Synthesis, In Silico Study, and In Vitro Antifungal Activity of New 5-(1,3-Diphenyl-1*H*-Pyrazol-4-yl)-4-Tosyl-4,5-Dihydrooxazoles

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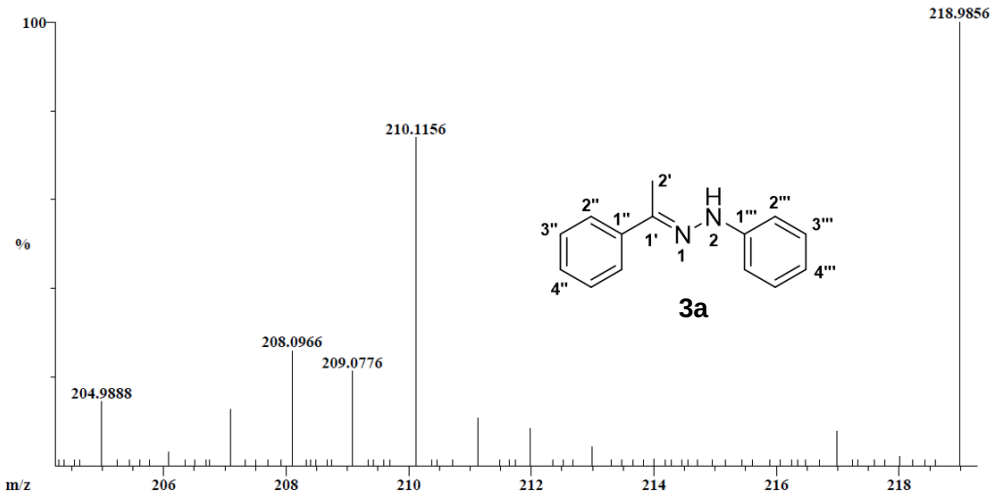
Characterization of series **3a-j**

Table S1. Reported sources addressing the characterization of hidrazones **3a-j** [76–84].

Compound	Reference
3a and **3h**	Hu, X., Martin, D., & Bertrand, G. (2016). Room temperature hydroamination of alkynes with anilines catalyzed by anti-Bredt di(amino)carbene gold(I) complexes. *New Journal of Chemistry*, *40*(7), 5993–5996. https://doi.org/10.1039/c6nj00980h
3b	Desai, N. C., Joshi, V. V., Rajpara, K. M., Vaghani, H. V., & Satodiya, H. M. (2012). Facile synthesis of novel fluorine containing pyrazole based thiazole derivatives and evaluation of antimicrobial activity. *Journal of Fluorine Chemistry*, *142*, 67–78. https://doi.org/10.1016/j.jfluchem.2012.06.021
3c	Yadlapalli, R. K., Chourasia, O. P., Vemuri, K., Sritharan, M., & Perali, R. S. (2012). Synthesis and in vitro anticancer and antitubercular activity of diarylpyrazole ligated dihydropyrimidines possessing lipophilic carbamoyl group. *Bioorganic and Medicinal Chemistry Letters*, *22*(8), 2708–2711. https://doi.org/10.1016/j.bmcl.2012.02.101
3d	Sharma, J., Tuli, H. S., Kinger, M., Pal, R., Abbas, Z., & Kumar, M. (2022). Synthesis, Characterization and Biological Screening of Novel Imidazolylpyrazole Scaffolds. *Asian Journal of Chemistry*, *34*(3), 614–618. https://doi.org/10.14233/ajchem.2022.23570
3e	Homes, T. P., Mattner, F., Keller, P. A., & Katsifis, A. (2006). Synthesis and in vitro binding of N,N-dialkyl-2-phenylindol-3-yl-glyoxylamides for the peripheral benzodiazepine binding sites. *Bioorganic and Medicinal Chemistry*, *14*(11), 3938–3946. https://doi.org/10.1016/j.bmc.2006.01.039
3f	Zhang, G., Miao, J., Zhao, Y., & Ge, H. (2012). Copper-catalyzed aerobic dehydrogenative cyclization of N-methyl-N-phenylhydrazones: Synthesis of cinnolines. *Angewandte Chemie - International Edition*, *51*(33), 8318–8321. https://doi.org/10.1002/anie.201204339
3g	Sandhya, P. V., Kumar, K. V. S., & Haridas, K. R. (2022). Synthesis, Molecular Docking and DFT Studies of Biologically Active N-((3-(4-Nitrophenyl)-1-phenyl-1H-pyrazol-4-yl)methylene)aniline Derivatives. *Asian Journal of Chemistry*, *34*(2), 297–304. https://doi.org/10.14233/ajchem.2022.23500
3i	Kishk, S. M., McLean, K. J., Sood, S., Smith, D., Evans, J. W. D., Helal, M. A., Gomaa, M. S., Salama, I., Mostafa, S. M., de Carvalho, L. P. S., Levy, C. W., Munro, A. W., & Simons, C. (2019). Design and Synthesis of Imidazole and Triazole Pyrazoles as Mycobacterium Tuberculosis CYP121A1 Inhibitors. *ChemistryOpen*, *8*(7), 995–1011. https://doi.org/10.1002/open.201900227
3j	La Regina, G., Bai, R., Rensen, W. M., Di Cesare, E., Coluccia, A., Piscitelli, F., Famiglini, V., Reggio, A., Nalli, M., Pelliccia, S., Da Pozzo, E., Costa, B., Granata, I., Porta, A., Maresca, B., Soriani, A., Iannitto, M. L., Santoni, A., Li, J., … Silvestri, R. (2013). Toward highly potent cancer agents by modulating the C-2 group of the arylthioindole class of tubulin polymerization inhibitors. *Journal of Medicinal Chemistry*, *56*(1), 123–149. https://doi.org/10.1021/jm3013097

The complete spectroscopic data of **3g** is presented as an illustrative example.



Selected Isotopes : $H_{0-14}C_{0-14}N_{0-2}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
210.1156	74.0%	$C_{14}H_{14}N_2$	210.1157	-0.5	9.0

Figure S1. HRMS of (*E*)-1-phenyl-2-(1-phenylethylidene)hydrazone **3a**.

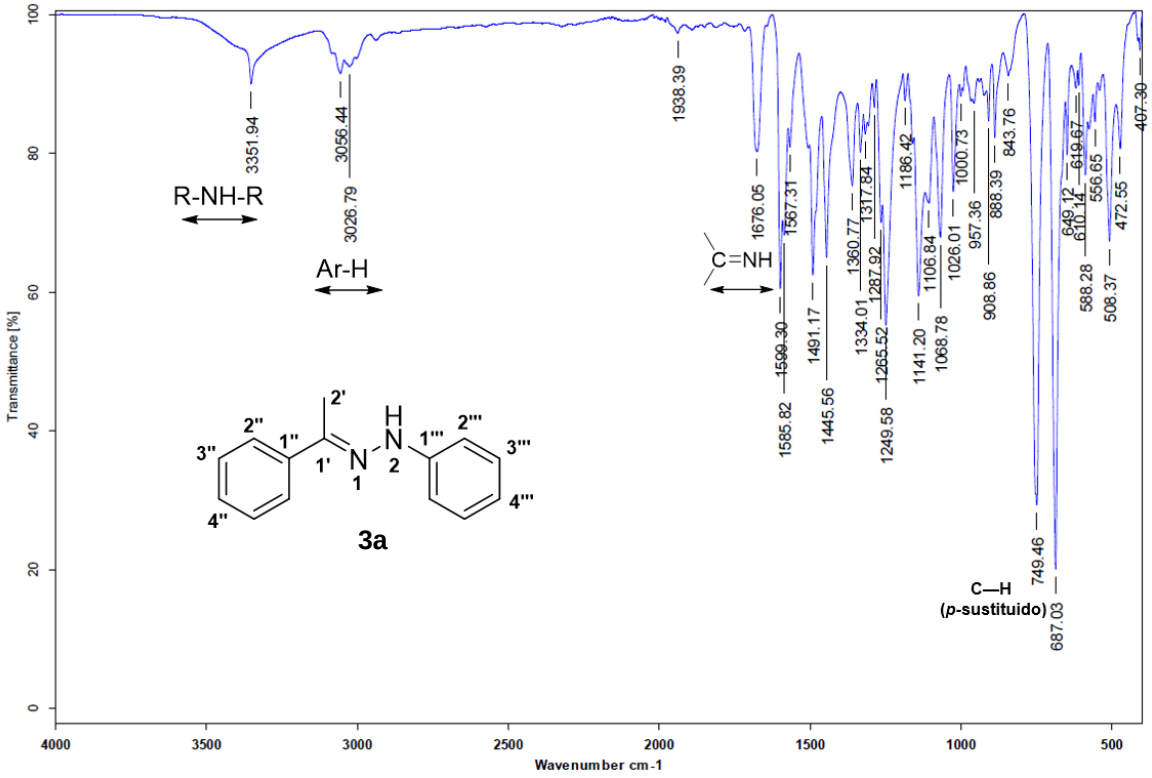


Figure S2. FT-IR of (*E*)-1-phenyl-2-(1-phenylethylidene)hydrazone **3a**.

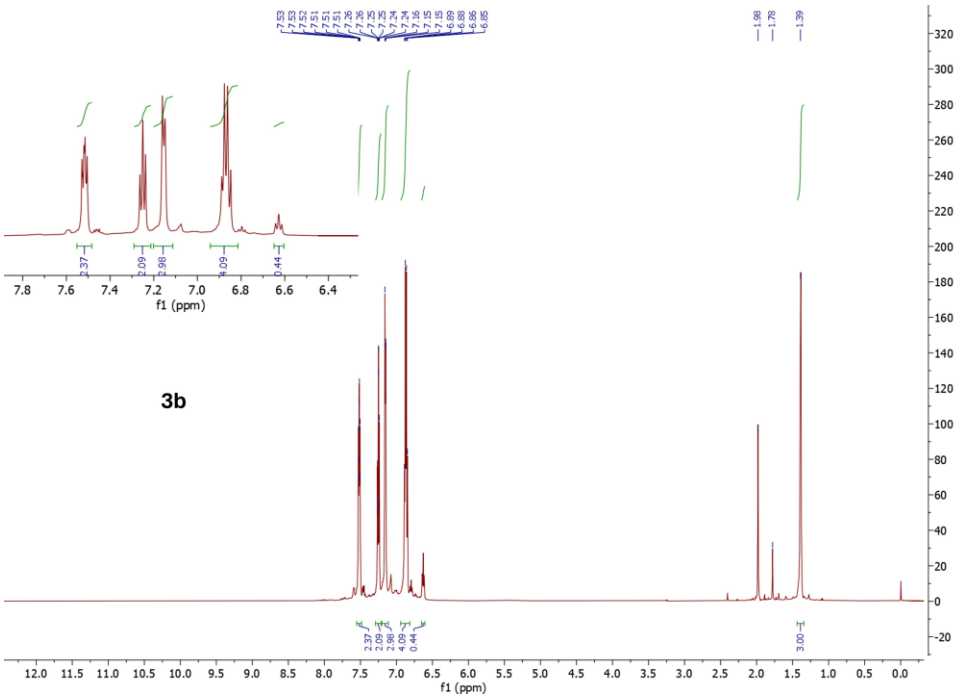


Figure S3. ^{1}H NMR (600 MHz, C_6D_6) of (*E*)-1-(1-(4-fluorophenyl)ethylidene)-2-phenylhydrazone **3b**.

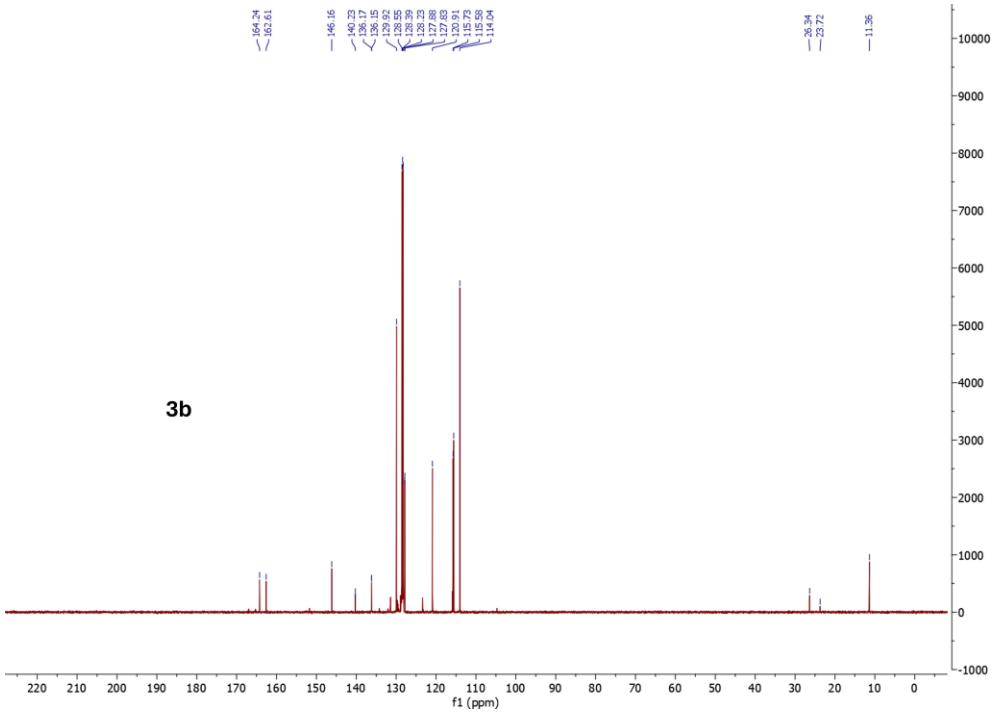
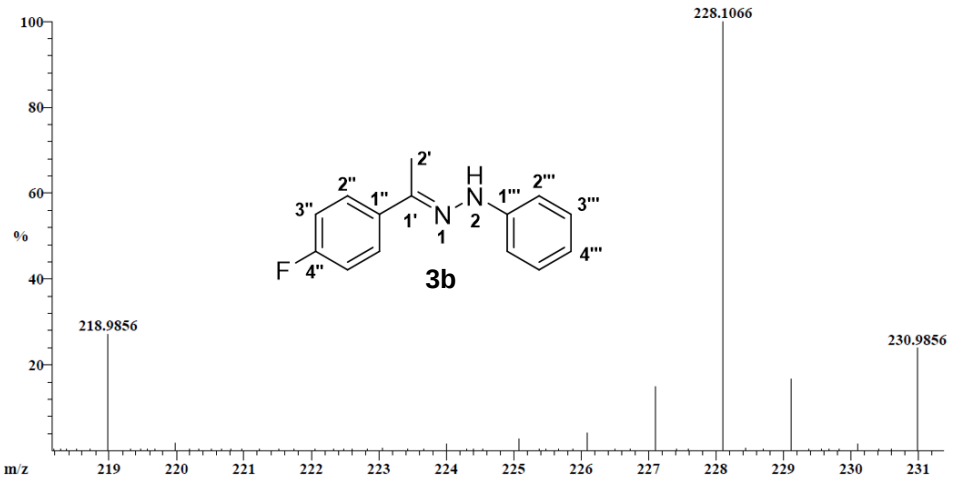


Figure S4. ^{13}C NMR (150 MHz, C_6D_6) of (*E*)-1-(1-(4-fluorophenyl)ethylidene)-2-phenylhydrazone **3b**.



