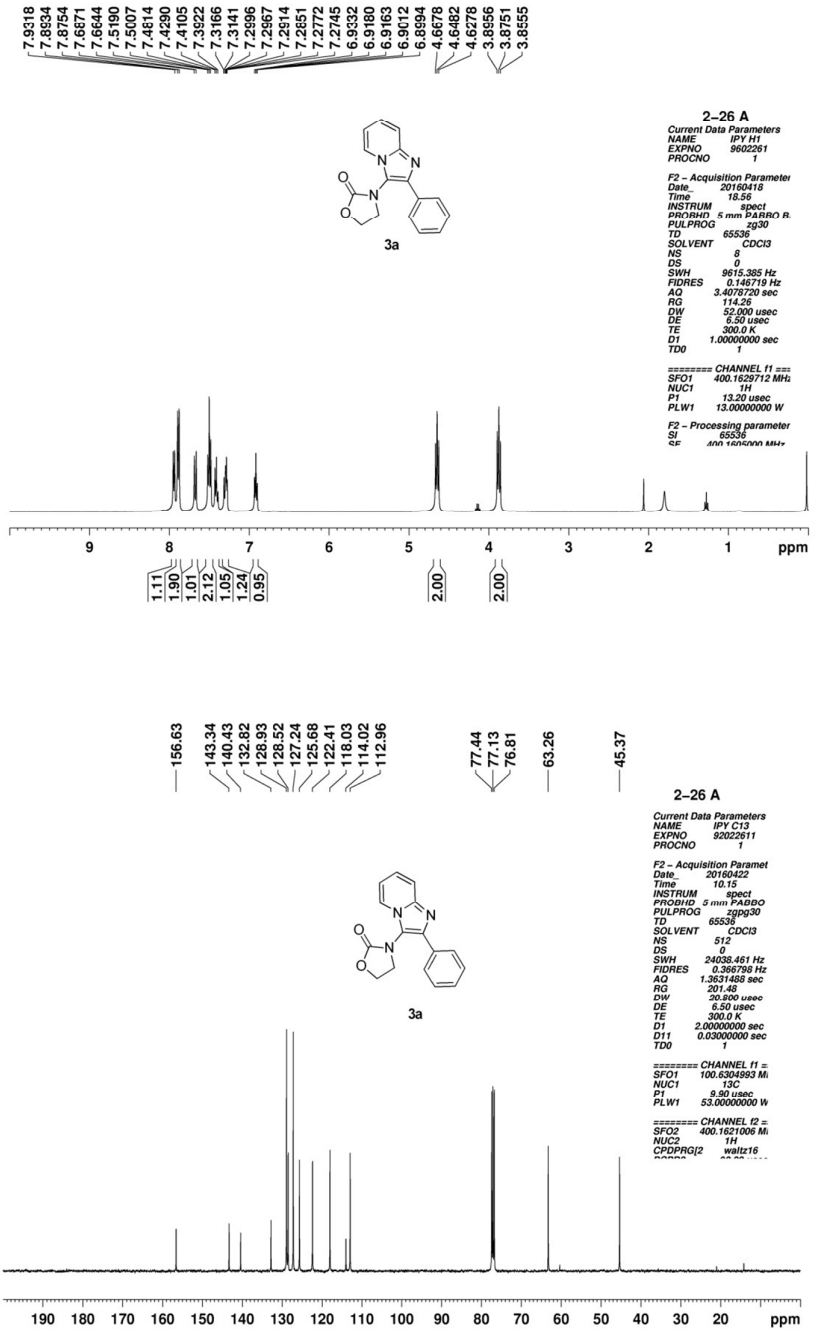
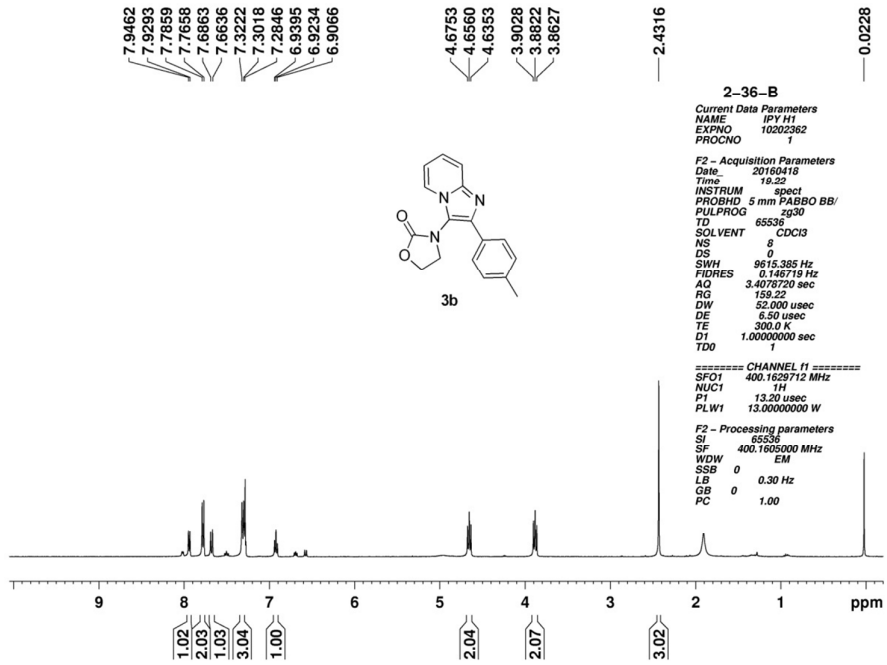


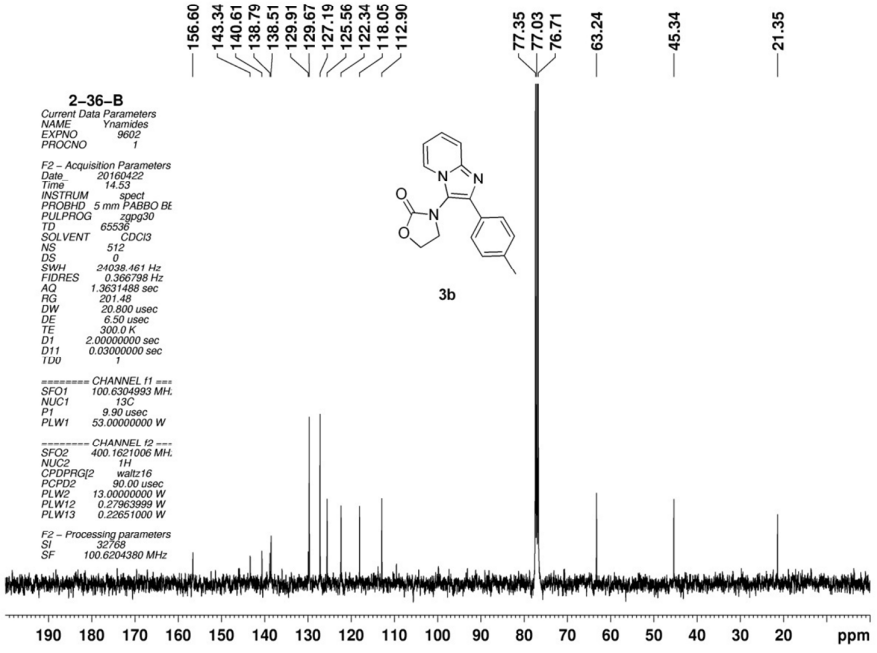
Figure2: 5b

FigureS1. ^{1}H and ^{13}C NMR spectrum of 3-(2-phenylimidazo[1,2-a]pyridin-3-yl) oxazolidin-2-one (3a)

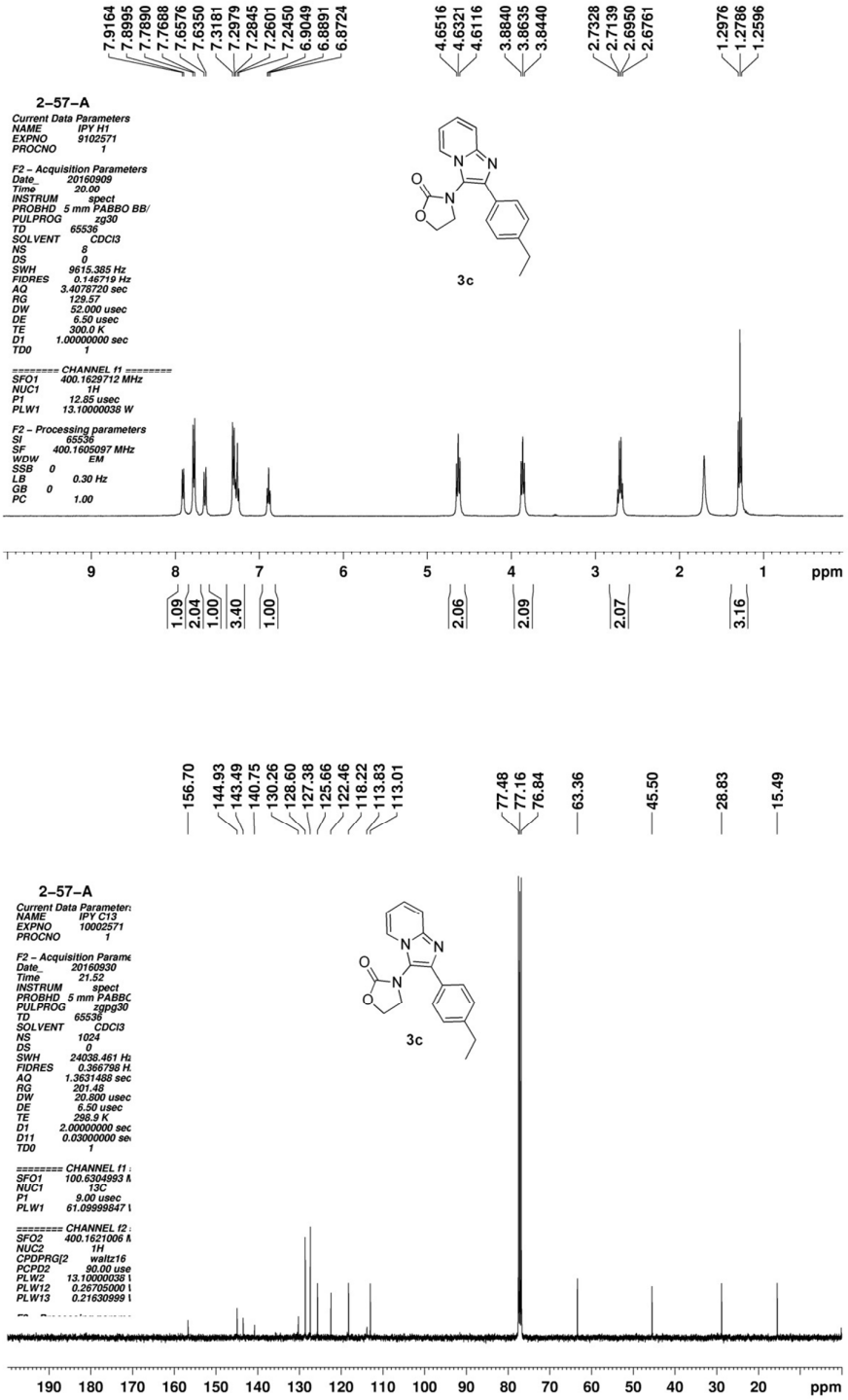


FigureS2. ^{1}H and ^{13}C NMR spectrum of 3-(2-(p-tolyl)imidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one(3b)