Selected Isotopes : $H_{0-13}C_{0-14}N_{0-2}F_{0-1}$ Error Limit : 5 ppm Unsaturation Limits : 0 to 50

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
228.1066	100.0%	$C_{14}H_{13}N_2F$	228.1063	1.4	9.0

Figure S5. HRMS of (*E*)-1-(1-(4-fluorophenyl)ethylidene)-2-phenylhydrazone **3b**.

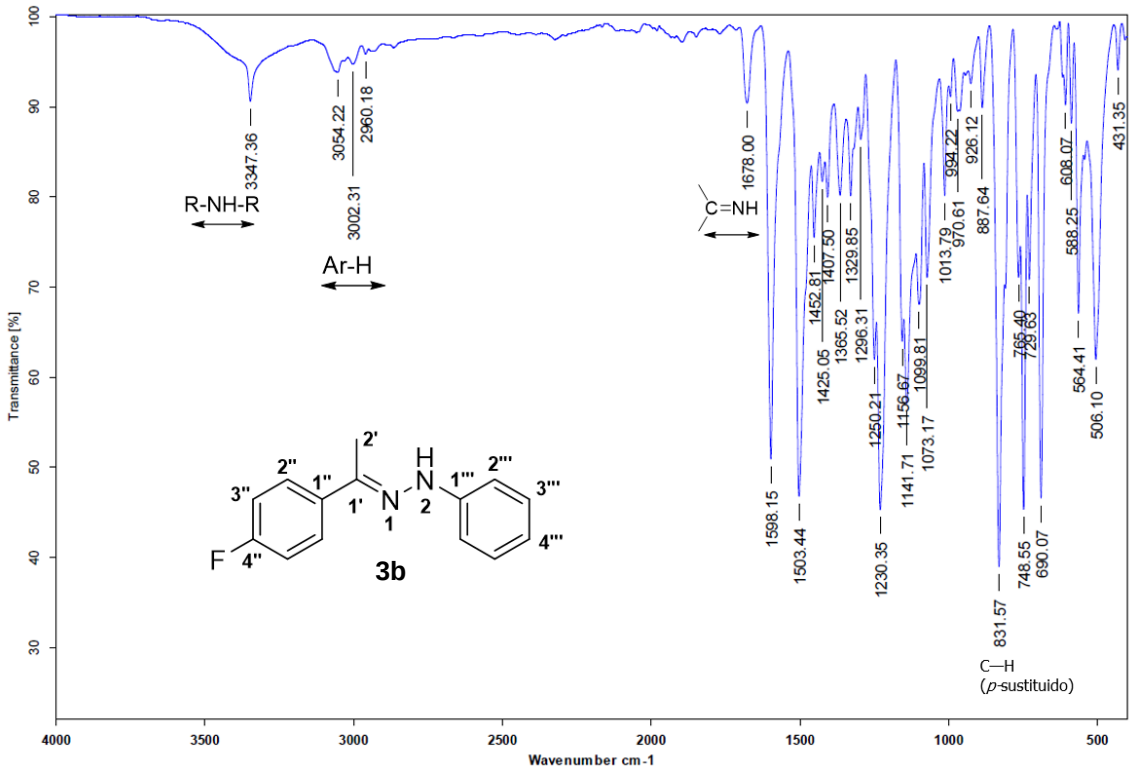


Figure S6. FT-IR of (*E*)-1-(1-(4-fluorophenyl)ethylidene)-2-phenylhydrazone **3b**.

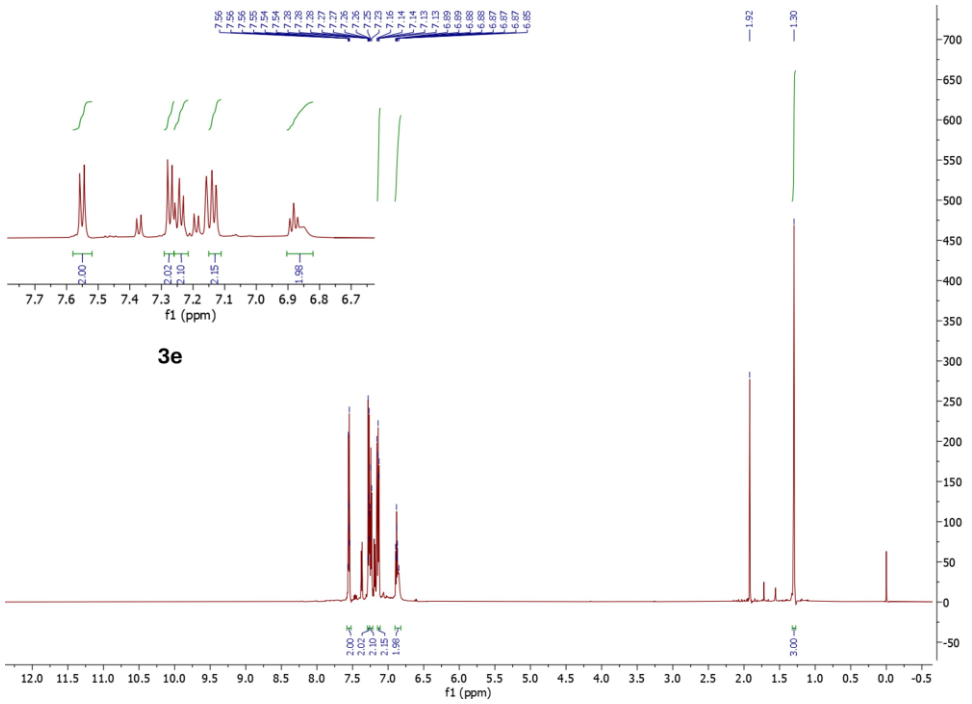


Figure S7. ^{1}H NMR (600 MHz, C_6D_6) of (*E*)-1-(1-(4-chlorophenyl)ethylidene)-2-phenylhydrazone **3c**.

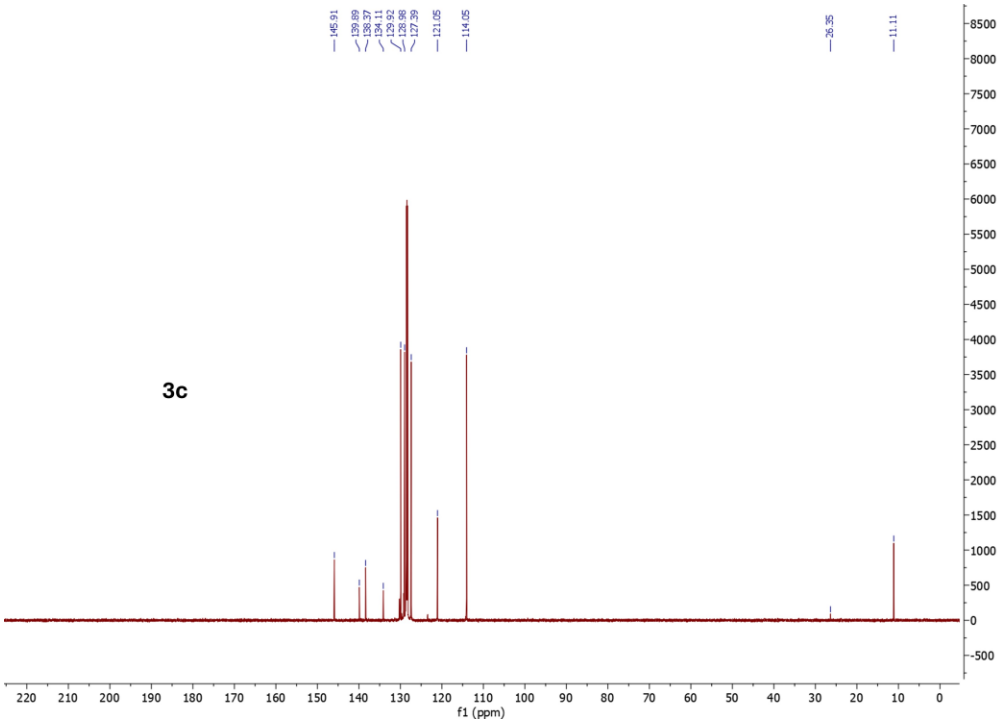
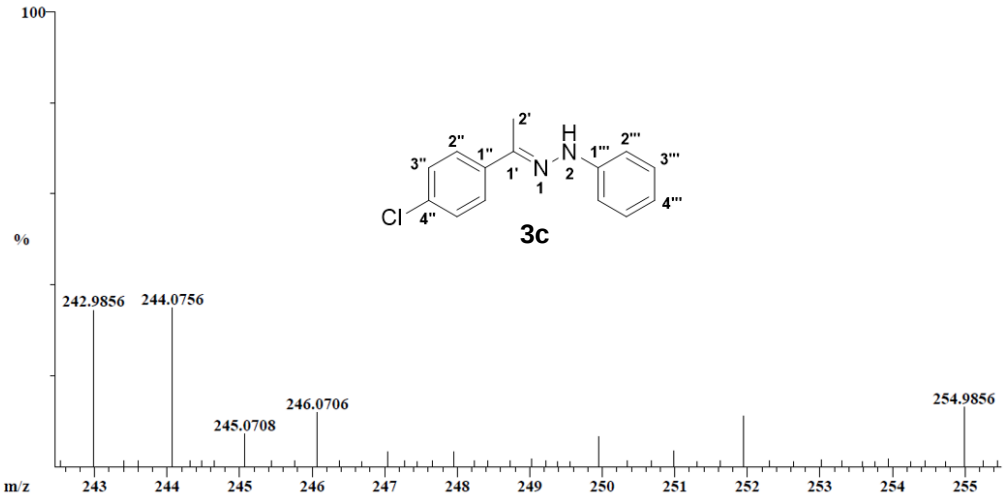


Figure S8. ^{13}C NMR (150 MHz, C_6D_6) of (*E*)-1-(1-(4-chlorophenyl)ethylidene)-2-phenylhydrazone **3c**.



Selected Isotopes : $H_{0-13}C_{0-14}N_{0-2}Cl_{0-1}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
244.0756	34.9%	$C_{14}H_{13}N_2Cl$	244.0767	-4.6	9.0

Figure S9. HRMS of (*E*)-1-(1-(4-chlorophenyl)ethylidene)-2-phenylhydrazone **3c**.

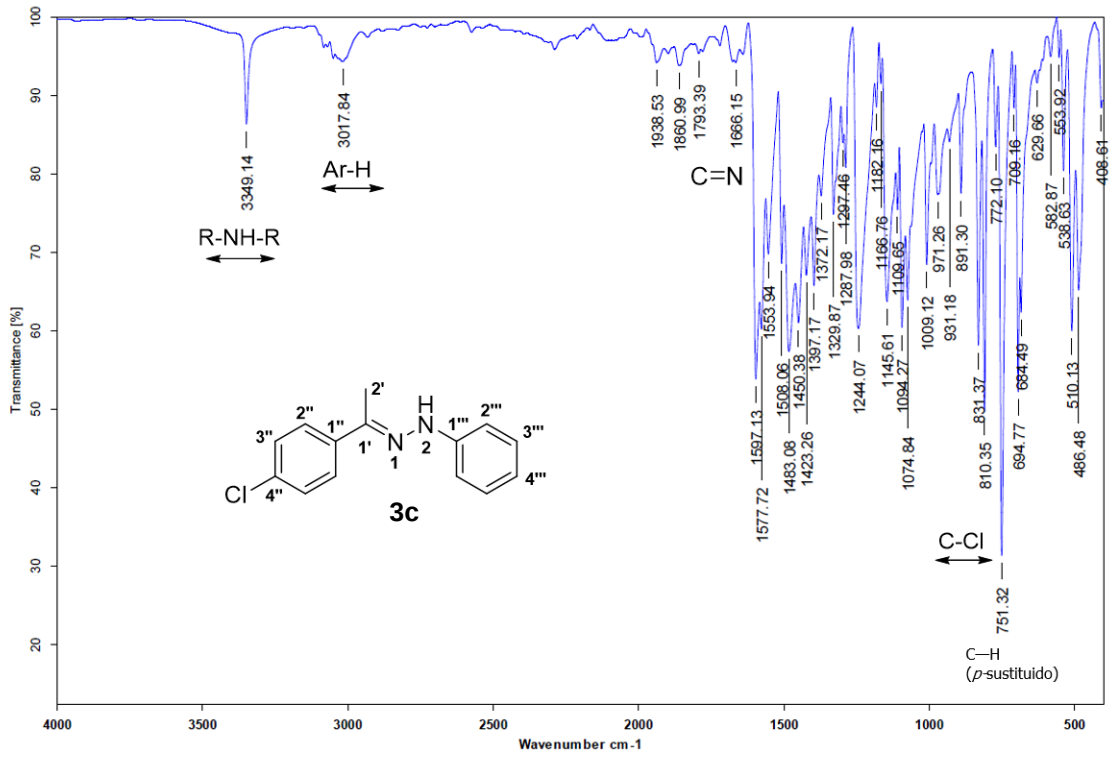


Figure S10. FT-IR of (*E*)-1-(1-(4-chlorophenyl)ethylidene)-2-phenylhydrazone **3c**.

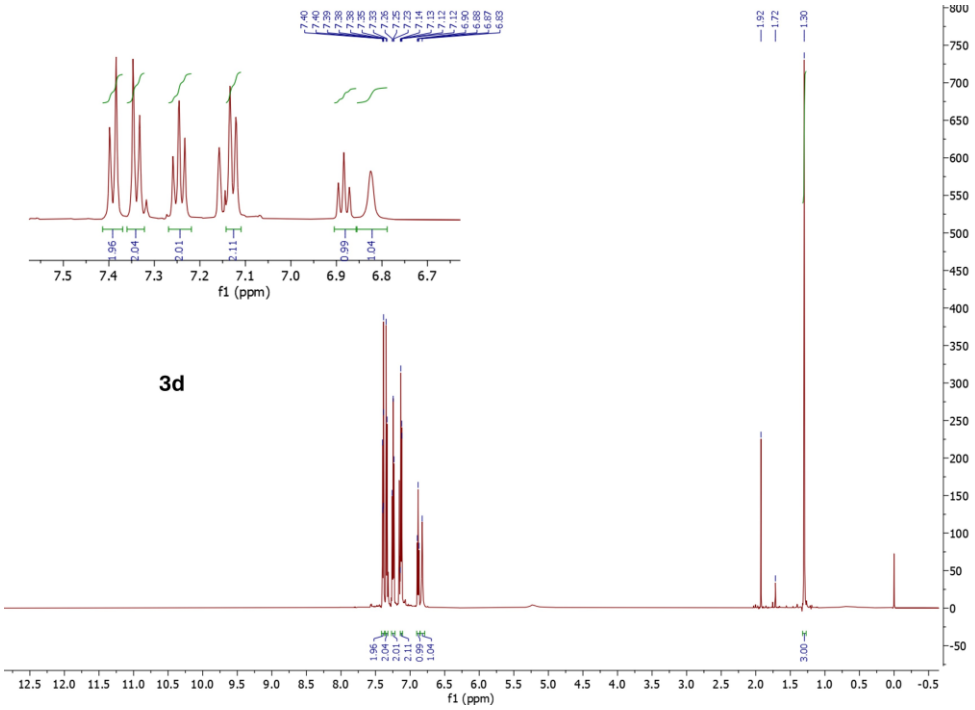


Figure S11. ^{1}H NMR (600 MHz, C_6D_6) of (*E*)-1-(1-(4-bromophenyl)ethylidene)-2-phenylhydrazone **3d**.

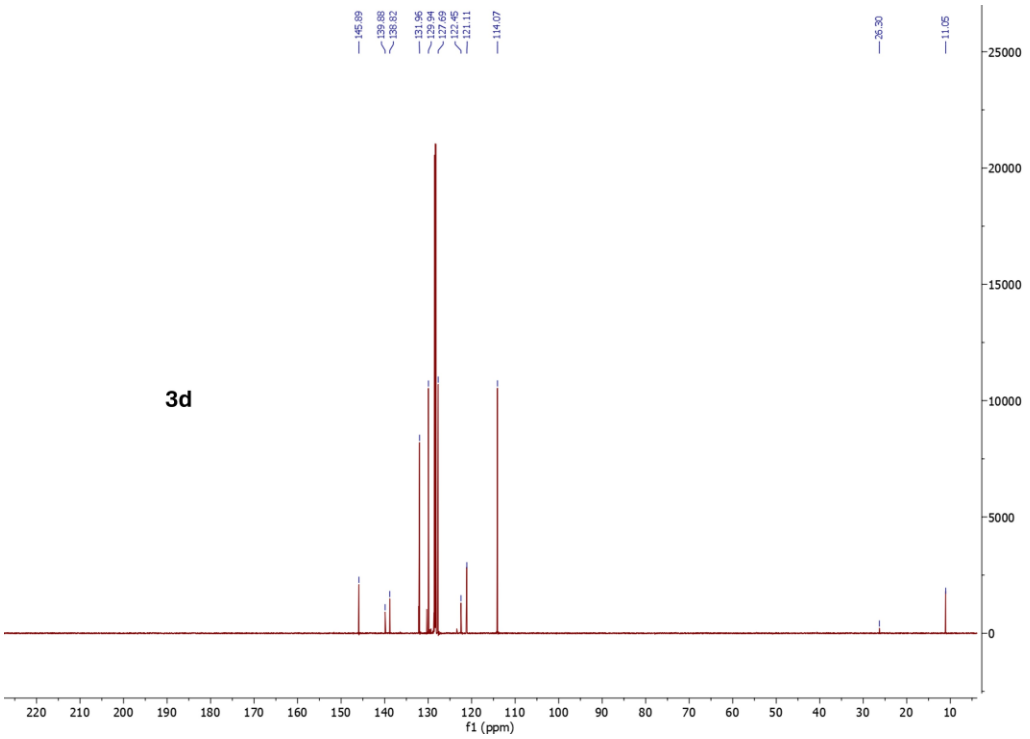
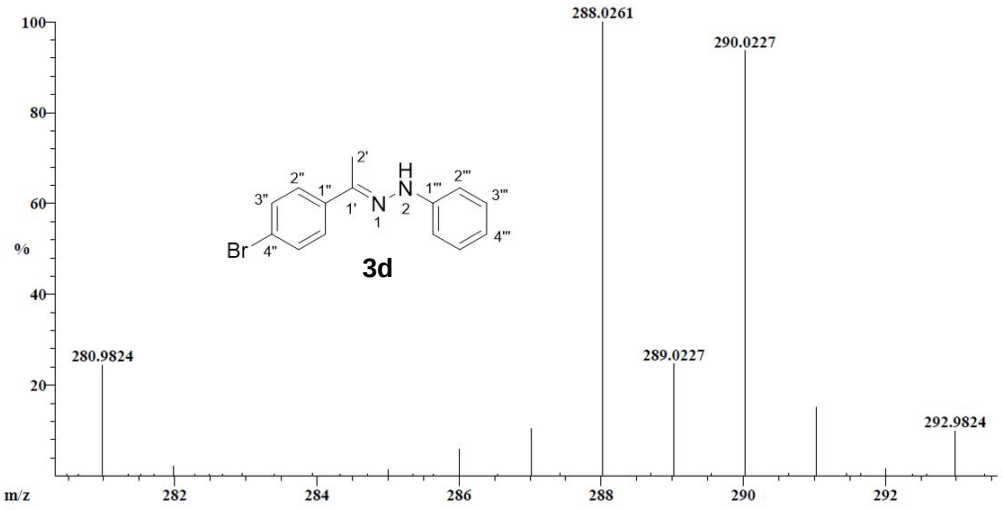


Figure S12. ^{13}C NMR (150 MHz, C_6D_6) of (*E*)-1-(1-(4-bromophenyl)ethylidene)-2-phenylhydrazone **3d**.



Selected Isotopes : $H_{0-13}C_{0-14}N_{0-2}Br_{0-1}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
288.0261	100.0%	$C_{14}H_{13}N_2Br$	288.0262	-0.4	9.0

*

Figure S13. HRMS of (*E*)-1-(1-(4-bromophenyl)ethylidene)-2-phenylhydrazone **3d**.

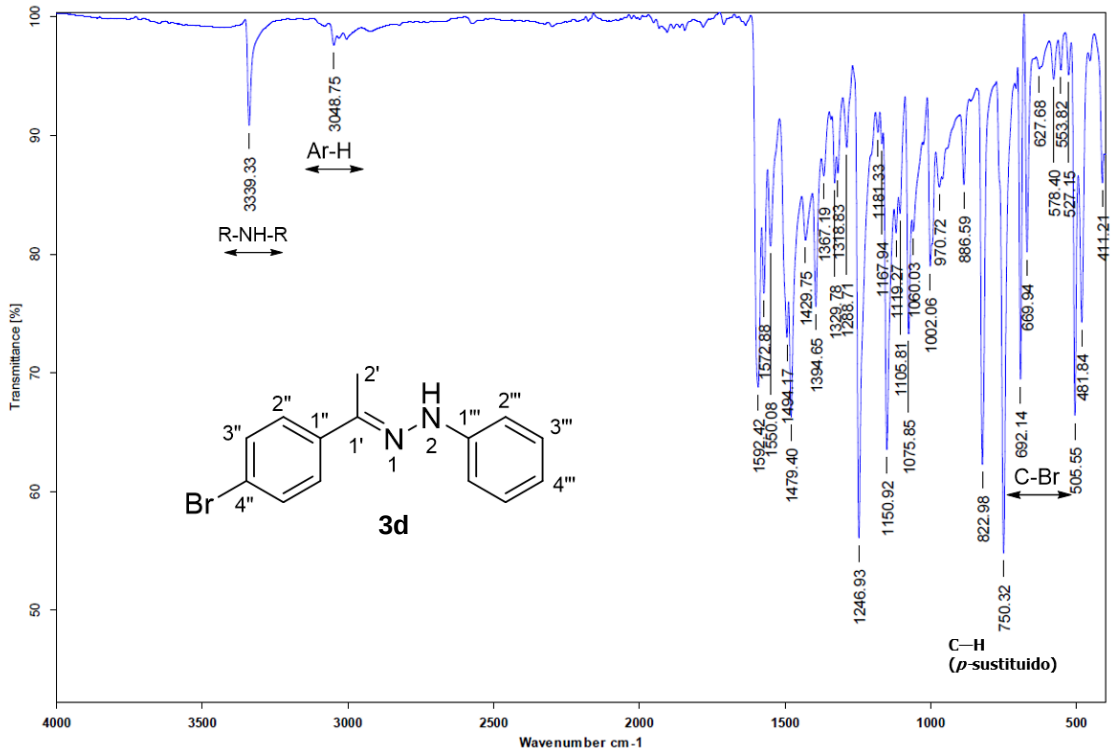


Figure S14. FT-IR of (*E*)-1-(1-(4-bromophenyl)ethylidene)-2-phenylhydrazone **3d**.

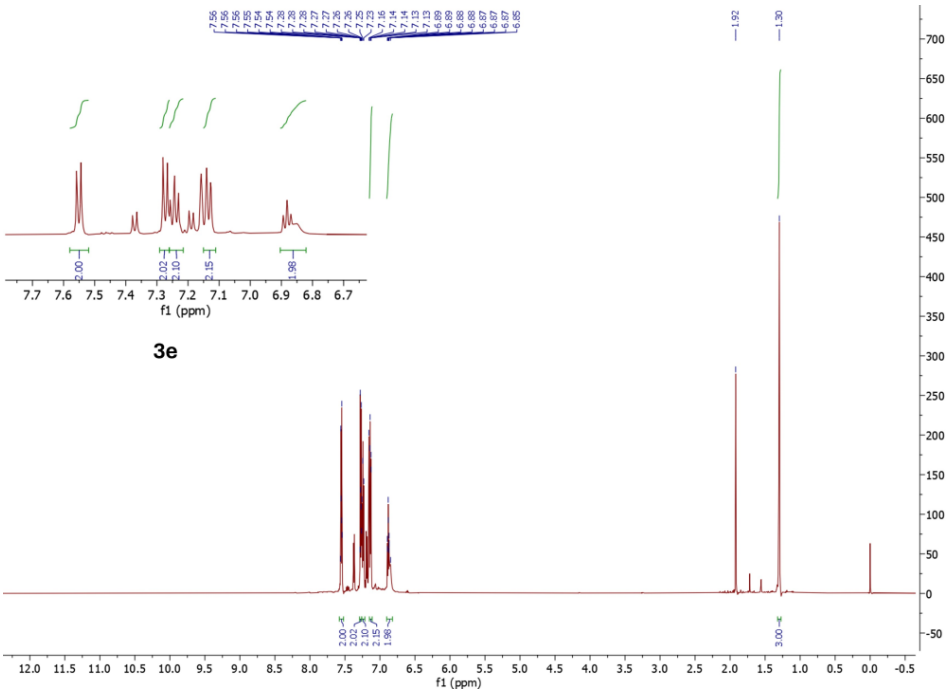


Figure S15. ^{1}H NMR (600 MHz, C_6D_6) of (*E*)-1-(1-(4-iodophenyl)ethylidene)-2-phenylhydrazone **3e.**