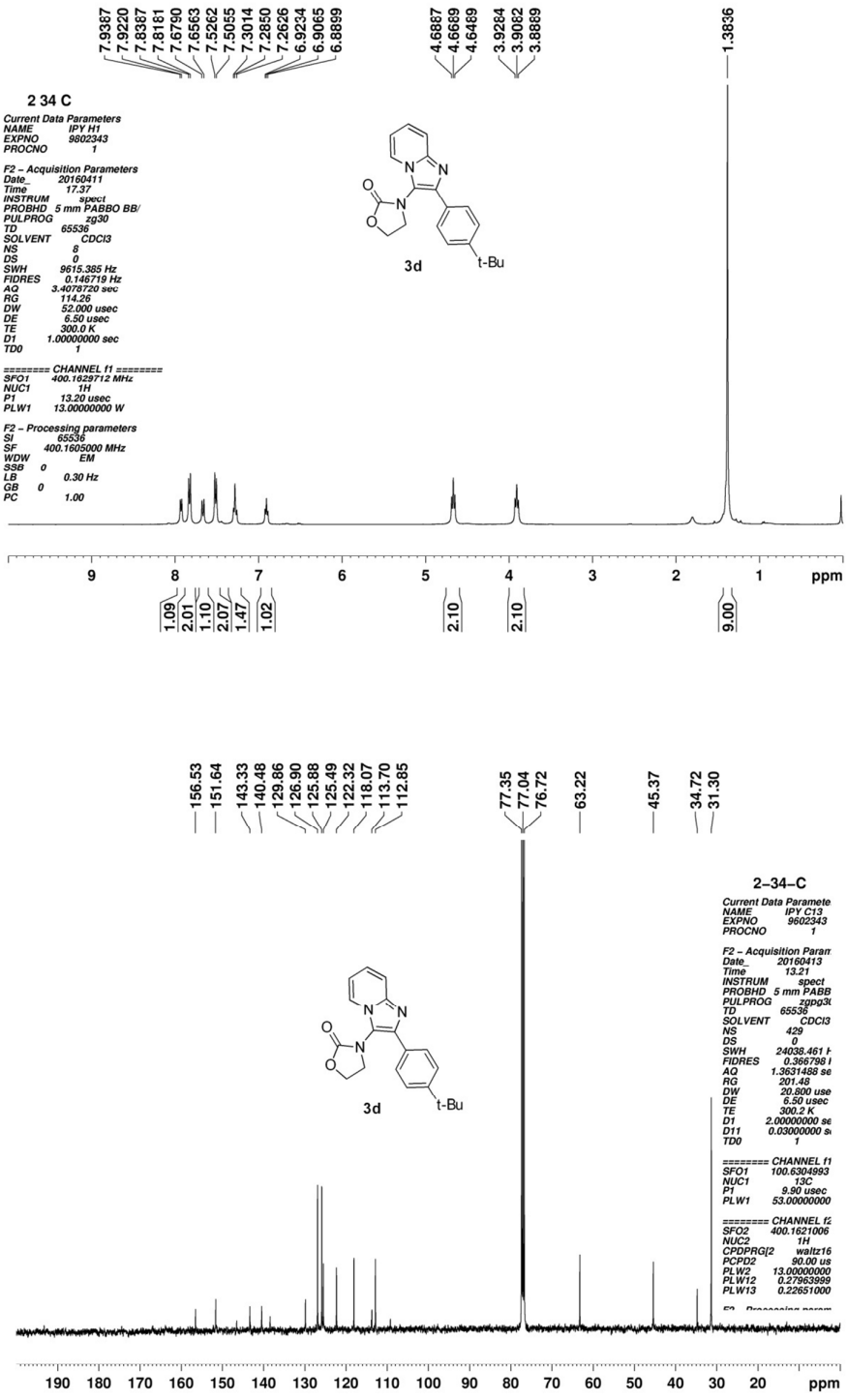




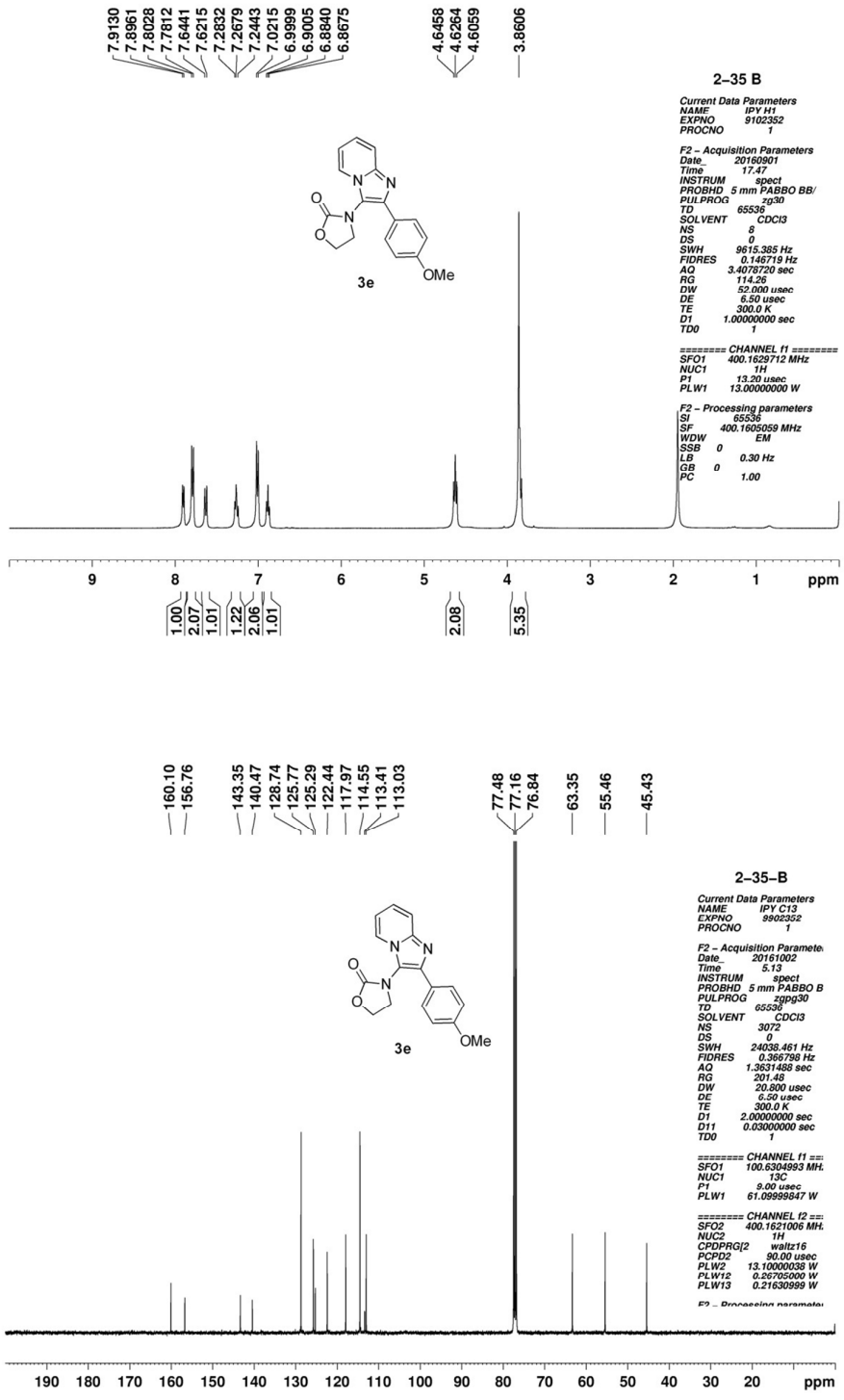
FigureS3. ^{1}H and ^{13}C NMR spectrum of 3-(2-(4-ethylphenyl)imidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one (3c)



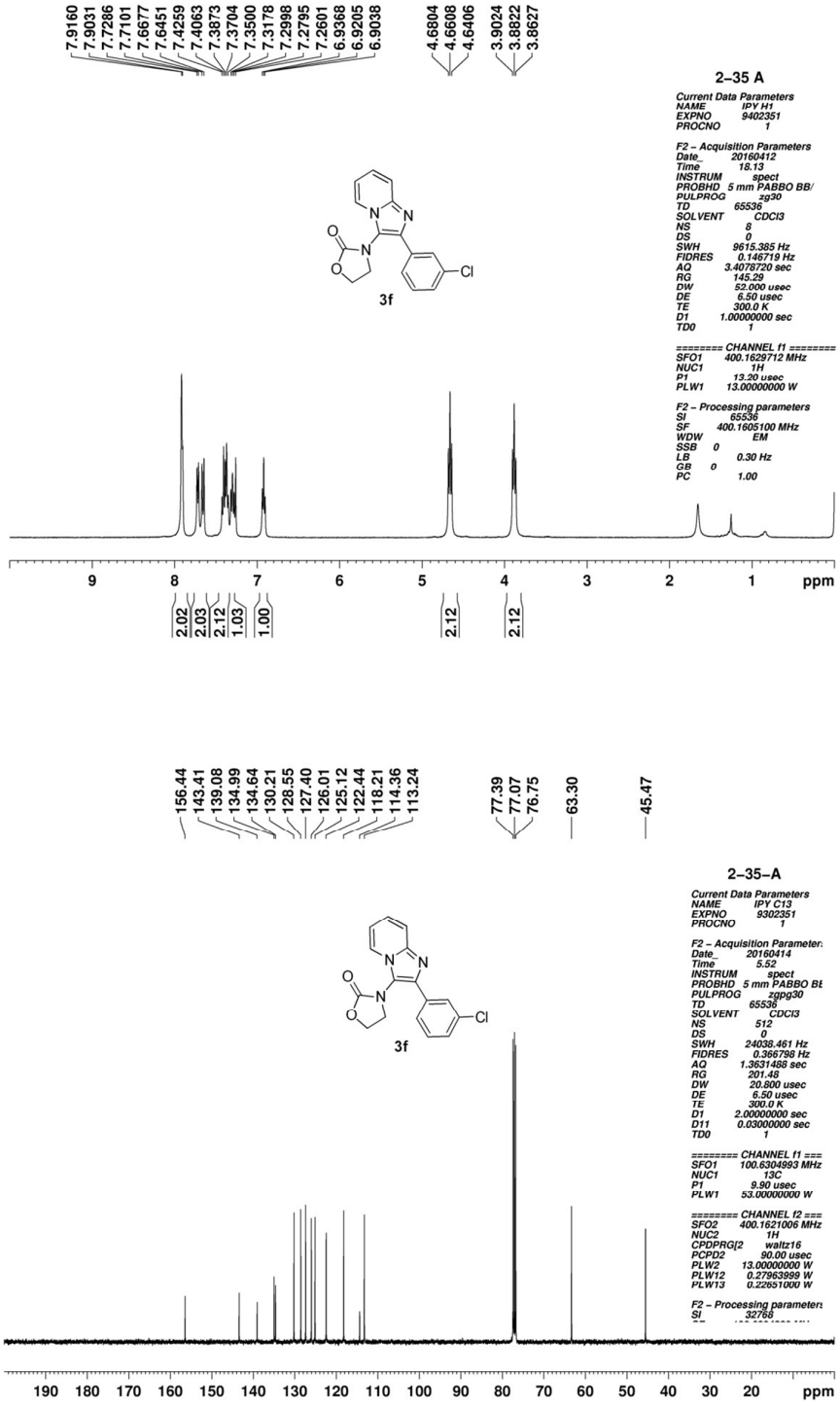
FigureS4. ^{1}H and ^{13}C NMR spectrum of 3-(2-(4-(tert-butyl)phenyl)imidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one (3d)



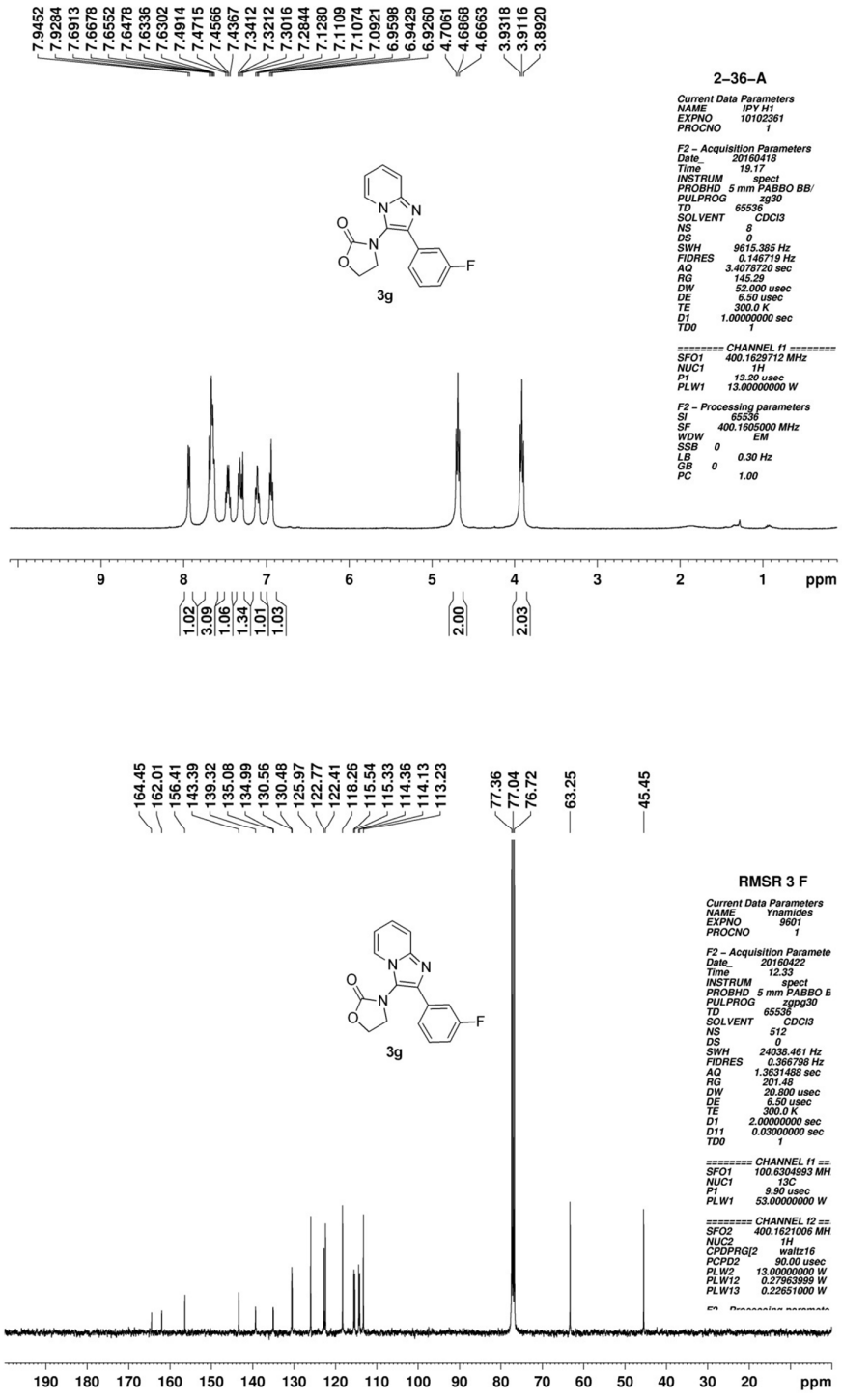
FigureS5. ^{1}H and ^{13}C NMR spectrum of 3-(2-(4-methoxyphenyl)imidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one (3e)



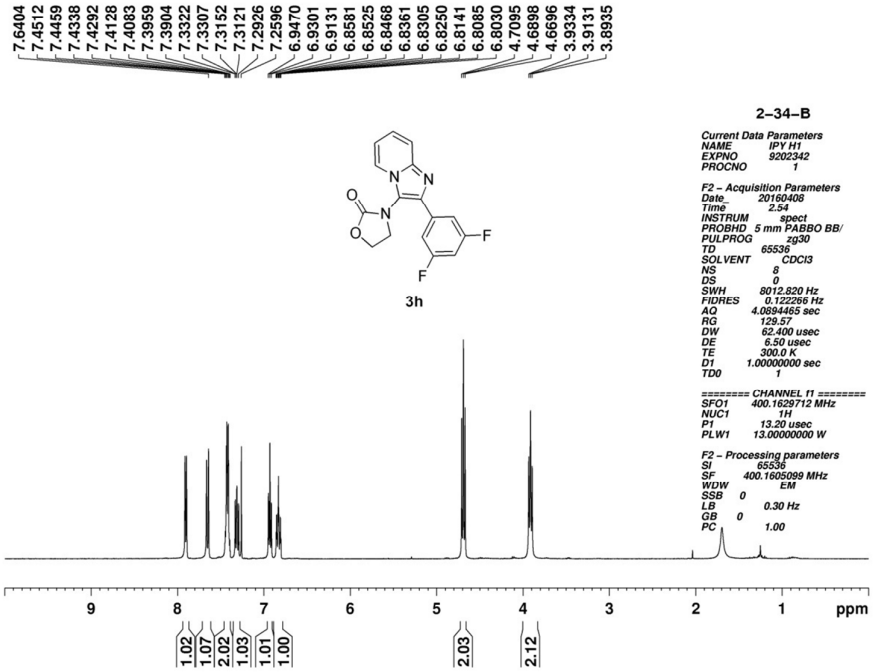
FigureS6. ^{1}H and ^{13}C NMR spectrum of 3-(2-(3-chlorophenyl)imidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one(3f)