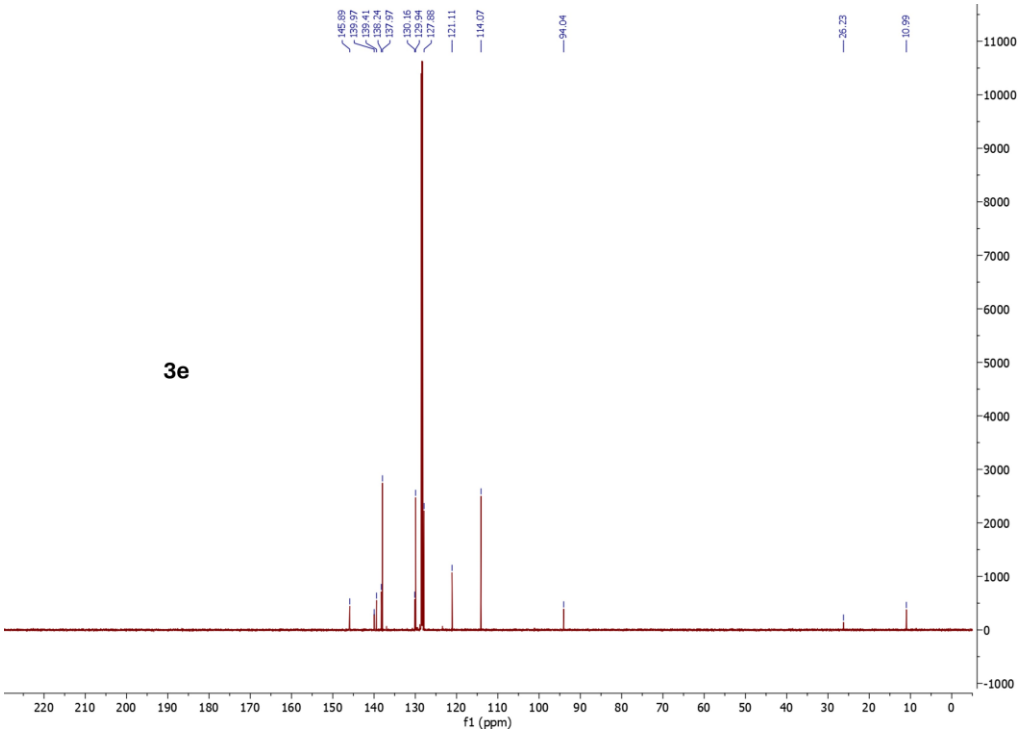
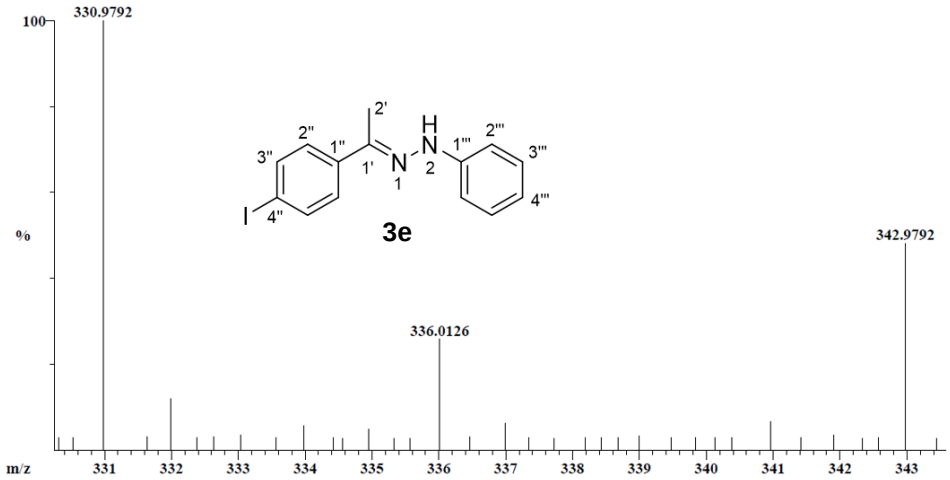


Figure S16. ^{13}C NMR (150 MHz, C_6D_6) of (*E*)-1-(1-(4-iodophenyl)ethylidene)-2-phenylhydrazone **3e.**



Selected Isotopes : $H_{0-13}C_{0-14}N_{0-2}I_{0-1}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
336.0126	25.9%	$C_{14}H_{13}N_2I$	336.0124	0.7	9.0

Figure S17. HRMS of (*E*)-1-(1-(4-iodophenyl)ethylidene)-2-phenylhydrazone **3e**.

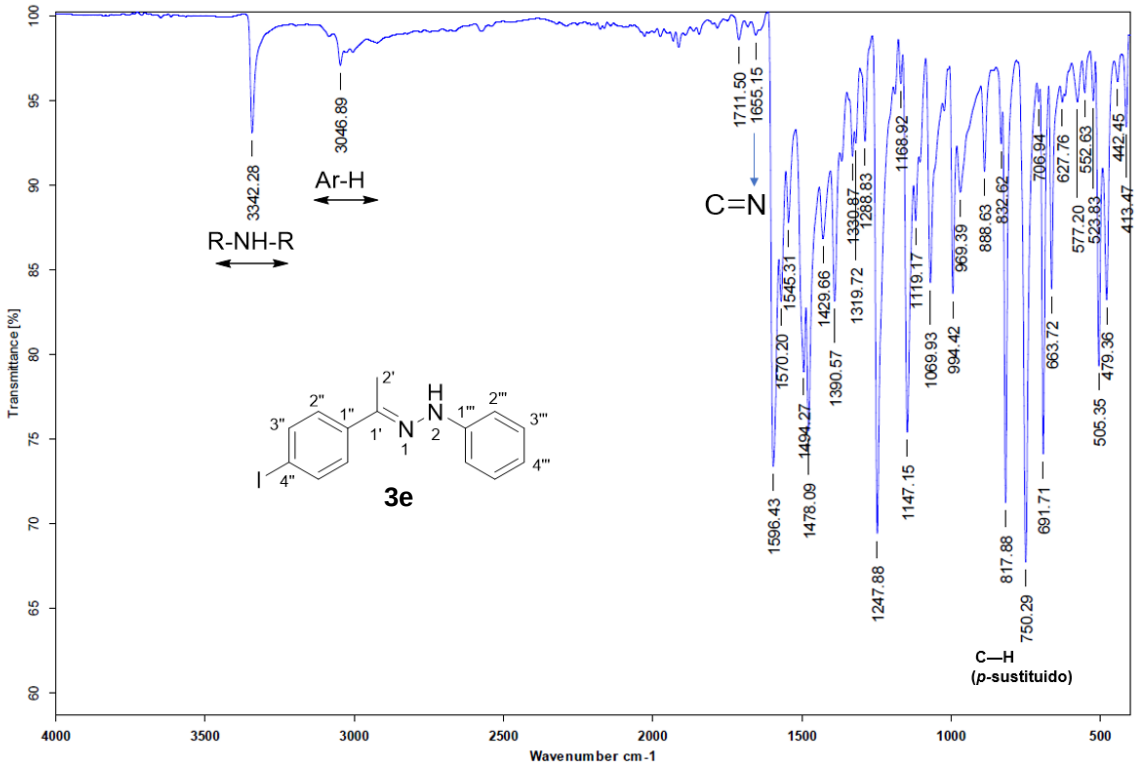


Figure S18. FT-IR of 5 (*E*)-1-(1-(4-iodophenyl)ethylidene)-2-phenylhydrazone **3e**.

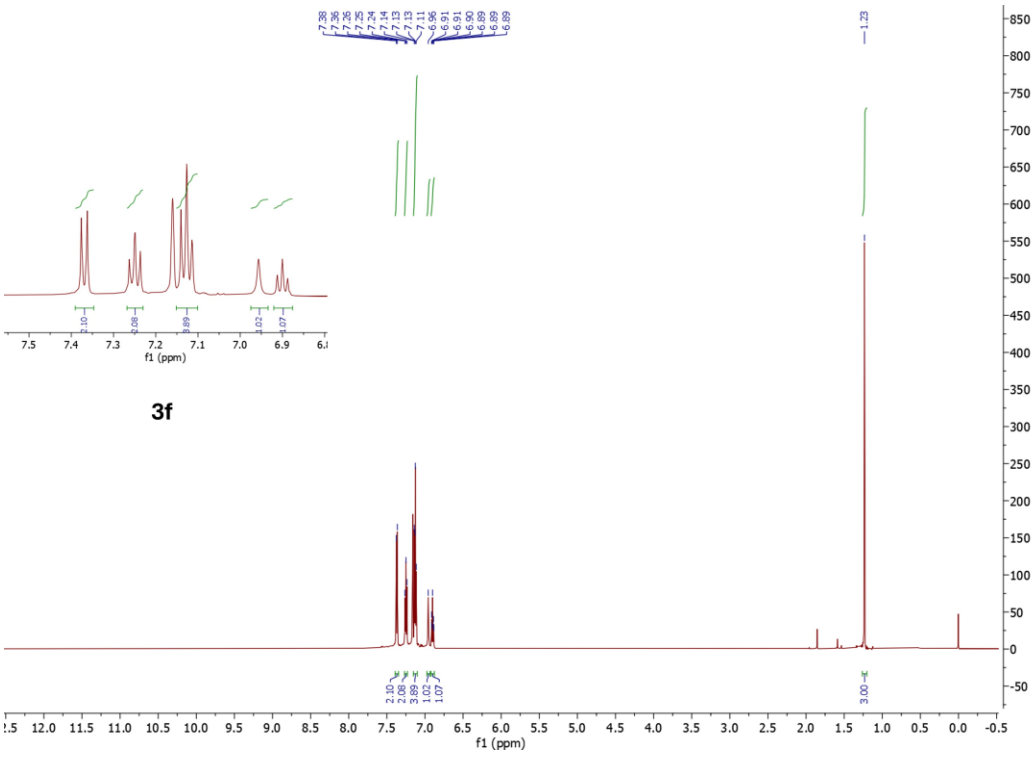


Figure S19. ^{1}H NMR (600 MHz, C_6D_6) of (*E*)-4-(1-(2-phenylhydrazono)ethyl)benzonitrile **3f**.

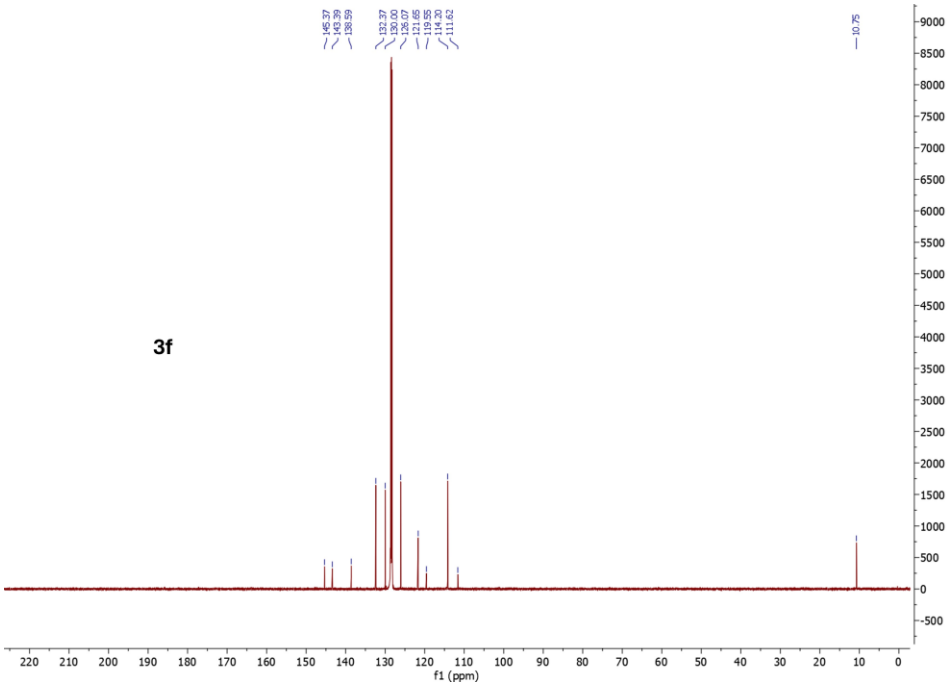
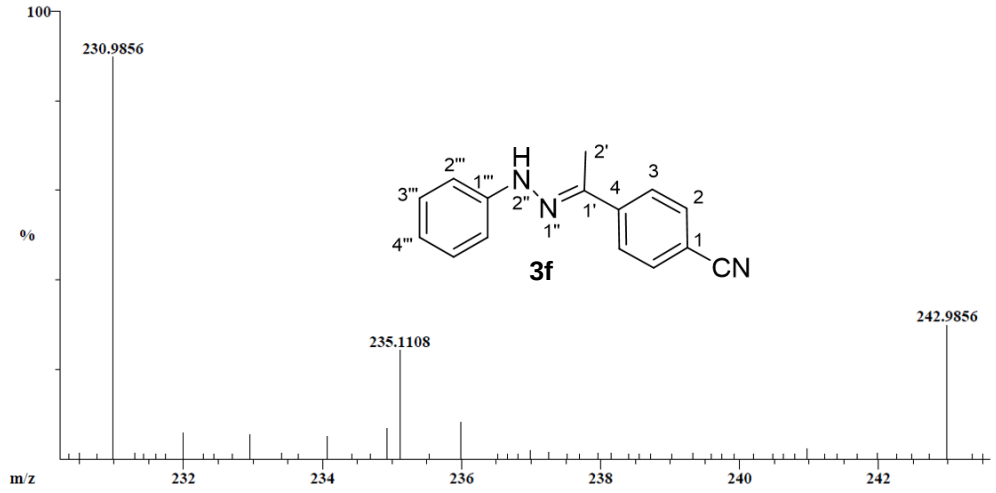


Figure S20. ^{13}C NMR (150 MHz, C_6D_6) of (*E*)-4-(1-(2-phenylhydrazono)ethyl)benzonitrile **3f**.



Selected Isotopes : $H_{0-13}C_{0-15}N_{0-3}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
235.1108	24.3%	$C_{15}H_{13}N_3$	235.1109	-0.6	11.0

Figure S21. HRMS of (*E*)-4-(1-(2-phenylhydrazono)ethyl)benzonitrile **3f**.

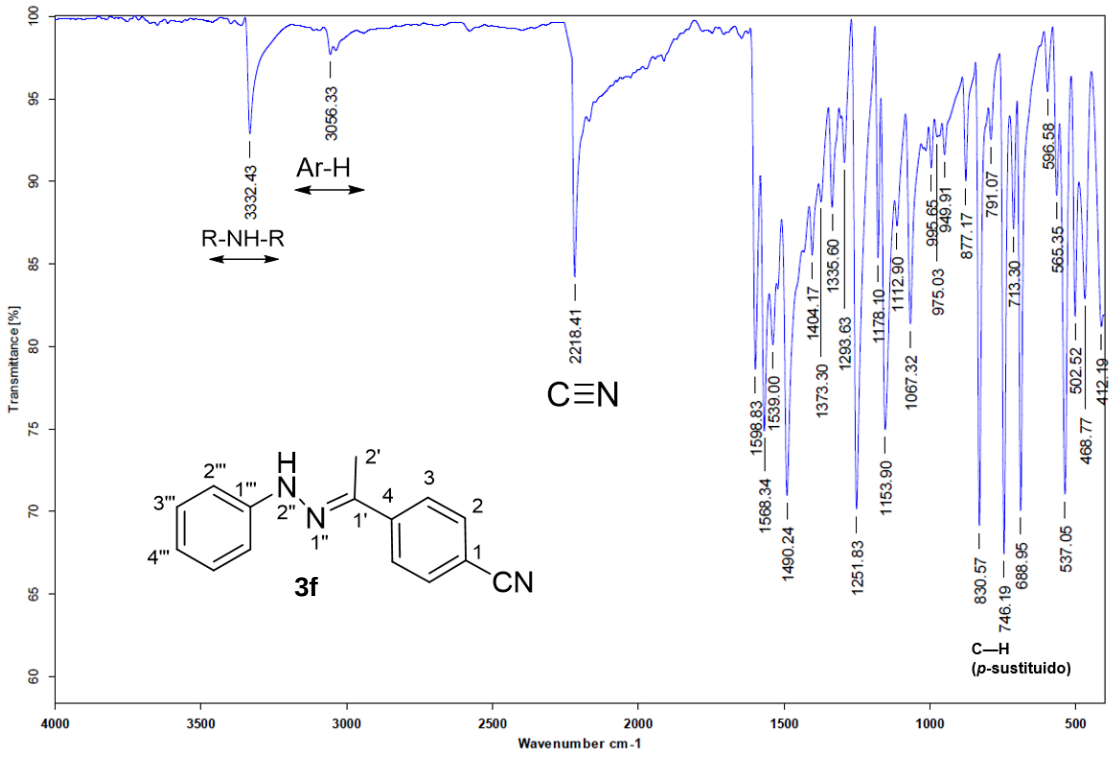


Figure S22. FT-IR of (*E*)-4-(1-(2-phenylhydrazono)ethyl)benzonitrile **3f**.

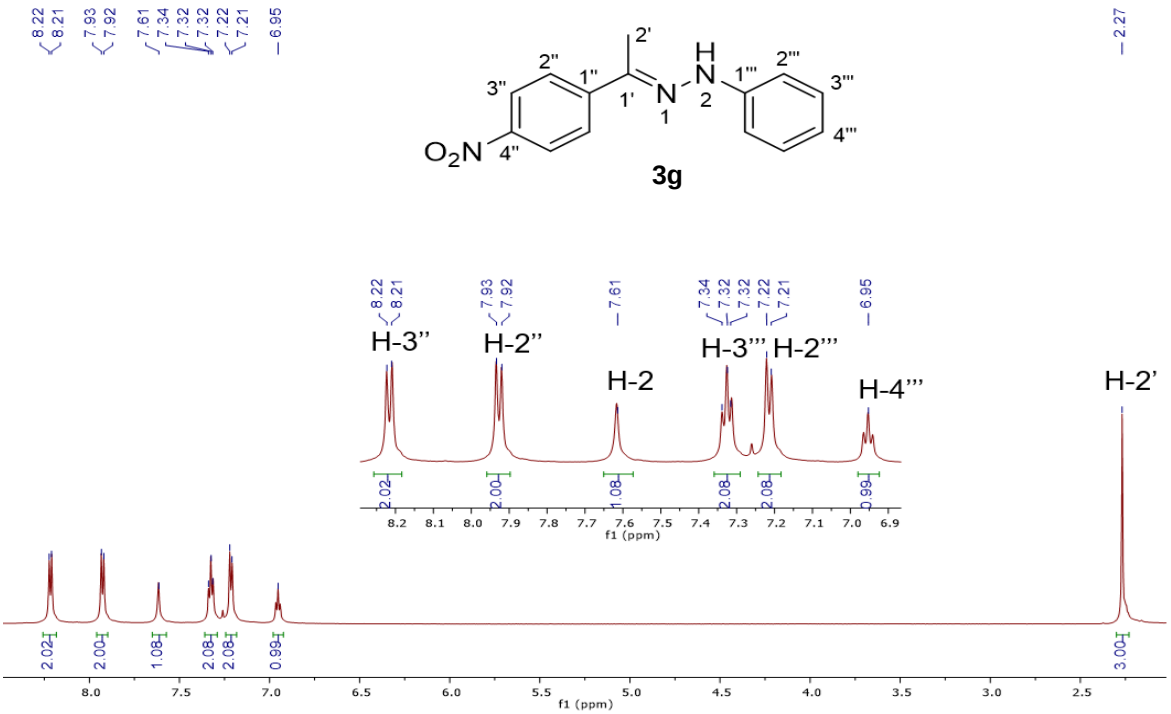


Figure S23. ^{1}H NMR (500 MHz, $CDCl_3$) of (*E*)-1-(1-(4-nitrophenyl)ethylidene)-2-phenylhydrazone **3g**.

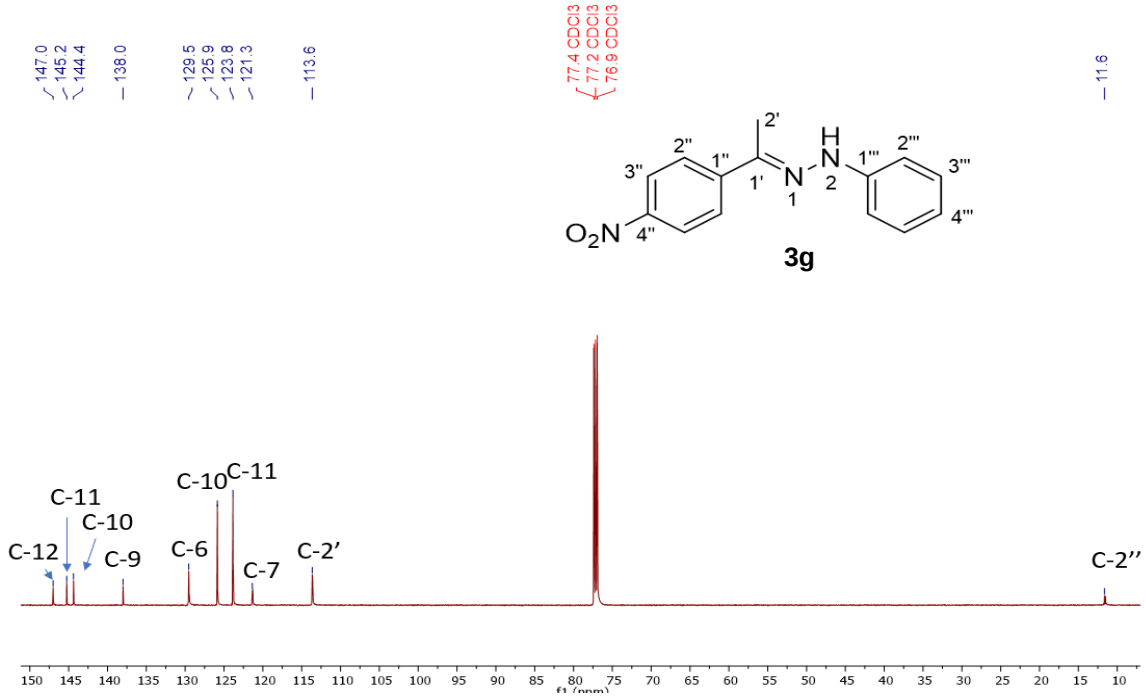


Figure S24. ^{13}C NMR (125 MHz, $CDCl_3$) of (*E*)-1-(1-(4-nitrophenyl)ethylidene)-2-phenylhydrazone **3g**.

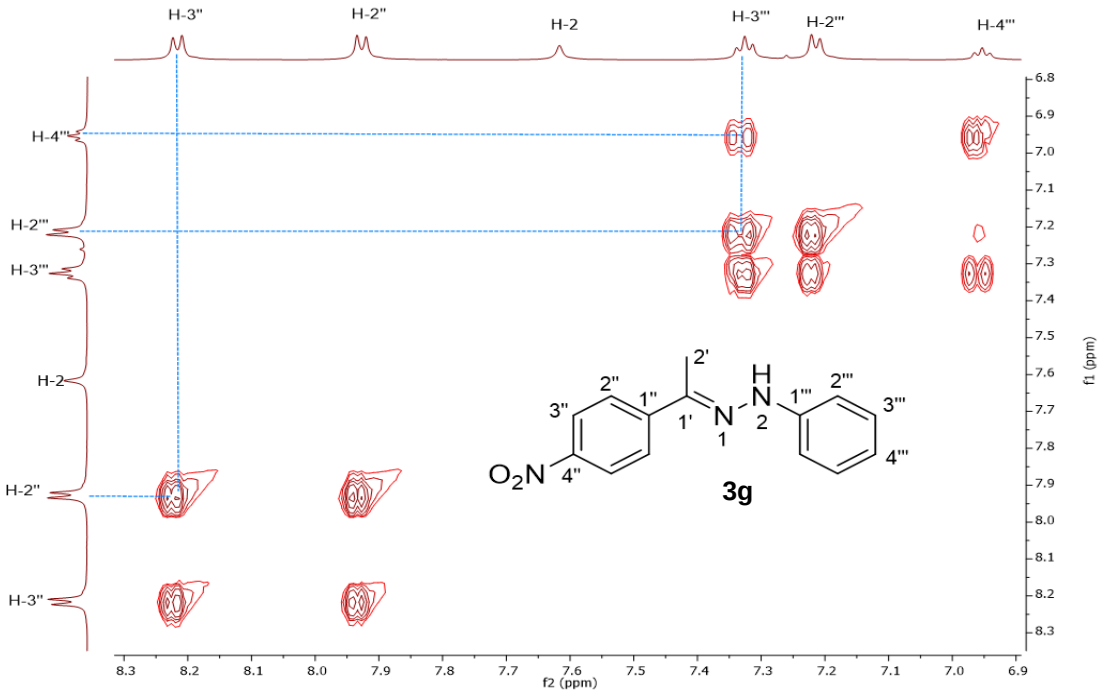
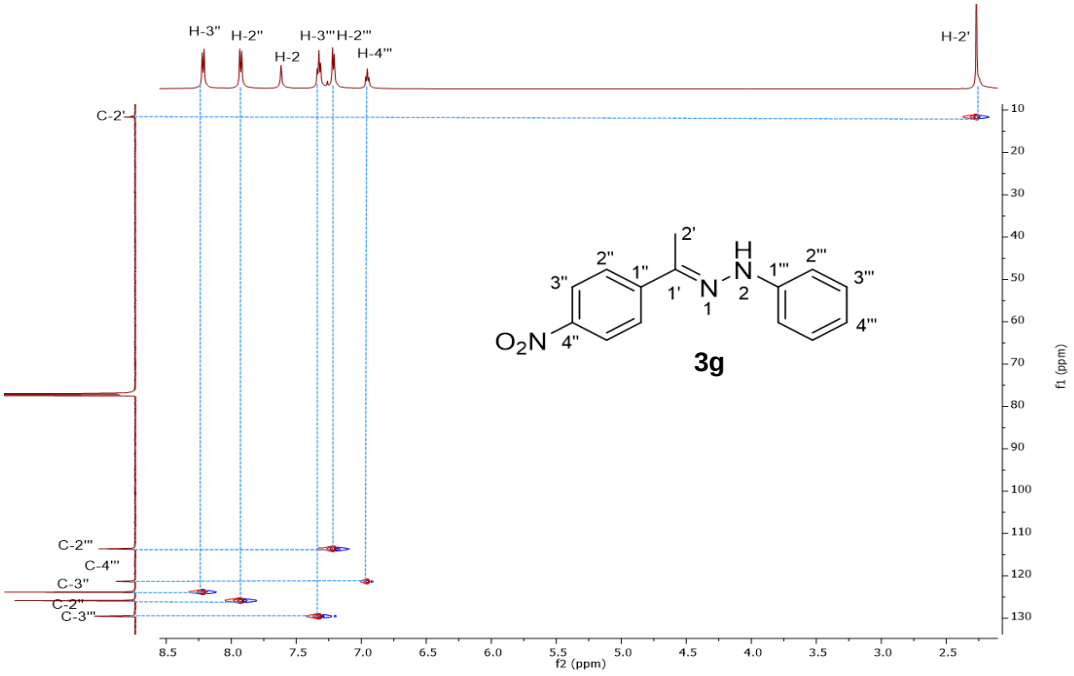


Figure S25. COSY experiment of (*E*)-1-(1-(4-nitrophenyl)ethylidene)-2-phenylhydrazone **3g**.



|**Figure S26**. HSQC experiment of (*E*)-1-(1-(4-nitrophenyl)ethylidene)-2-phenylhydrazone **3g**.