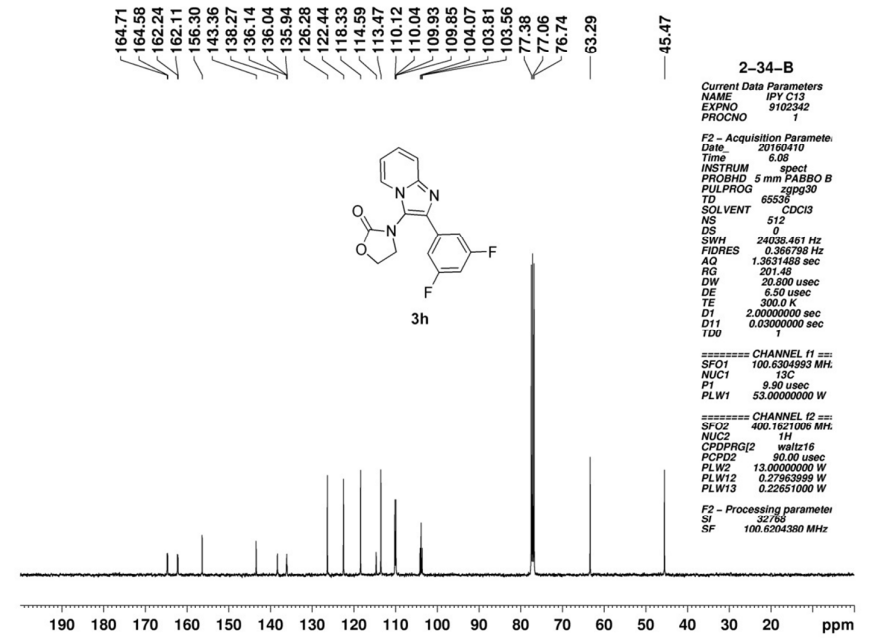


FigureS7. ^{1}H and ^{13}C NMR spectrum of 3-(2-(3-fluorophenyl)imidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one(3g)

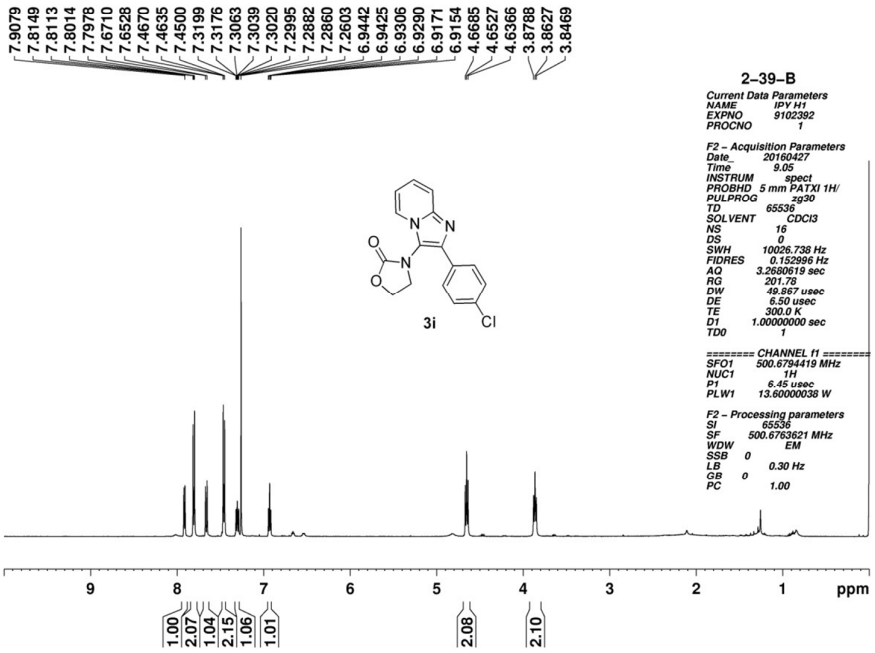


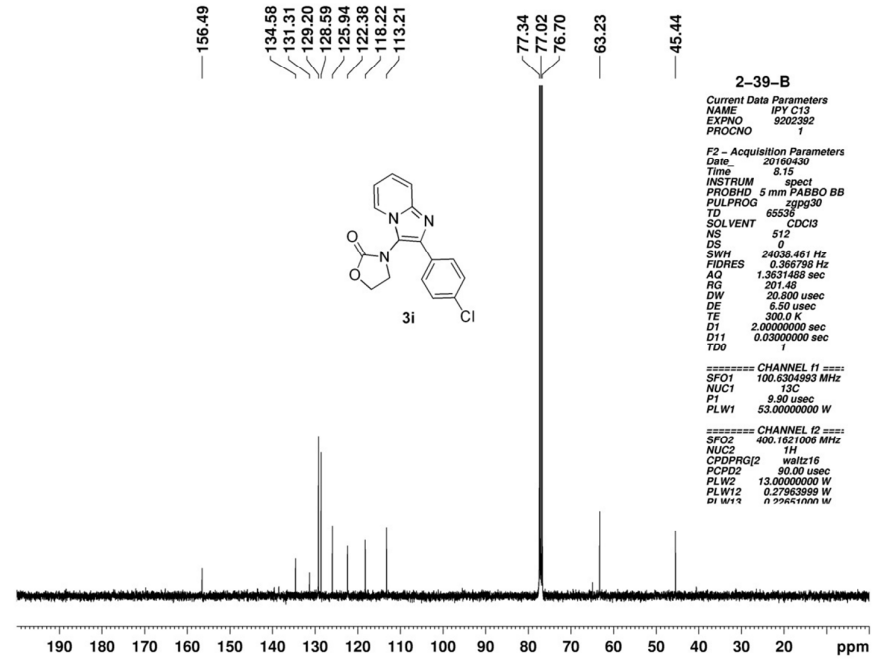
FigureS8. ^{1}H and ^{13}C NMR spectrum of 3-(2-(3,5-difluorophenyl)imidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one(3h)



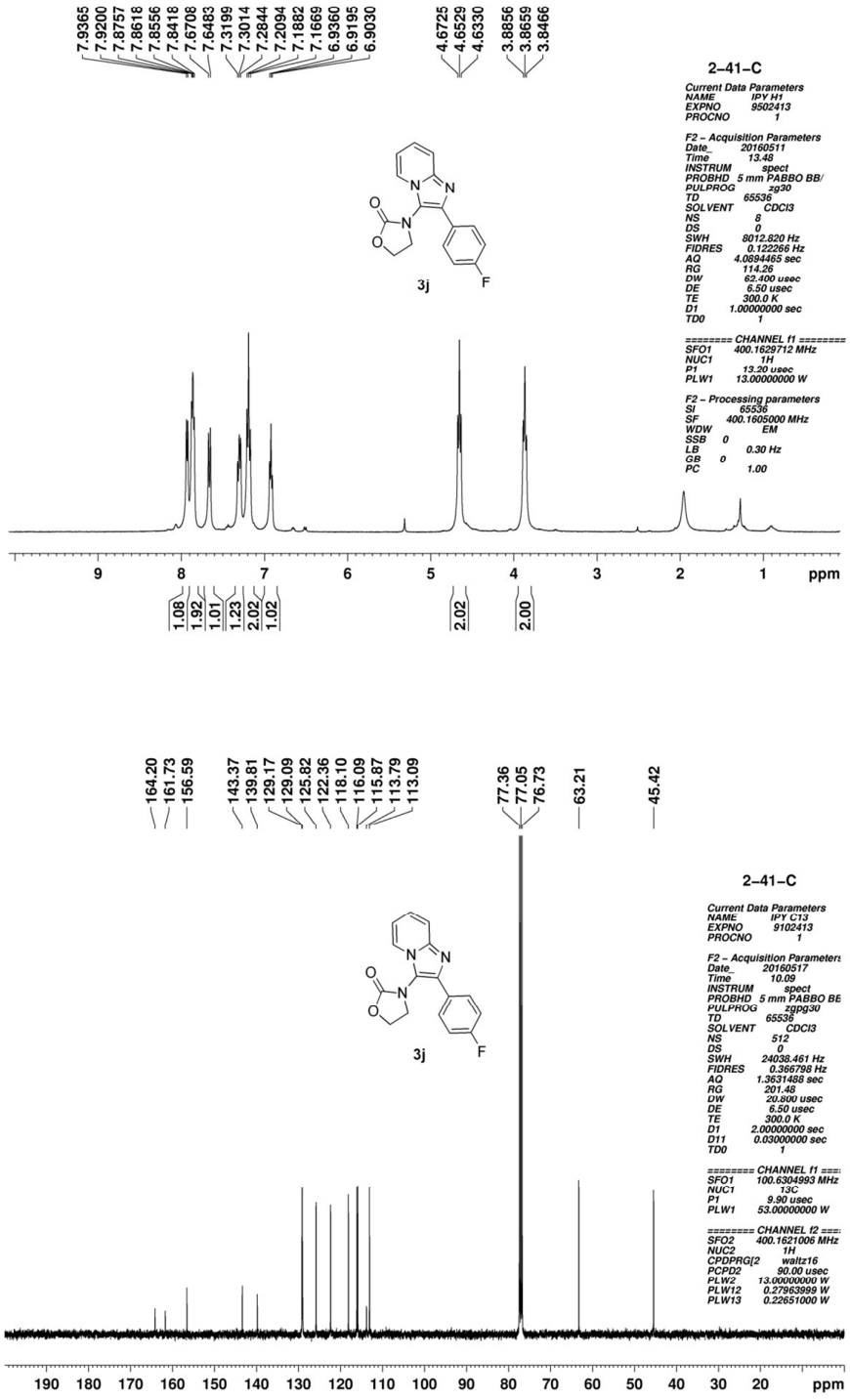


FigureS9. ^{1}H and ^{13}C NMR spectrum of 3-(2-(4-chlorophenyl)imidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one(3i)

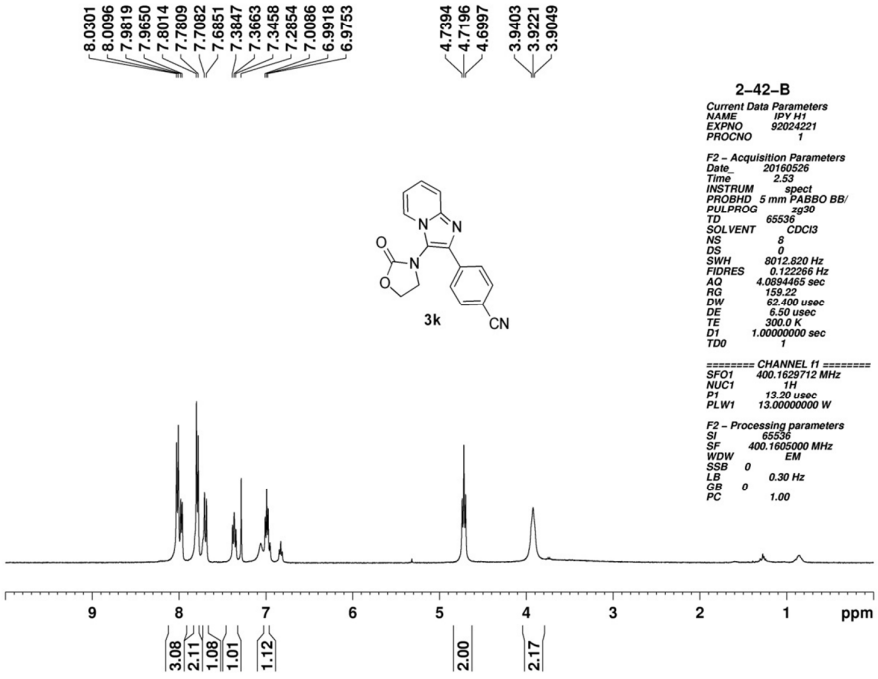


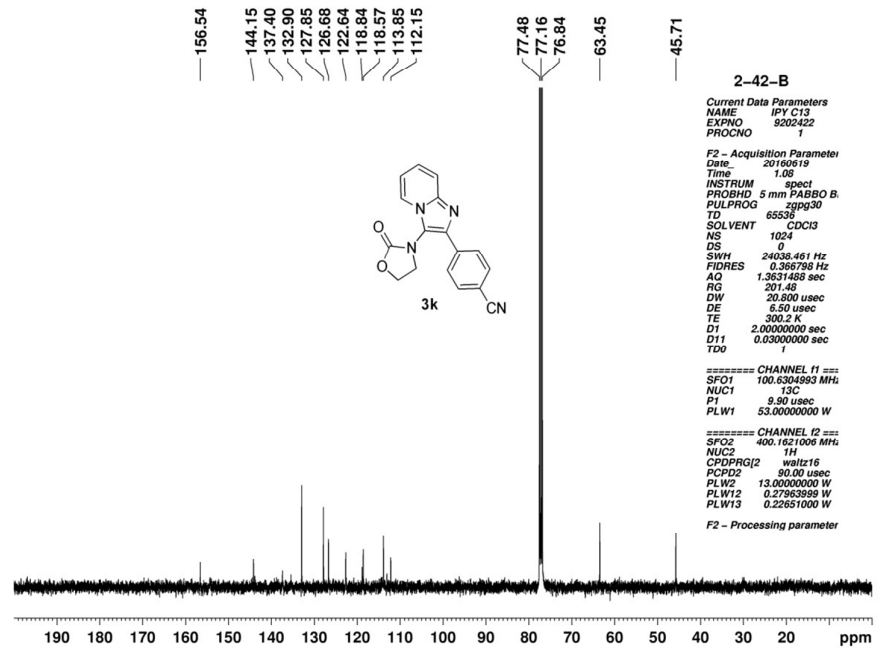


FigureS10. ^{1}H and ^{13}C NMR spectrum of 3-(2-(4-fluorophenyl)imidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one (3j)

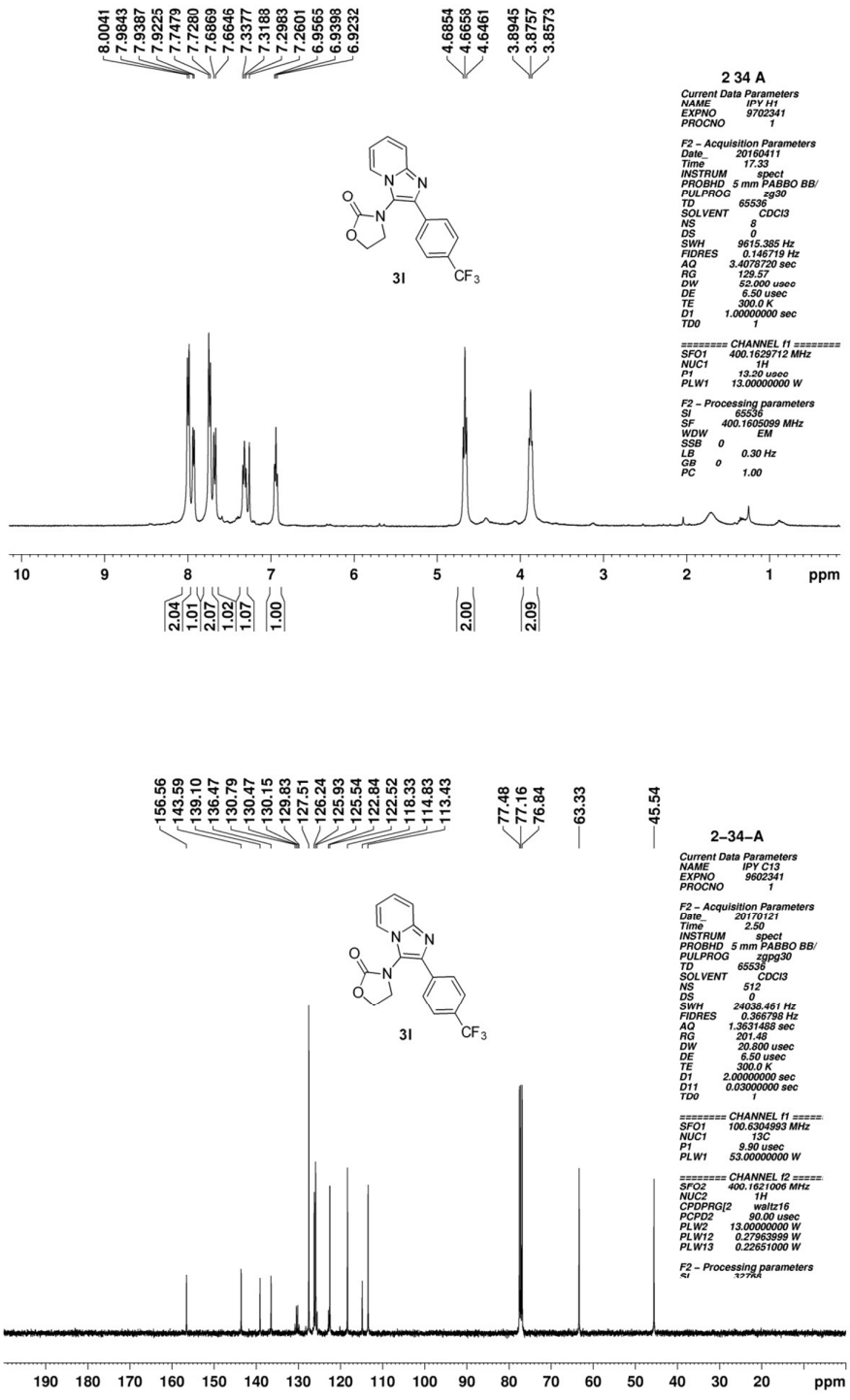


FigureS11. ^{1}H and ^{13}C NMR spectrum of 4-(3-(2-oxooxazolidin-3-yl)imidazo[1,2-a]pyridin-2-yl)benzonitrile(3k)

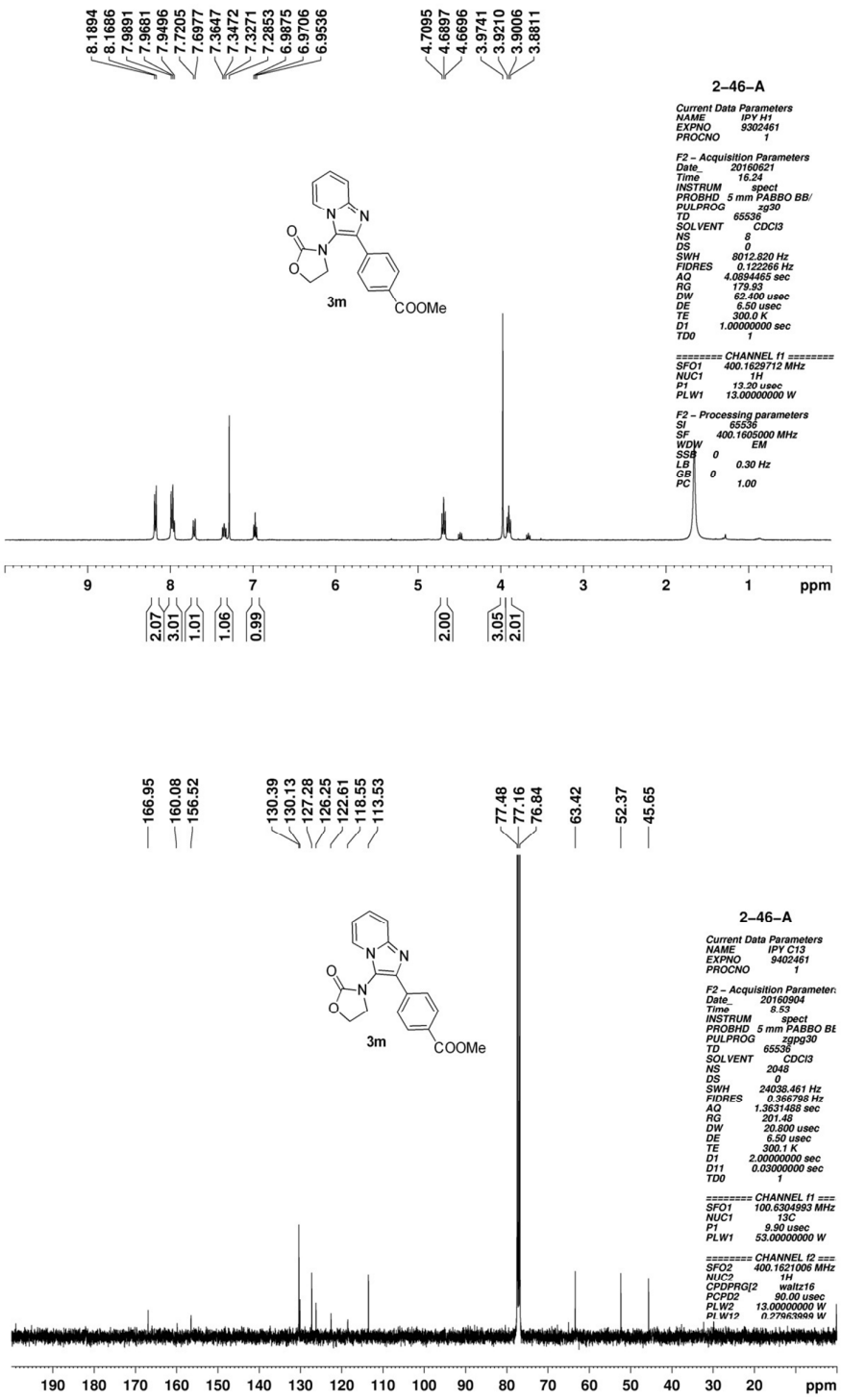




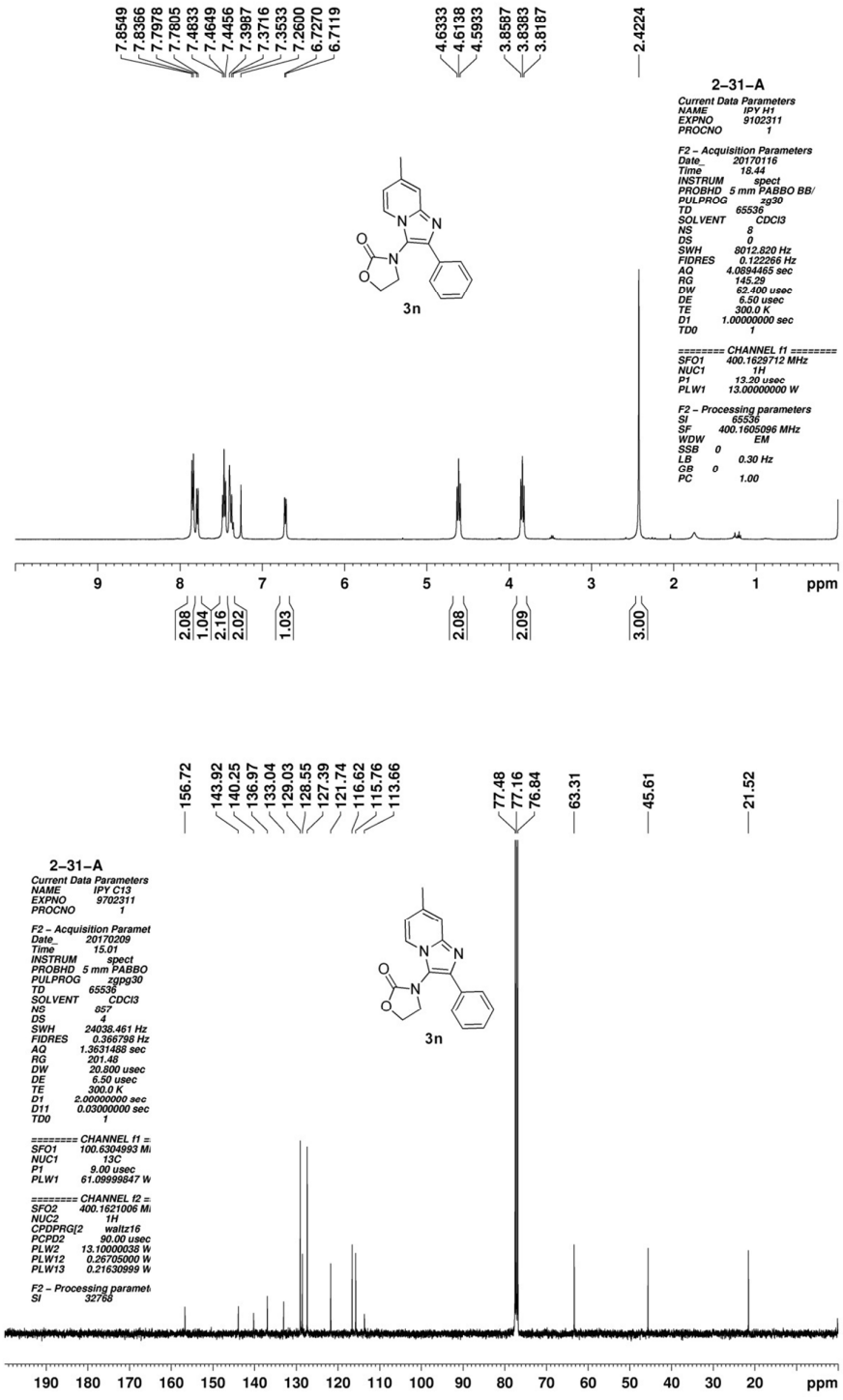
FigureS12. ^{1}H and ^{13}C NMR spectrum of 3-(2-(4-(trifluoromethyl)phenyl)imidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one(3l)



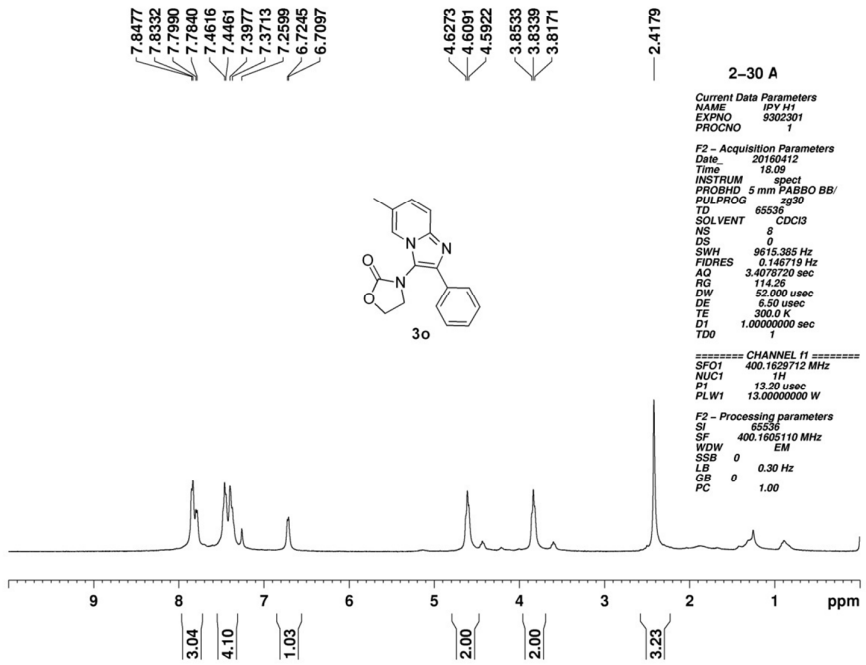
FigureS13. ^{1}H and ^{13}C NMR spectrum of Methyl 4-(3-(2-oxooxazolidin-3-yl)imidazo[1,2-a]pyridin-2-yl)benzoate(3m)