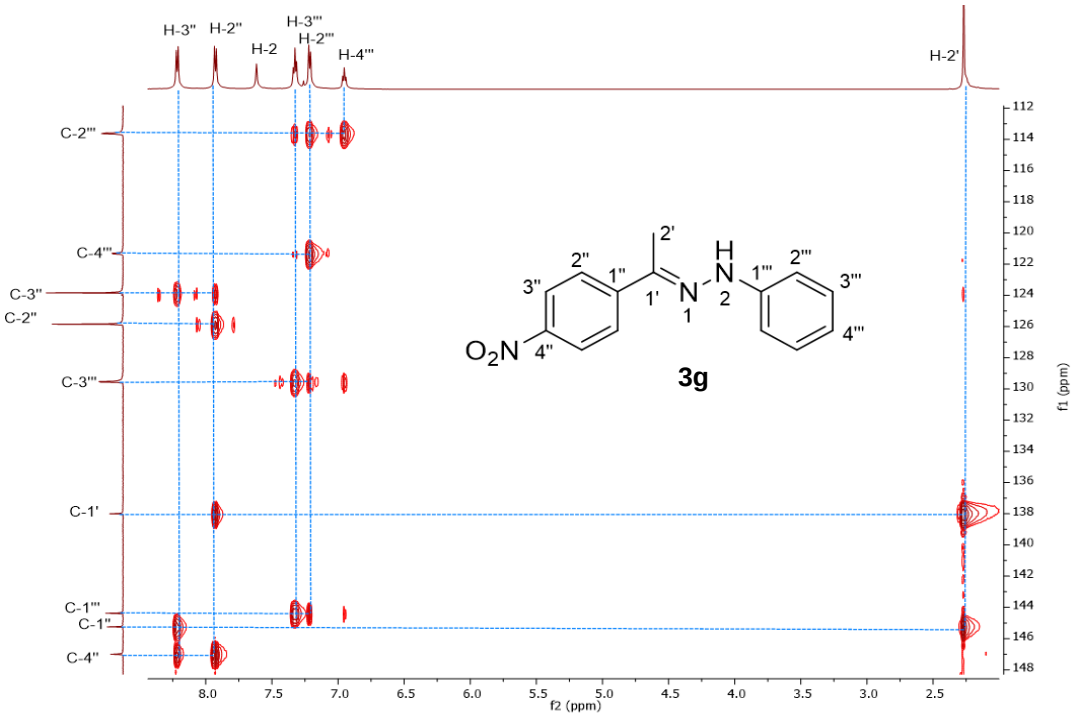
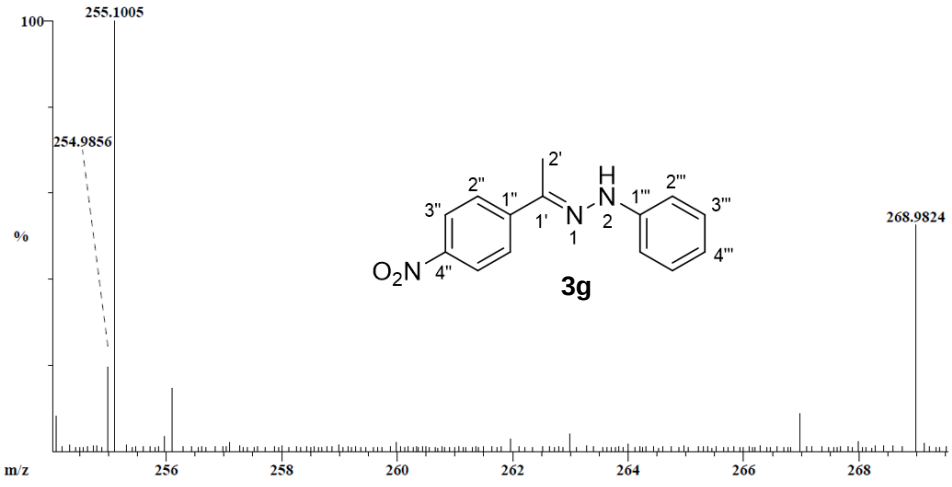


Figure S27. HMBC experiment of (*E*)-1-(1-(4-nitrophenyl)ethylidene)-2-phenylhydrazone **3g**.



Selected Isotopes : $H_{0-13}C_{0-14}N_{0-3}O_{0-2}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
255.1005	100.0%	$C_{14}H_{13}N_3O_2$	255.1008	-1.1	10.0

Figure S28. HRMS of (*E*)-1-(1-(4-nitrophenyl)ethylidene)-2-phenylhydrazone **3g**.

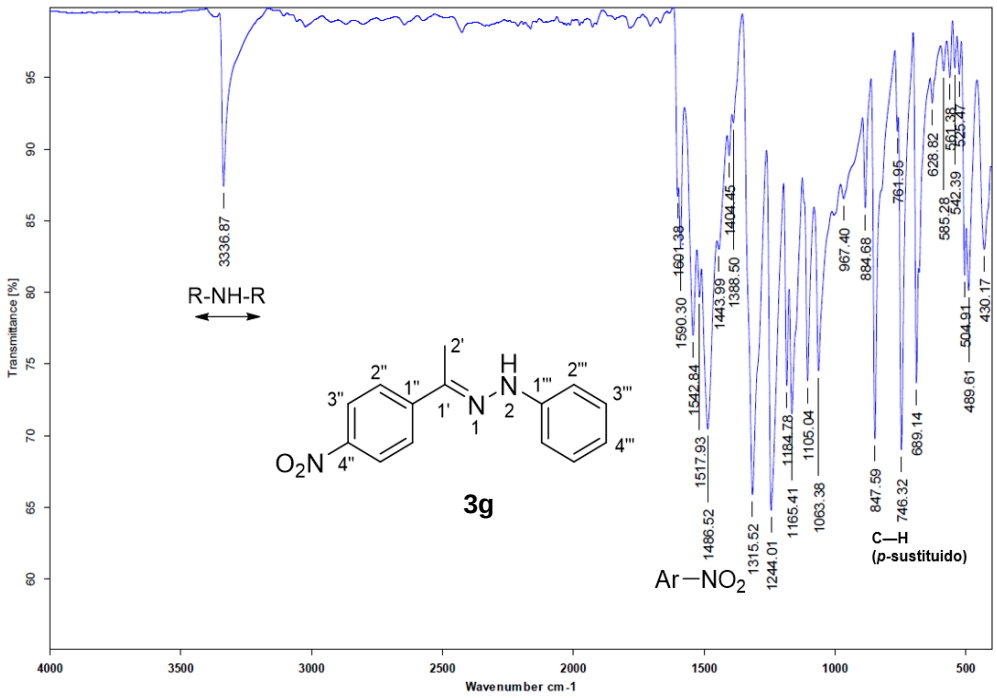


Figure S29. FT-IR of (*E*)-1-(1-(4-nitrophenyl)ethylidene)-2-phenylhydrazone **3g**.

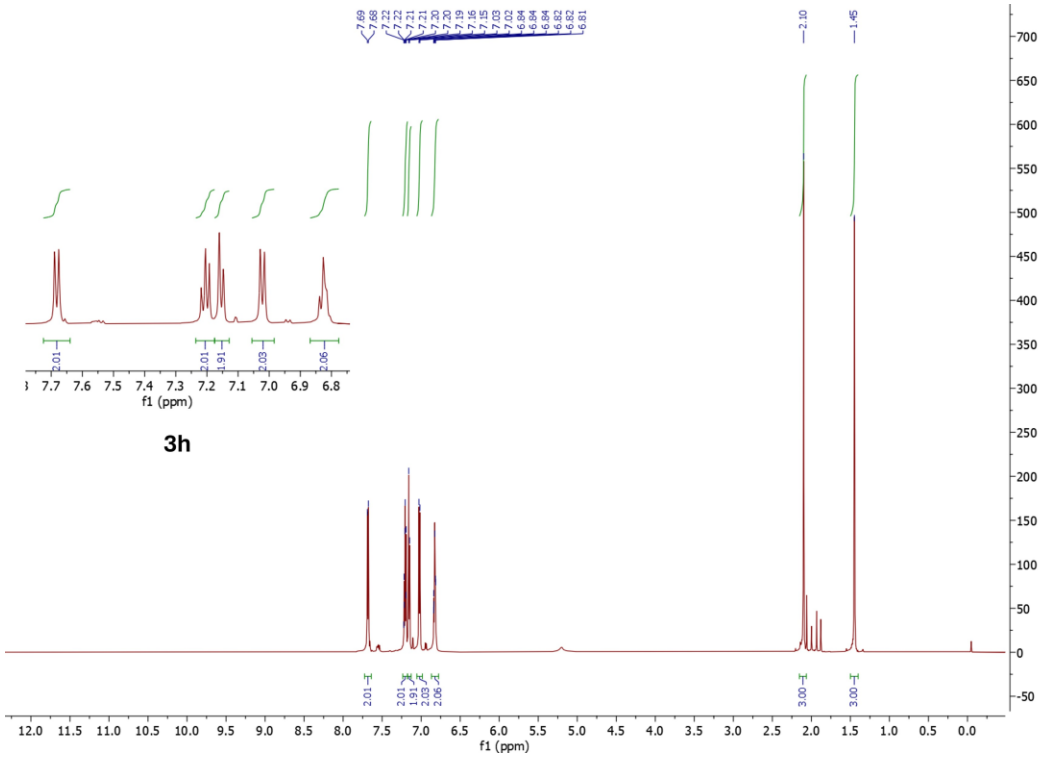


Figure S30. ^{1}H NMR (600 MHz, CD_6) of (*E*)-1-phenyl-2-(1-*p*-tolyl)ethylidene)hydrazone **3h**

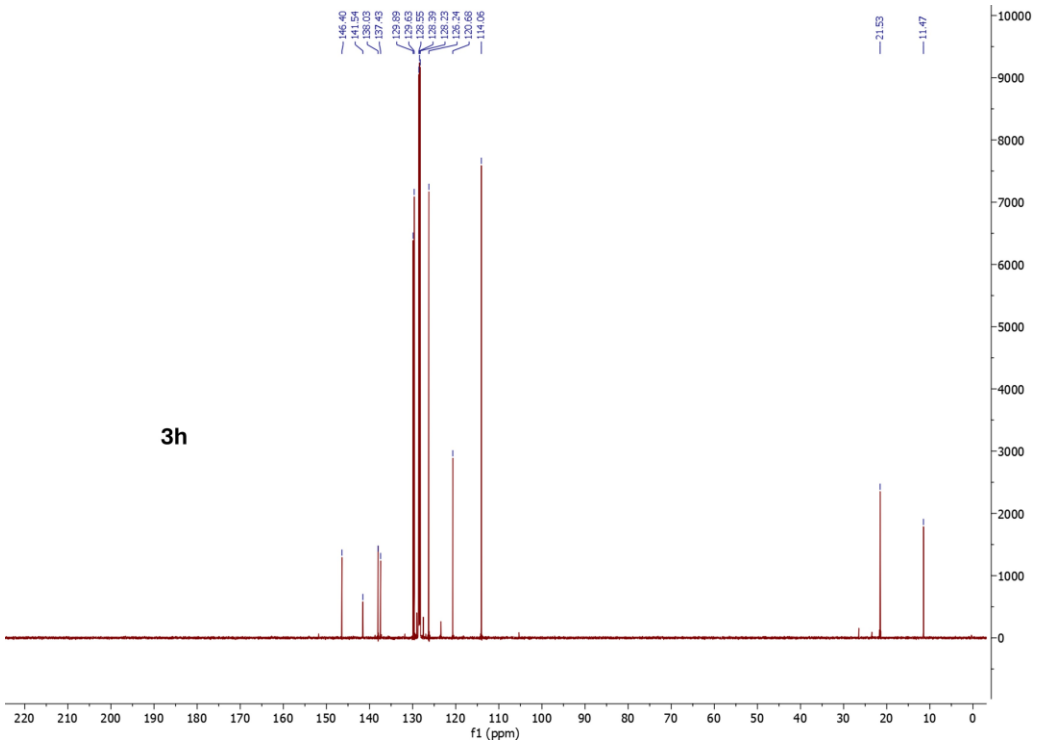
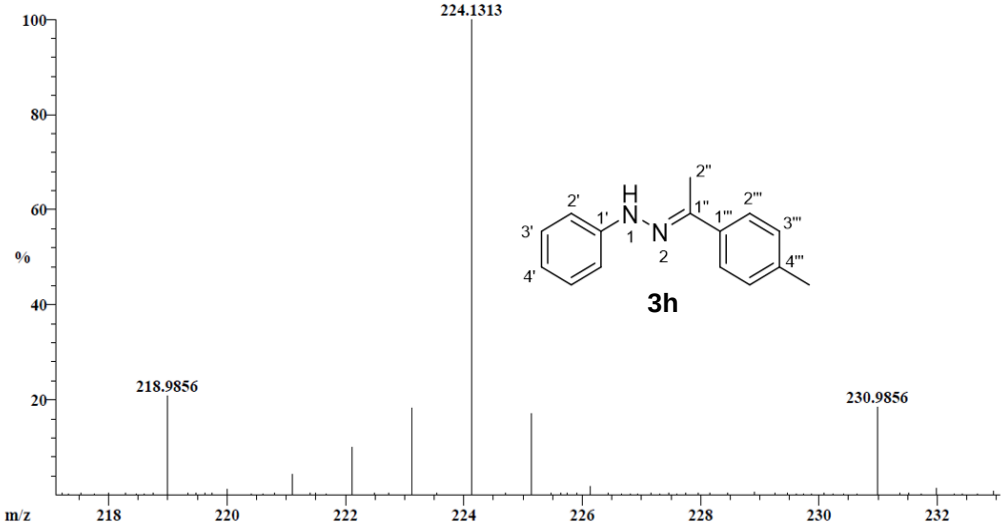


Figure S31. ^{13}C NMR (150 MHz, CD_6) of (*E*)-1-phenyl-2-(1-*p*-tolyl)ethylidene)hydrazone **3h**



Selected Isotopes : $H_{0-16}C_{0-15}N_{0-2}$			Error Limit : 5 ppm		Unsaturation Limits : 0 to 50
Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
224.1313	100.0%	$C_{15}H_{16}N_2$	224.1314	-0.2	9.0

Figure S32. HRMS of (*E*)-1-phenyl-2-(1-*p*-tolyl)ethylidene)hydrazone **3h**.