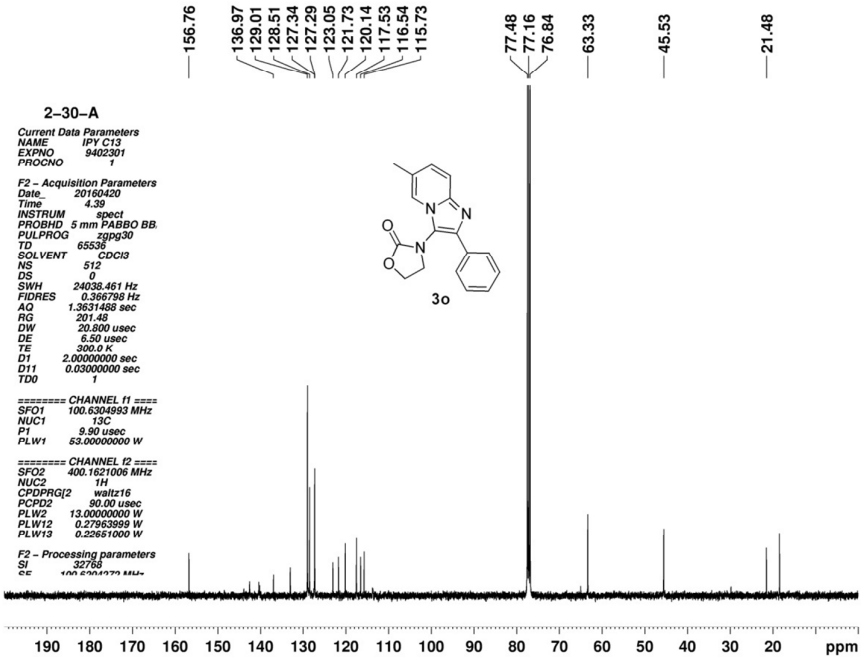


FigureS14. ^{1}H and ^{13}C NMR spectrum of 3-(7-methyl-2-phenylimidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one (3n)

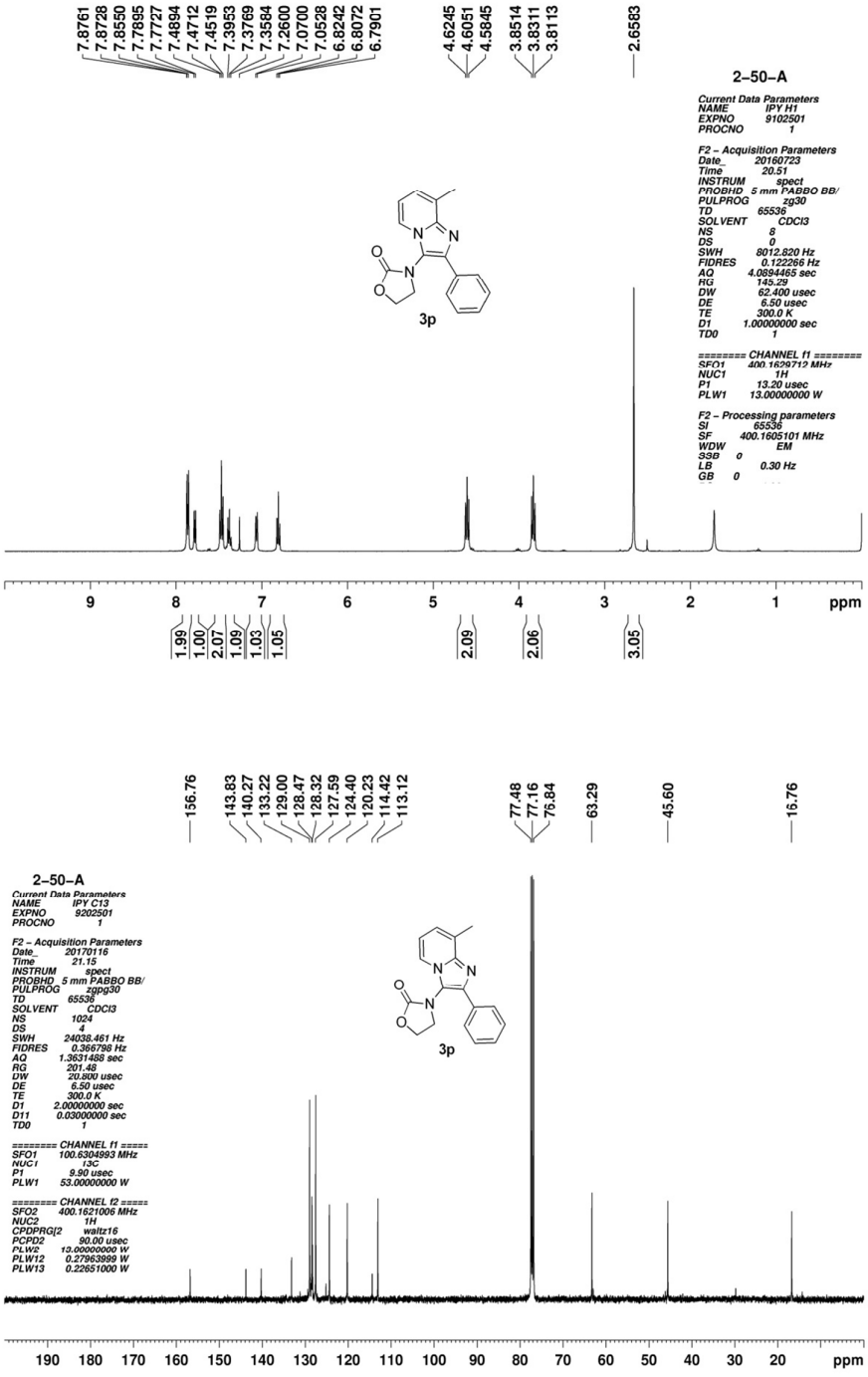


FigureS15. ^{1}H and ^{13}C NMR spectrum of 3-(6-methyl-2-phenylimidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one(3o)

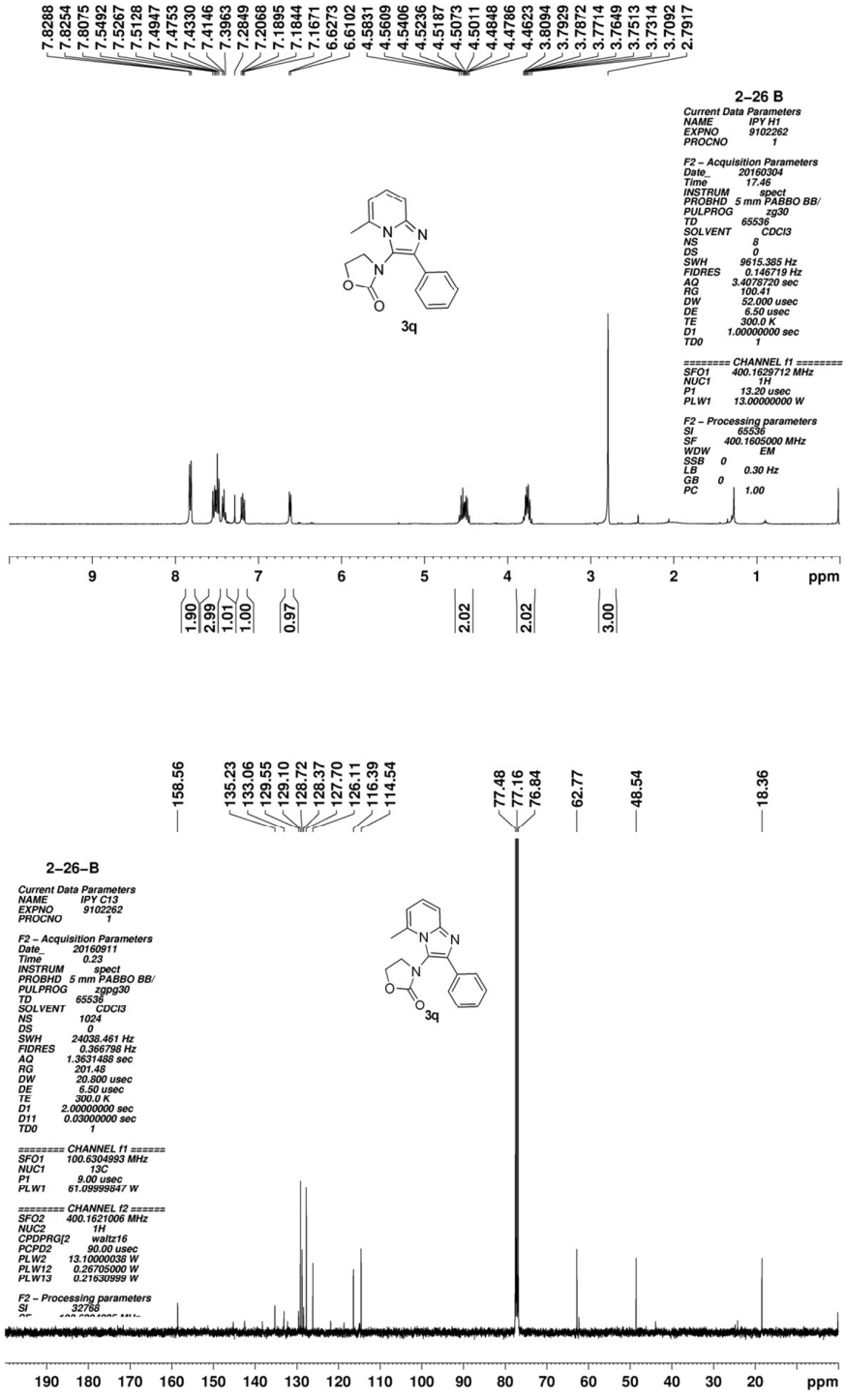




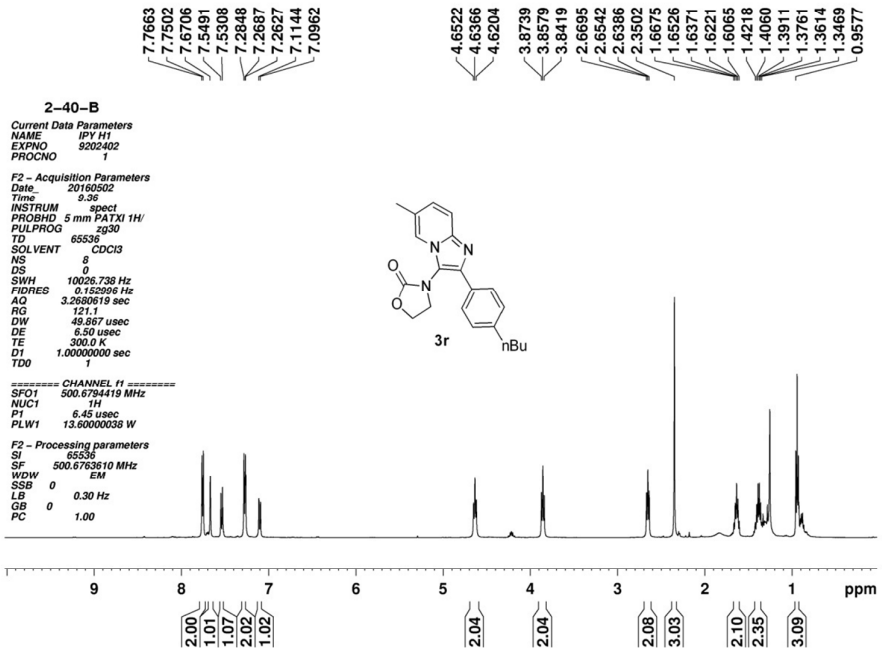
FigureS16. ^{1}H and ^{13}C NMR spectrum of 3-(8-methyl-2-phenylimidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one (3p)

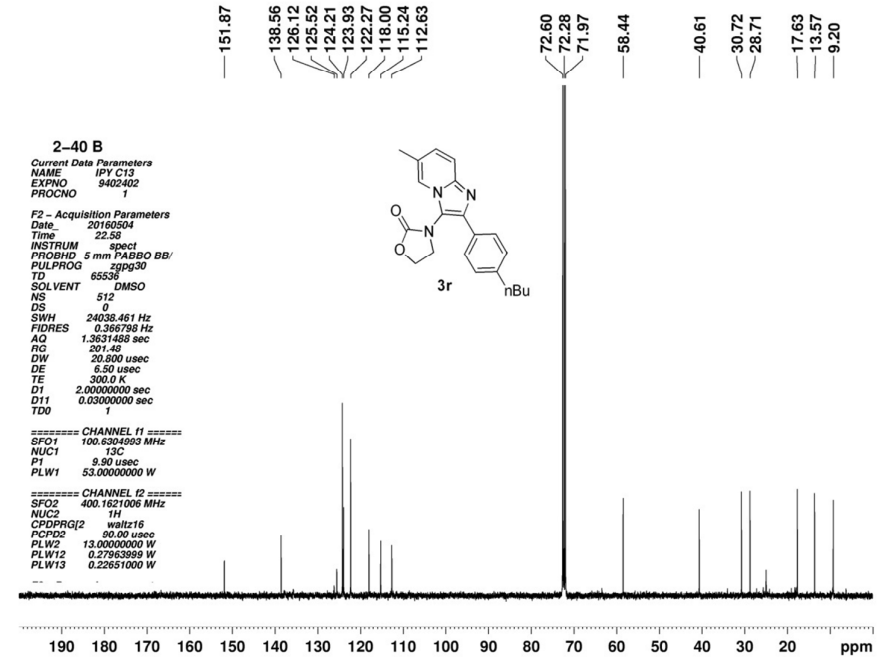


FigureS17. ^{1}H and ^{13}C NMR spectrum of 3-(5-methyl-2-phenylimidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one(3q)

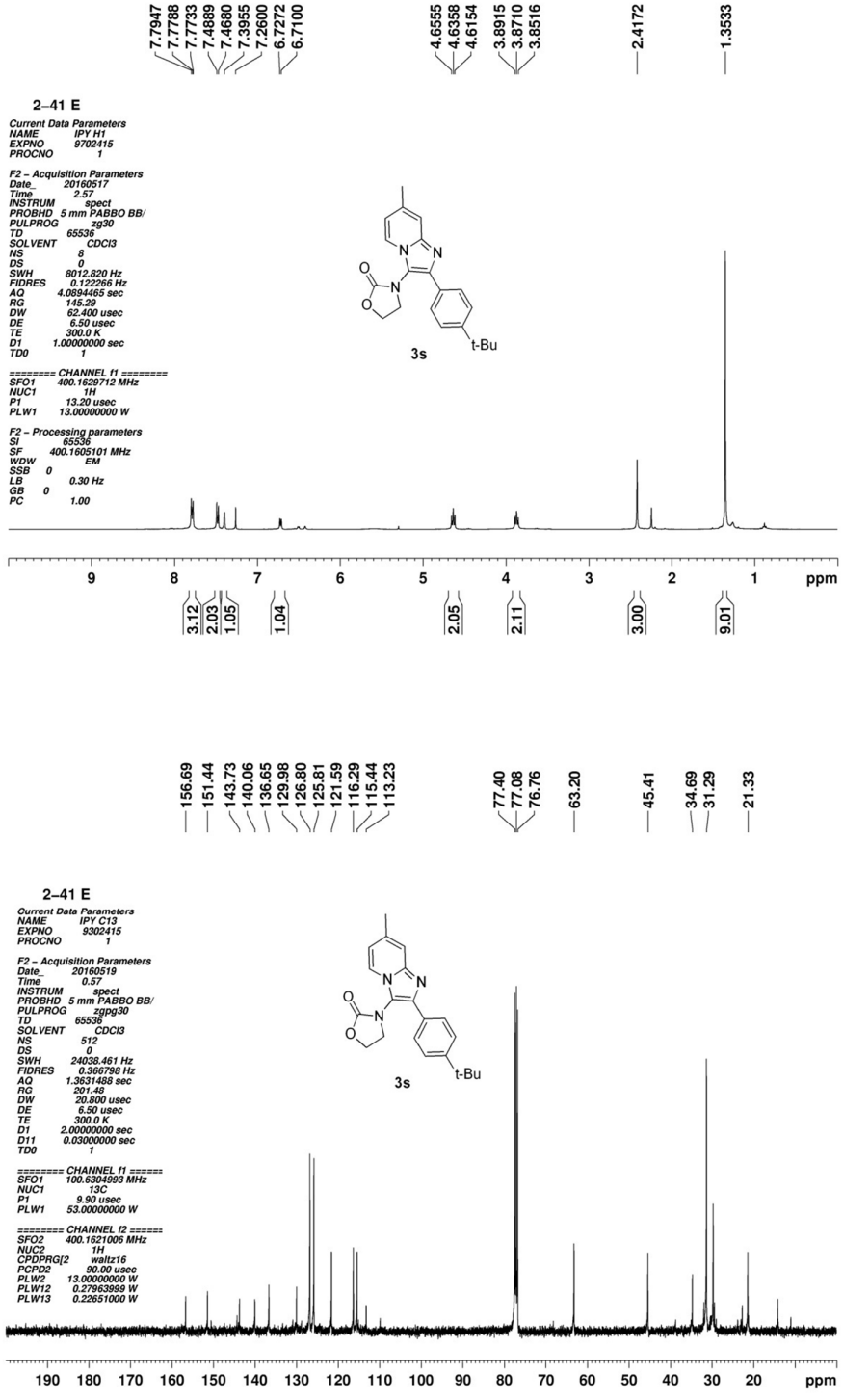


FigureS18. ^{1}H and ^{13}C NMR spectrum of 3-(2-(4-butylphenyl)-6-methylimidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one (3r)

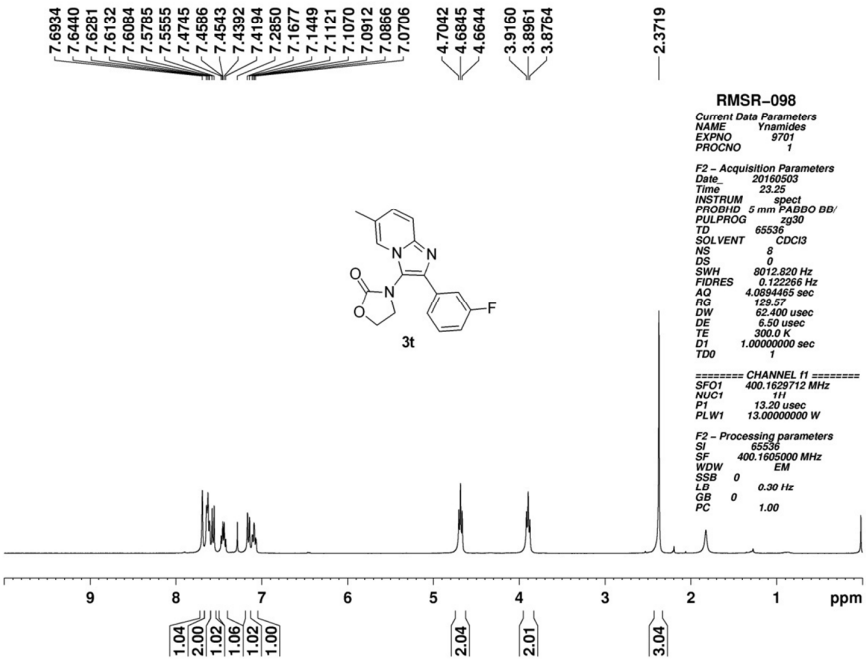


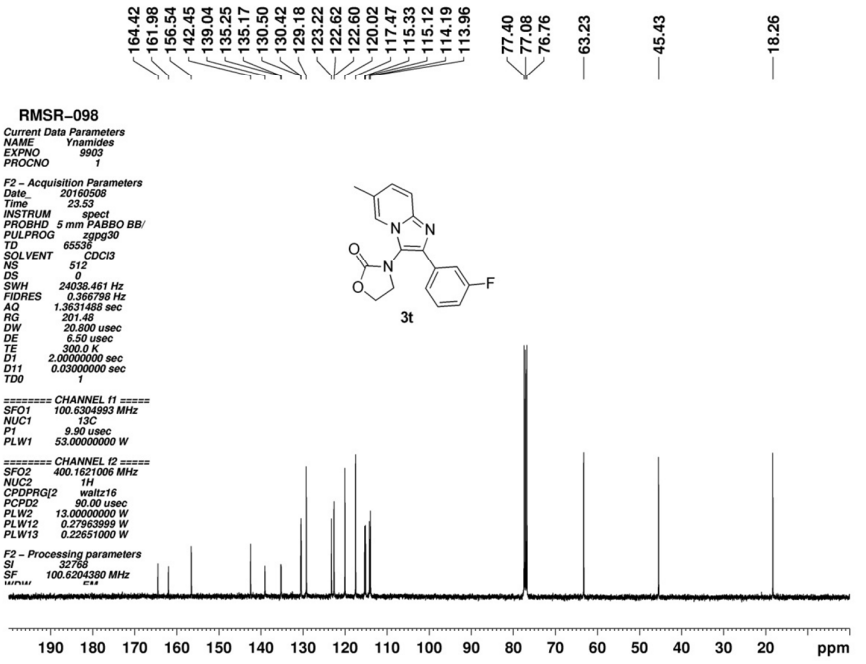


FigureS19. ^{1}H and ^{13}C NMR spectrum of 3-(2-(4-(tert-butyl)phenyl)-7-methylimidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one(3s)

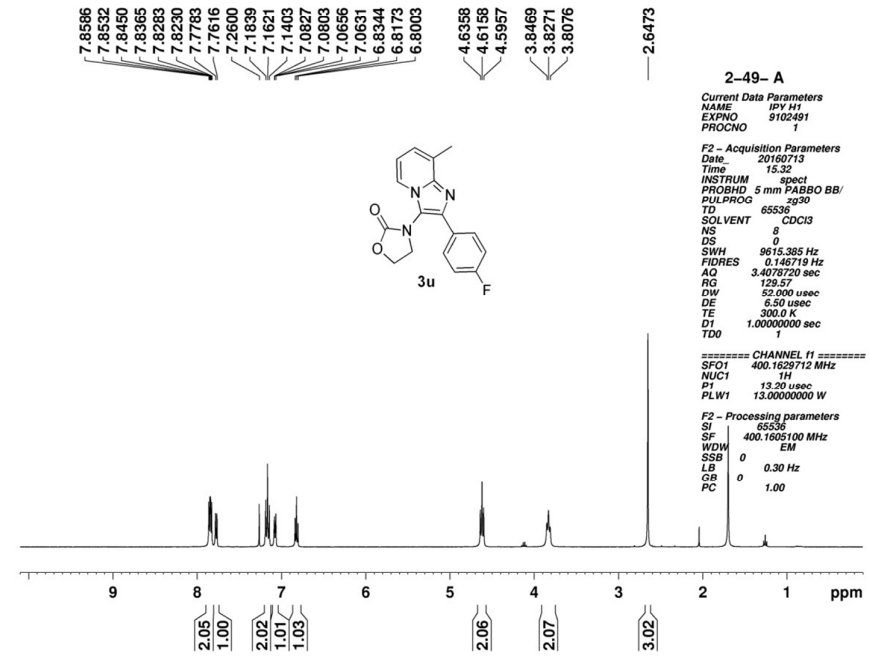


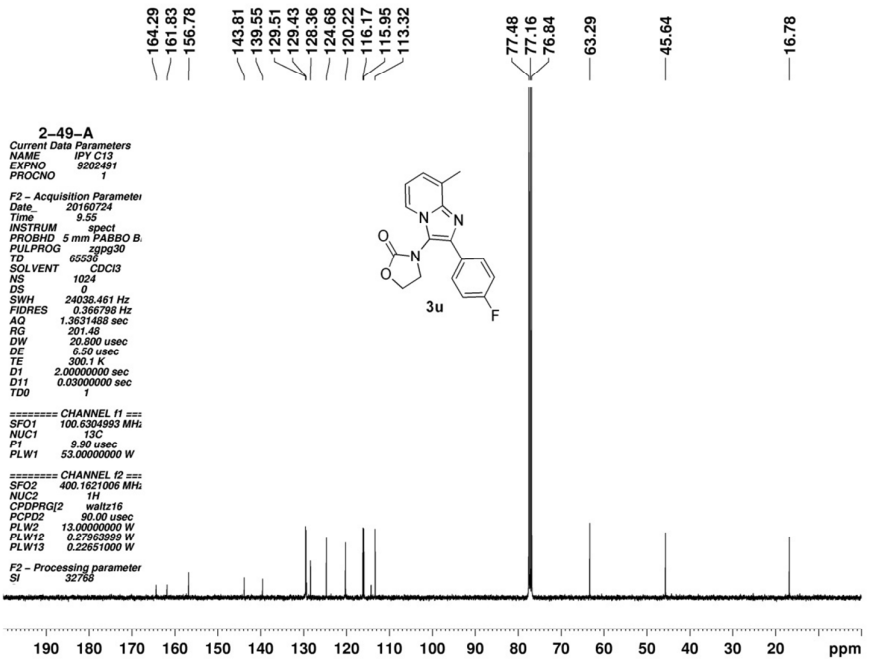
FigureS20. ^{1}H and ^{13}C NMR spectrum of 3-(2-(3-fluorophenyl)-6-methylimidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one (3t)



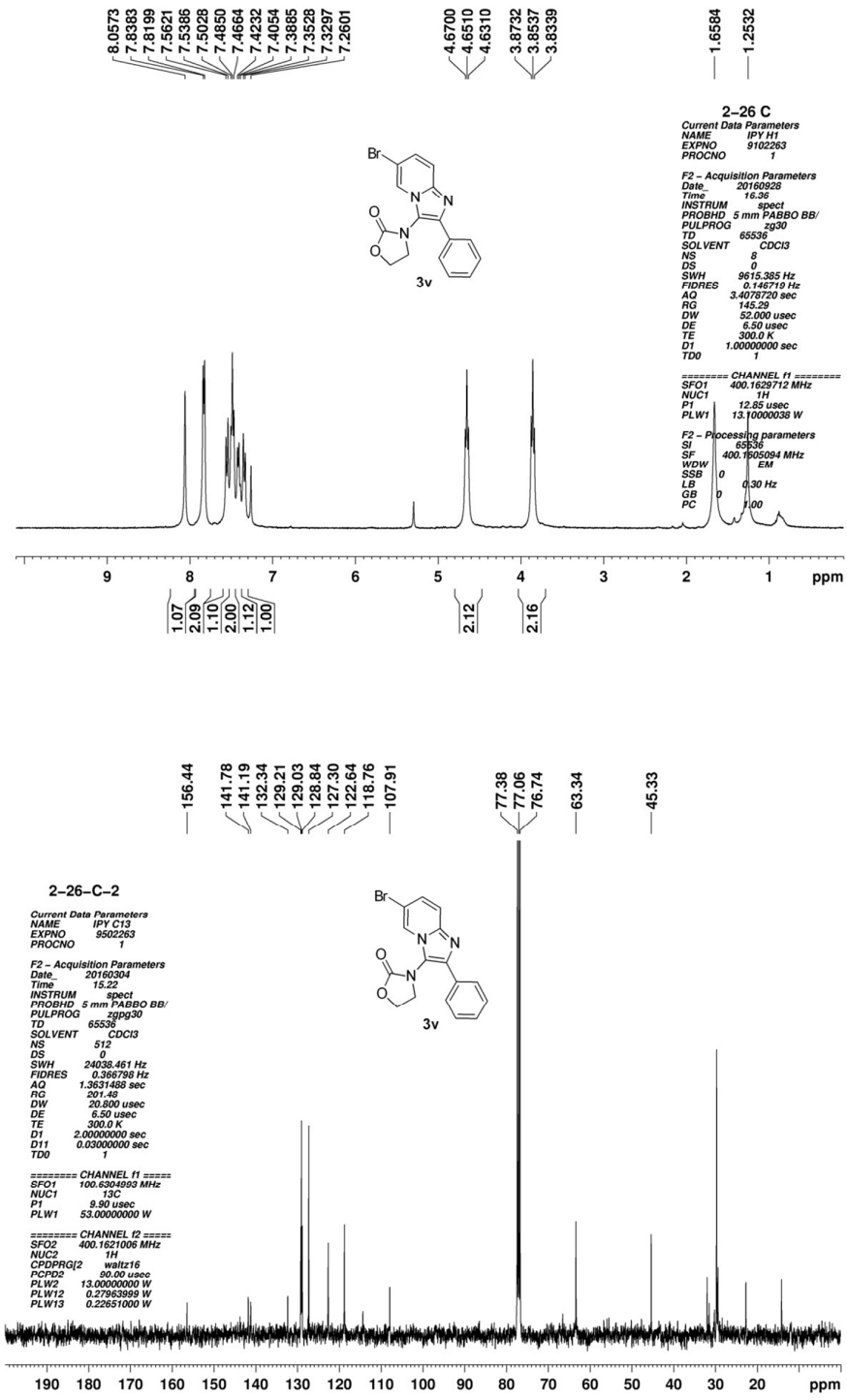


FigureS21. ^{1}H and ^{13}C NMR spectrum of 3-(2-(4-fluorophenyl)-8-methylimidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one(3u)