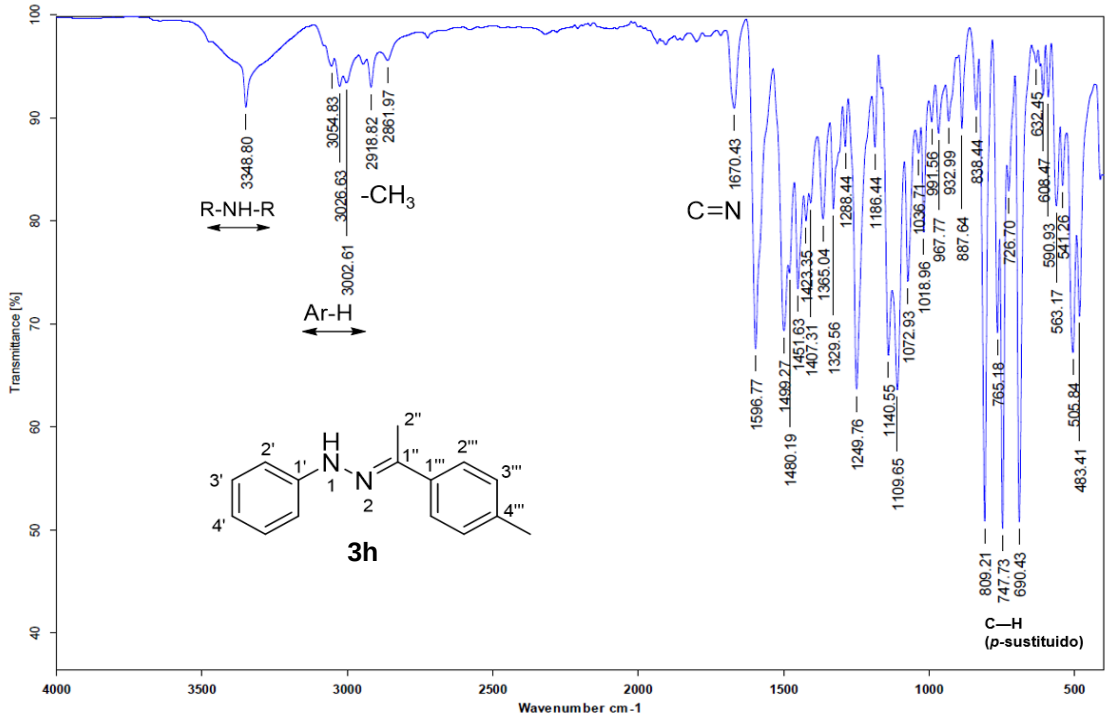


Figure S33. FT-IR of (*E*)-1-phenyl-2-(1-*p*-tolyl)ethylidene)hydrazone **3h**.

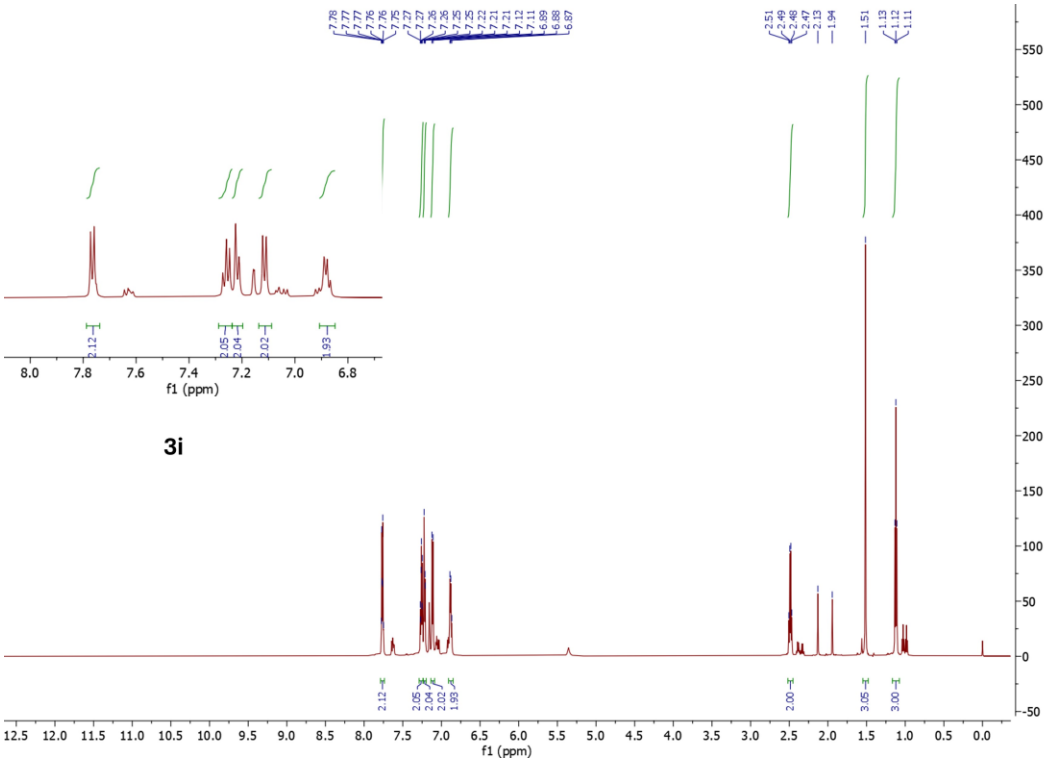


Figure S34. ^{1}H NMR (600 MHz, CD_6) of (*E*)-1-(1-(4-ethylphenyl)ethylidene)-2-phenylhydrazone **3i**.

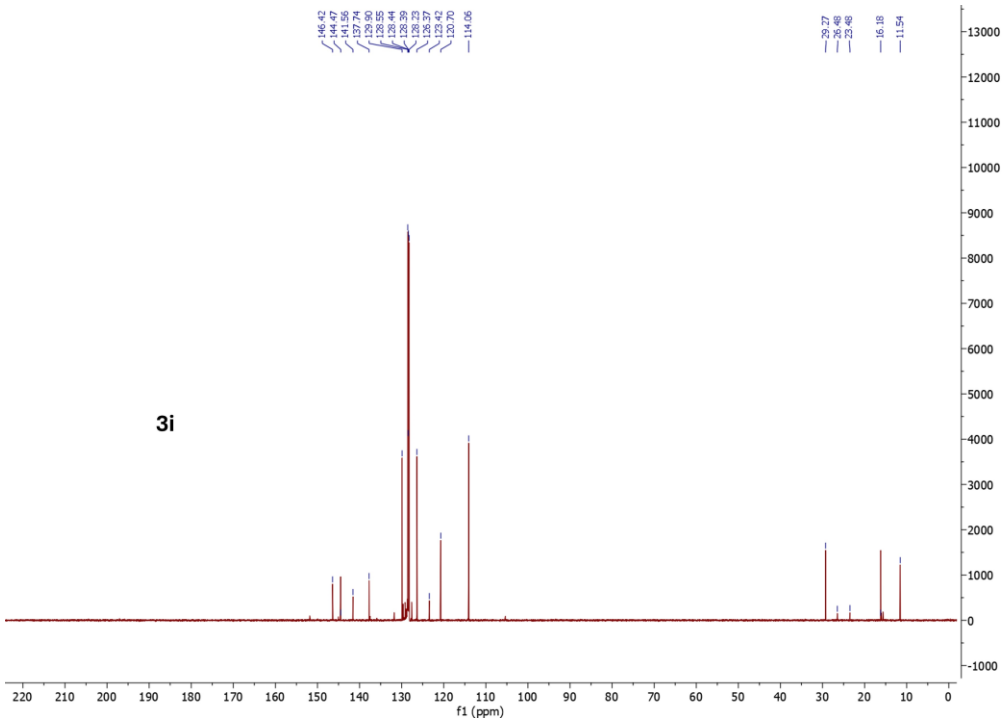


Figure S35. ^{13}C NMR (150 MHz, CD_6) of (*E*)-1-(1-(4-ethylphenyl)ethylidene)-2-phenylhydrazone **3i**.

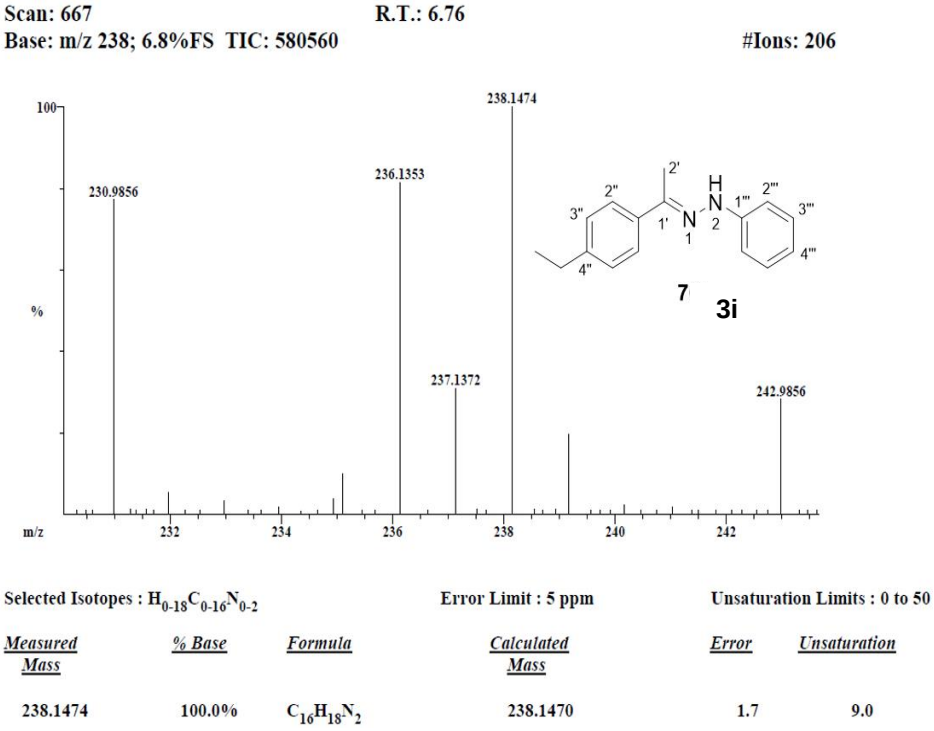


Figure S36. HRMS of (*E*)-1-(1-(4-ethylphenyl)ethylidene)-2-phenylhydrazone **3i**.

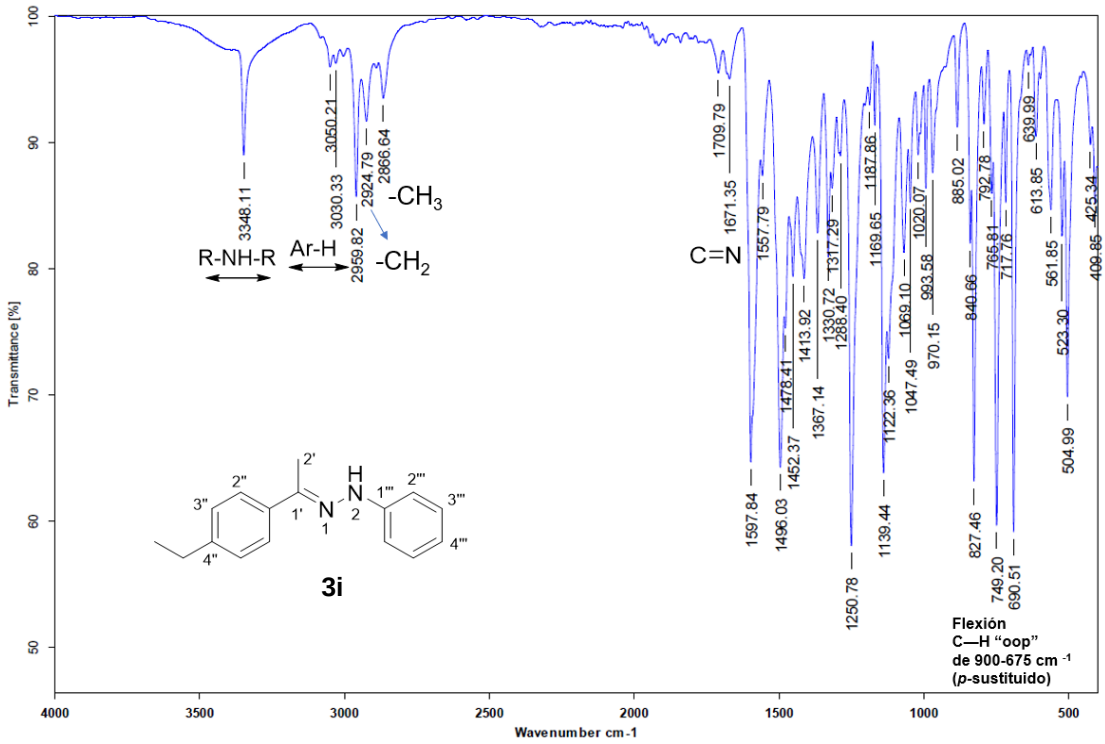


Figure S37. FT-IR of (*E*)-1-(1-(4-ethylphenyl)ethylidene)-2-phenylhydrazone **3i**.