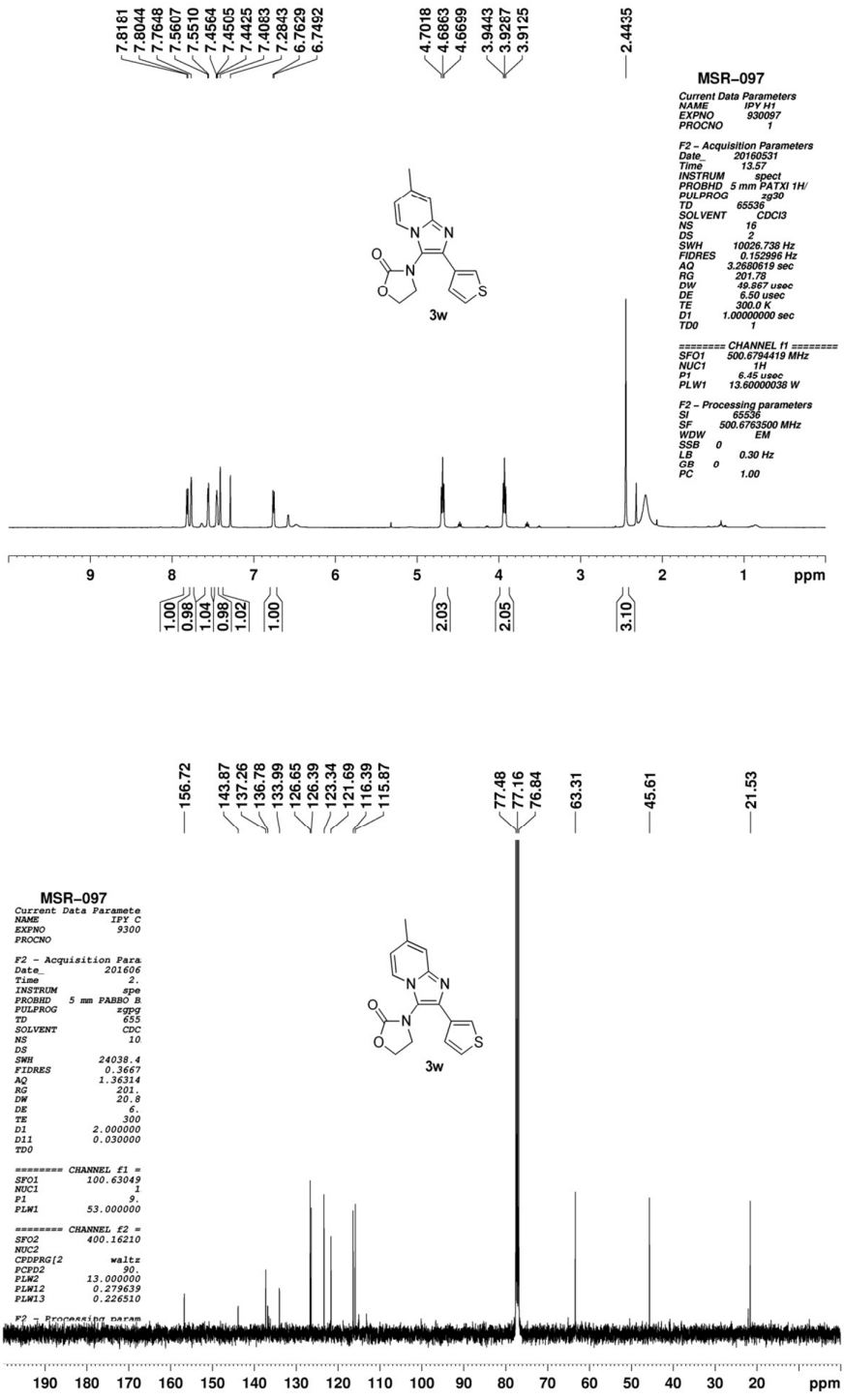




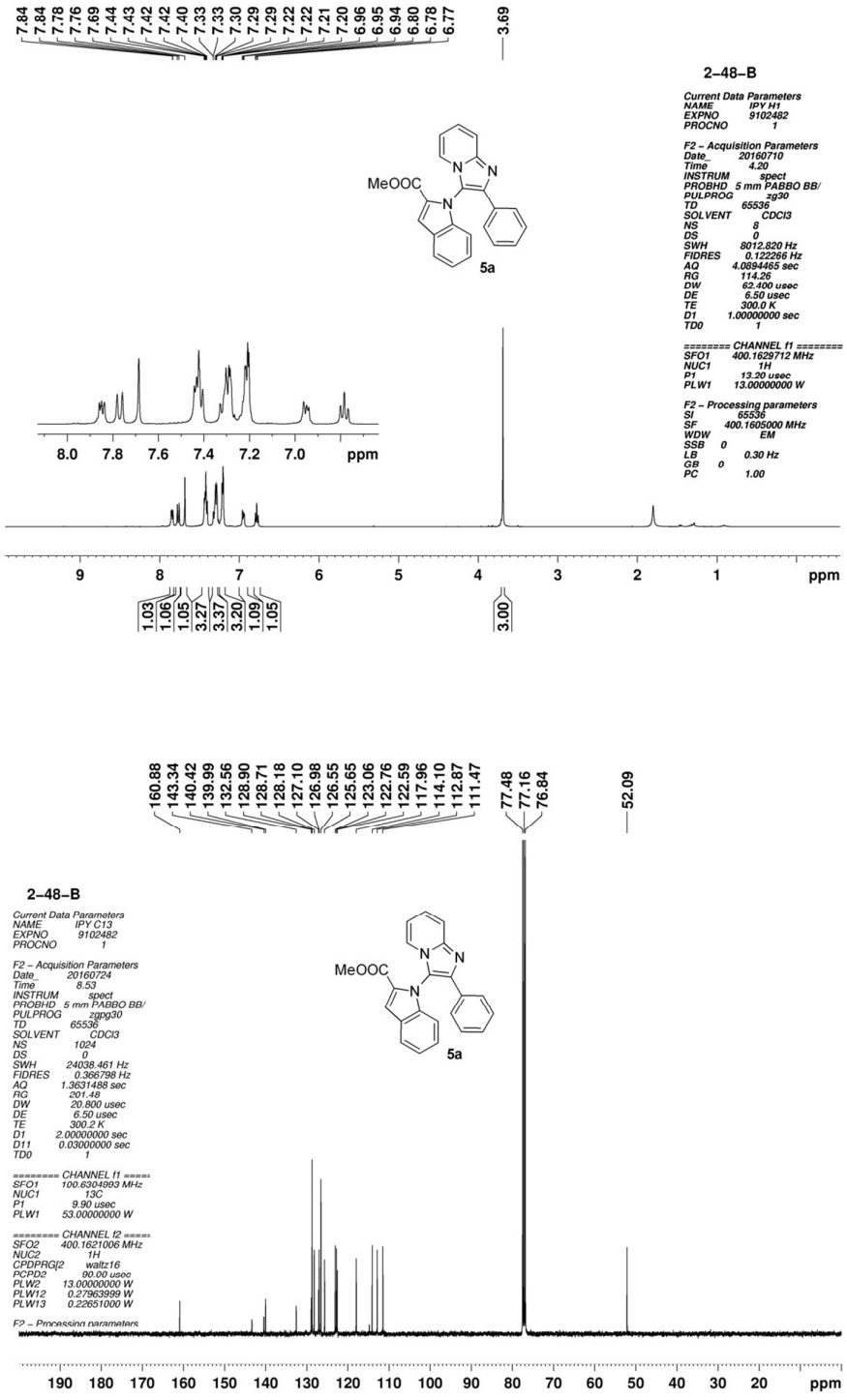
FigureS22. ^{1}H and ^{13}C NMR spectrum of 3-(6-bromo-2-phenylimidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one (3v)



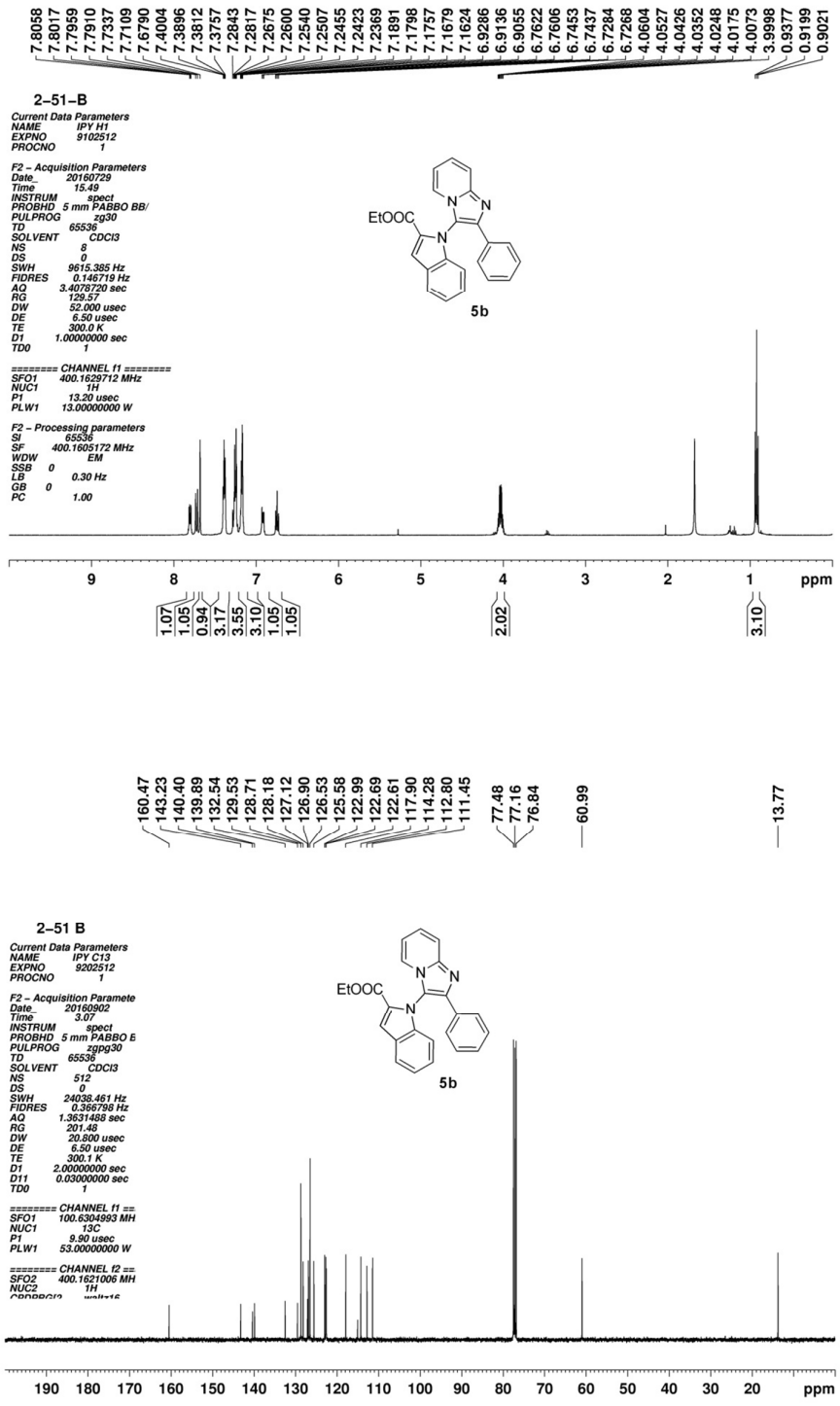
FigureS23. ^{1}H and ^{13}C NMR spectrum of 3-(7-methyl-2-(thiophen-3-yl)imidazo[1,2-a]pyridin-3-yl)oxazolidin-2-one(3w)



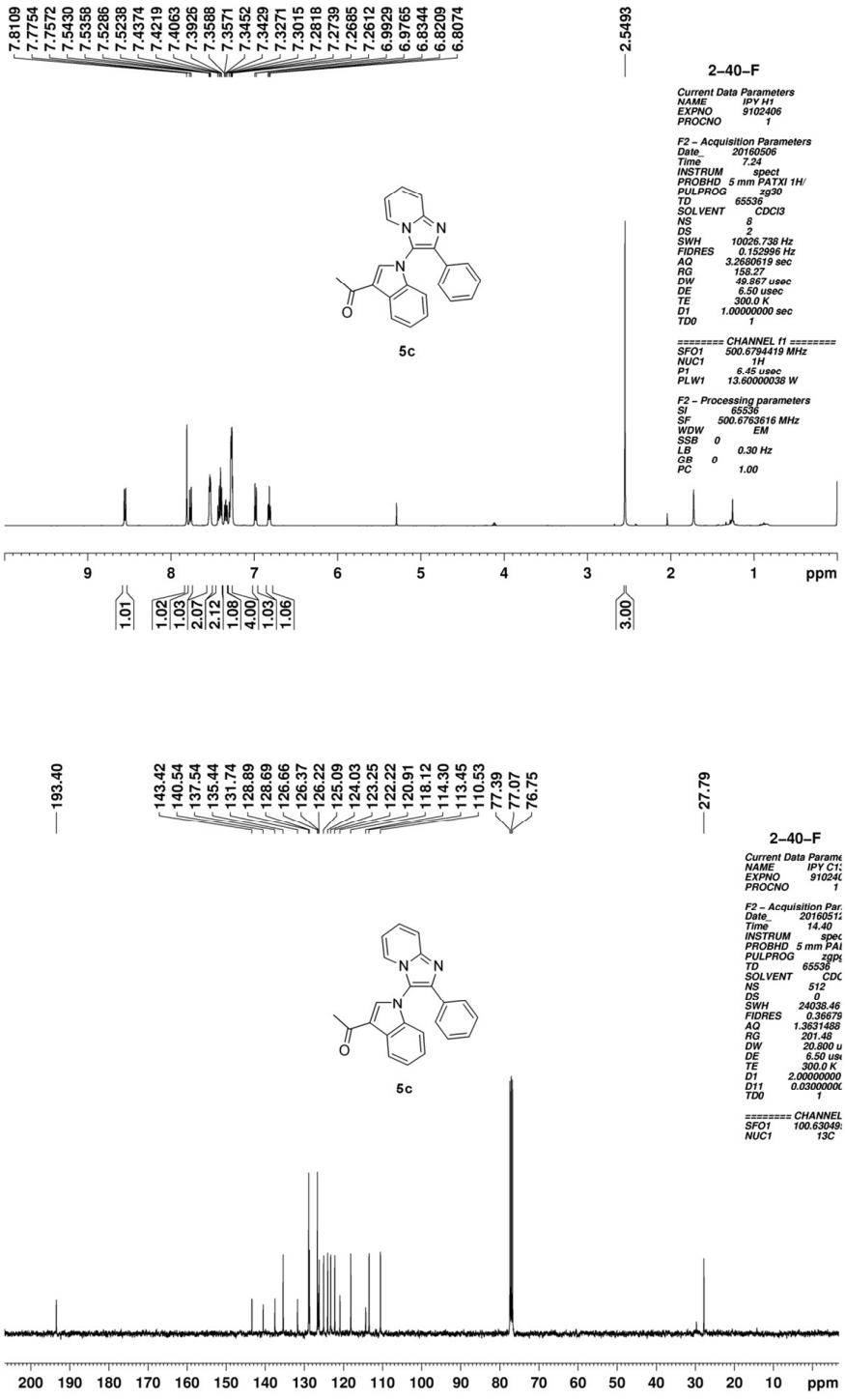
FigureS24. ^{1}H and ^{13}C NMR spectrum of Methyl 1-(2-phenylimidazo[1,2-a]pyridin-3-yl)-1H-indole-2-carboxylate (5a)



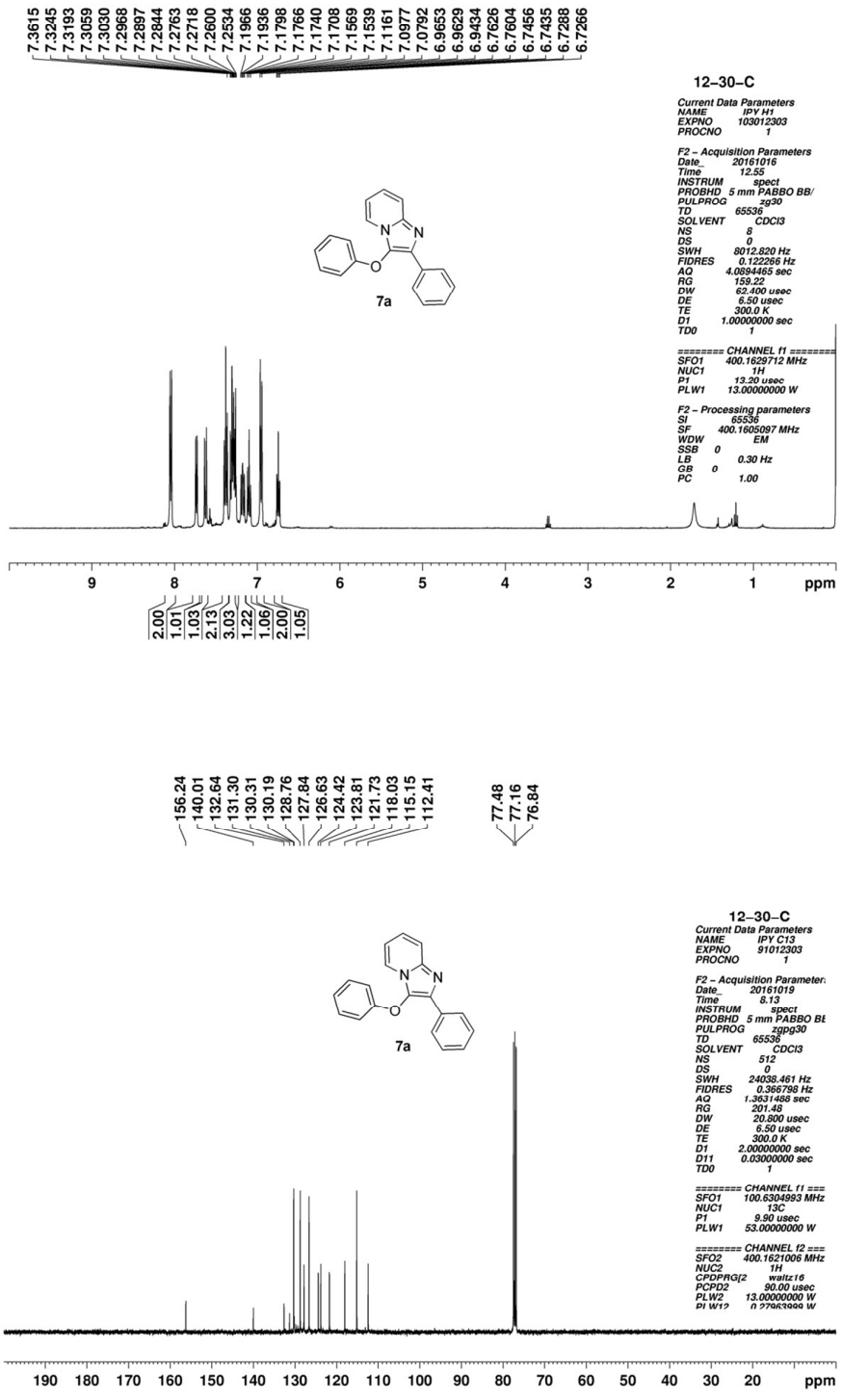
FigureS25. ^{1}H and ^{13}C NMR spectrum of Ethyl 1-(2-phenylimidazo[1,2-a]pyridin-3-yl)-1H-indole-2-carboxylate (5b)



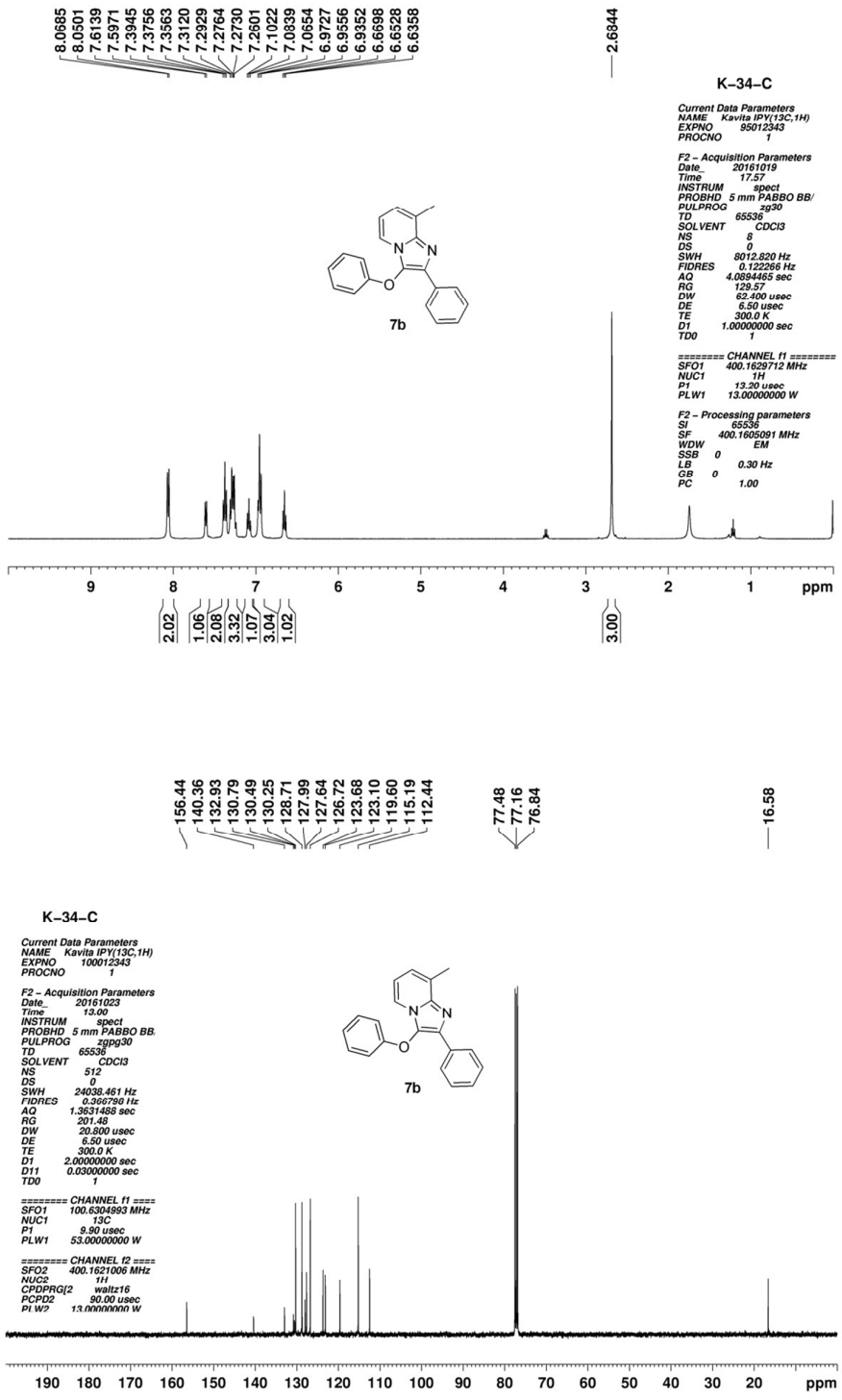
FigureS26. ^{1}H and ^{13}C NMR spectrum of 1-(1-(2-phenylimidazo[1,2-a]pyridin-3-yl)-1H-indol-3-yl)ethan-1-one (5c)



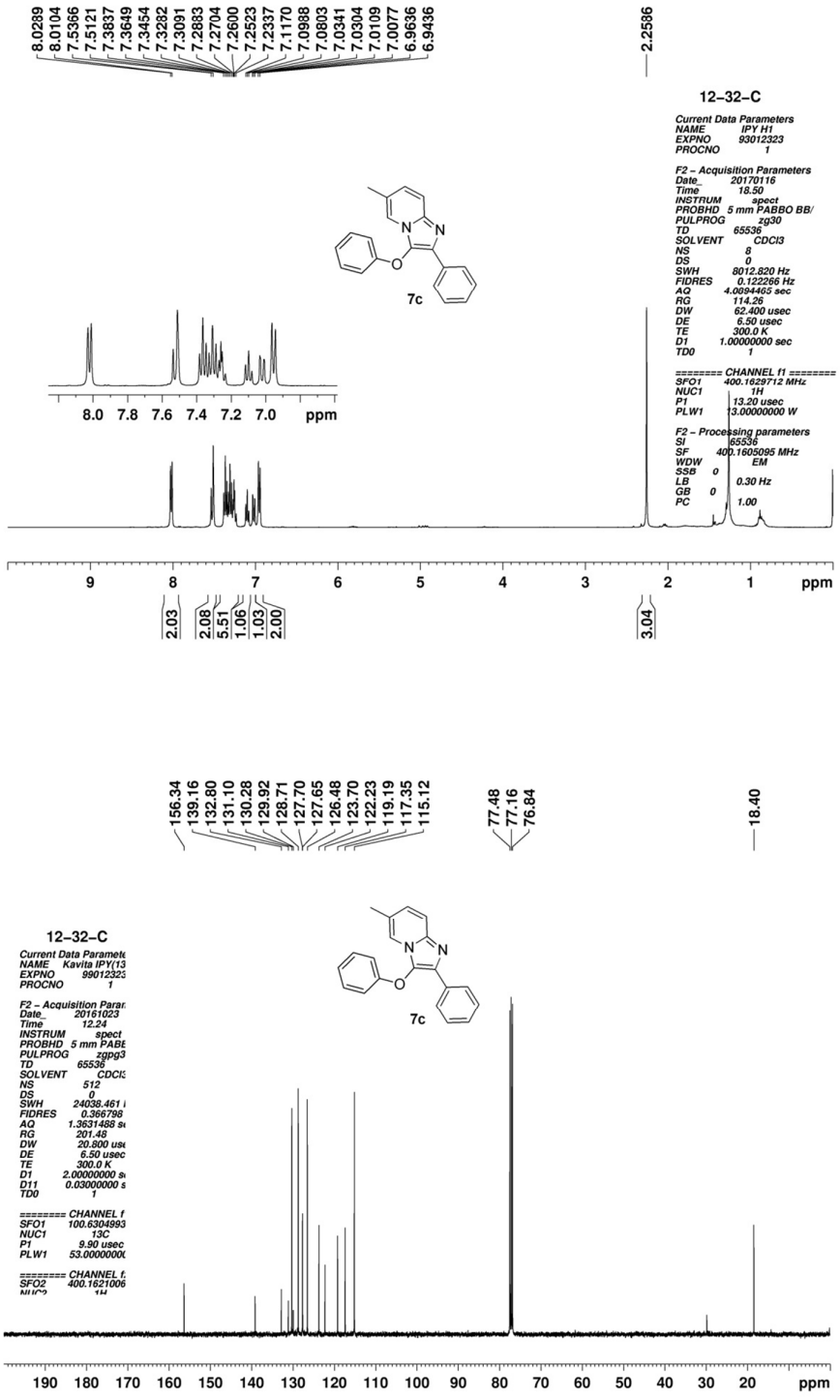
FigureS27. ^{1}H and ^{13}C NMR spectrum of 3-phenoxy-2-phenylimidazo[1,2-a]pyridine (7a)



FigureS28. ^{1}H and ^{13}C NMR spectrum of 8-methyl-3-phenoxy-2-phenylimidazo[1,2-a]pyridine (7b)



FigureS29. ^{1}H and ^{13}C NMR spectrum of 6-methyl-3-phenoxy-2-phenylimidazo[1,2-a]pyridine (7c)



FigureS30. ^{1}H and ^{13}C NMR spectrum of 3-phenoxy-2-(p-tolyl)imidazo[1,2-a]pyridine (7d)