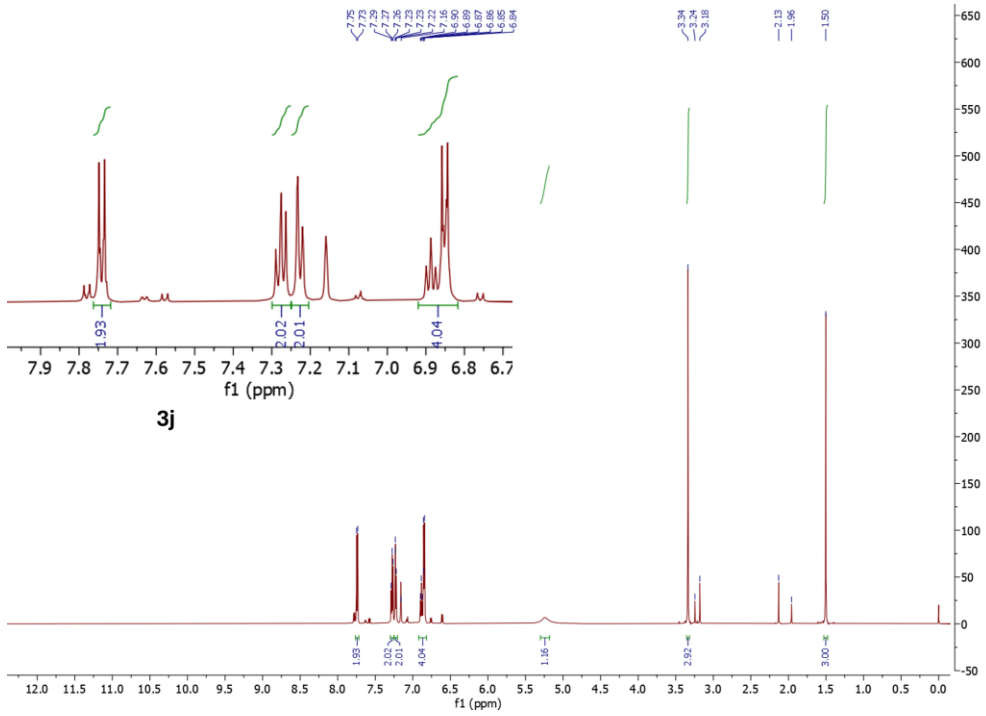


Figure S38. ^{1}H NMR (600 MHz, CD_6) of (*E*)-1-(1-(4-methoxyphenyl)ethylidene)-2-phenylhydrazone **3j**.

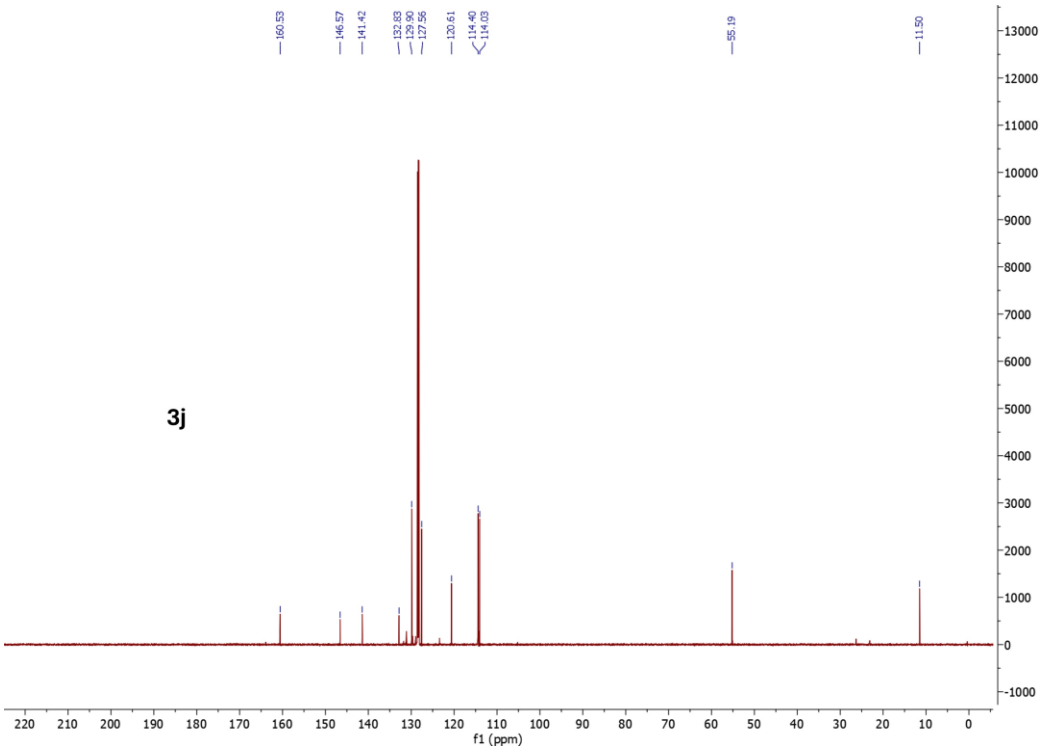
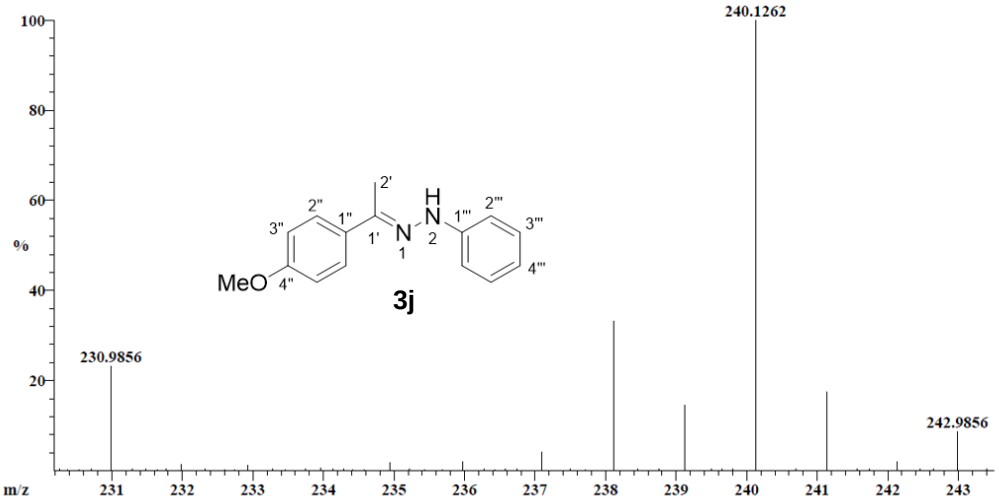


Figure S39. ^{13}C NMR (150 MHz, CD_6) of (*E*)-1-(1-(4-methoxyphenyl)ethylidene)-2-phenylhydrazone **3j**.



Selected Isotopes : $H_{0-16}C_{0-15}N_{0-2}O_{0-1}$			Error Limit : 5 ppm	Unsaturation Limits : 0 to 50	
Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
240.1262	100.0%	$C_{15}H_{16}N_2O$	240.1263	-0.3	9.0

Figure S40. HRMS of (*E*)-1-(1-(4-methoxyphenyl)ethylidene)-2-phenylhydrazone **3j**.

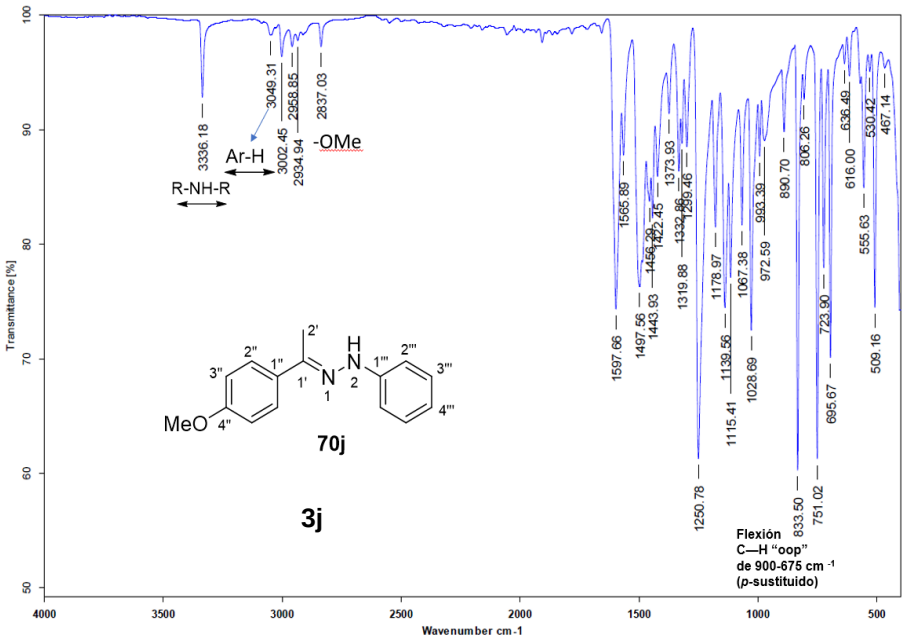


Figure S41. FT-IR of (*E*)-1-(1-(4-methoxyphenyl)ethylidene)-2-phenylhydrazone **3j**.

Characterization of series **4a-j**

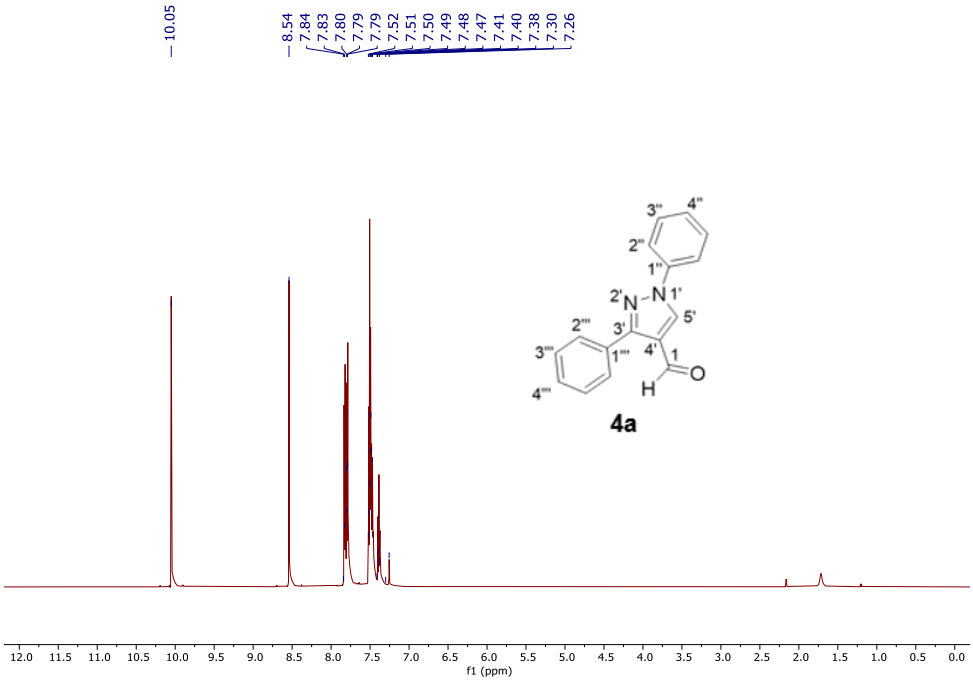


Figure S42. ^{1}H NMR (500 MHz, $CDCl_3$) of 1,3-diphenyl-1*H*-pyrazole-4-carbaldehyde **4a**.

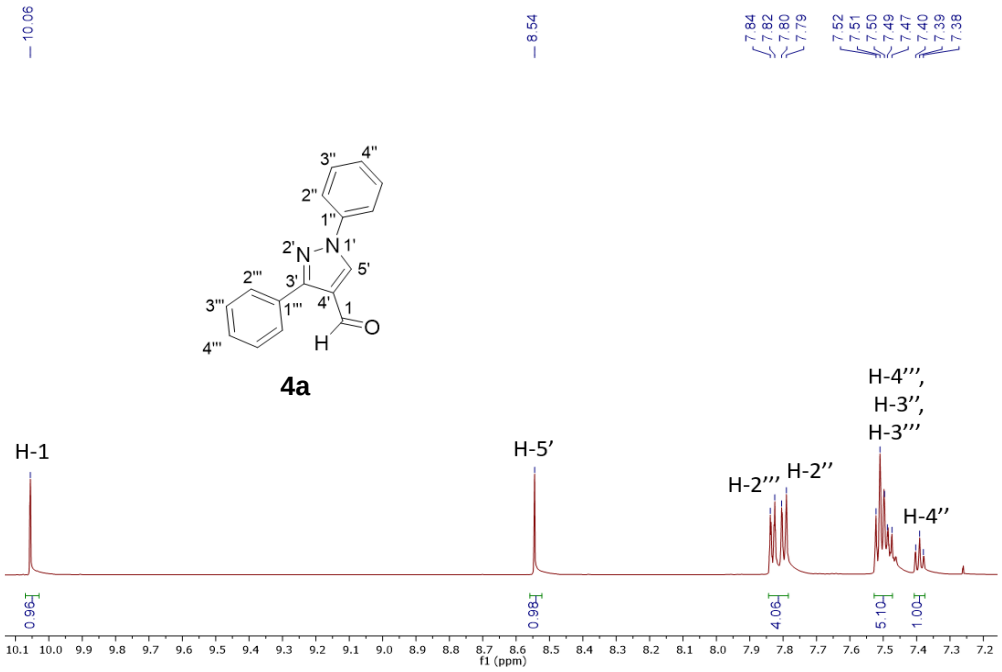


Figure S43. Expansion of ^{1}H NMR (500 MHz, $CDCl_3$) of 1,3-diphenyl-1*H*-pyrazole-4-carbaldehyde **4a**.

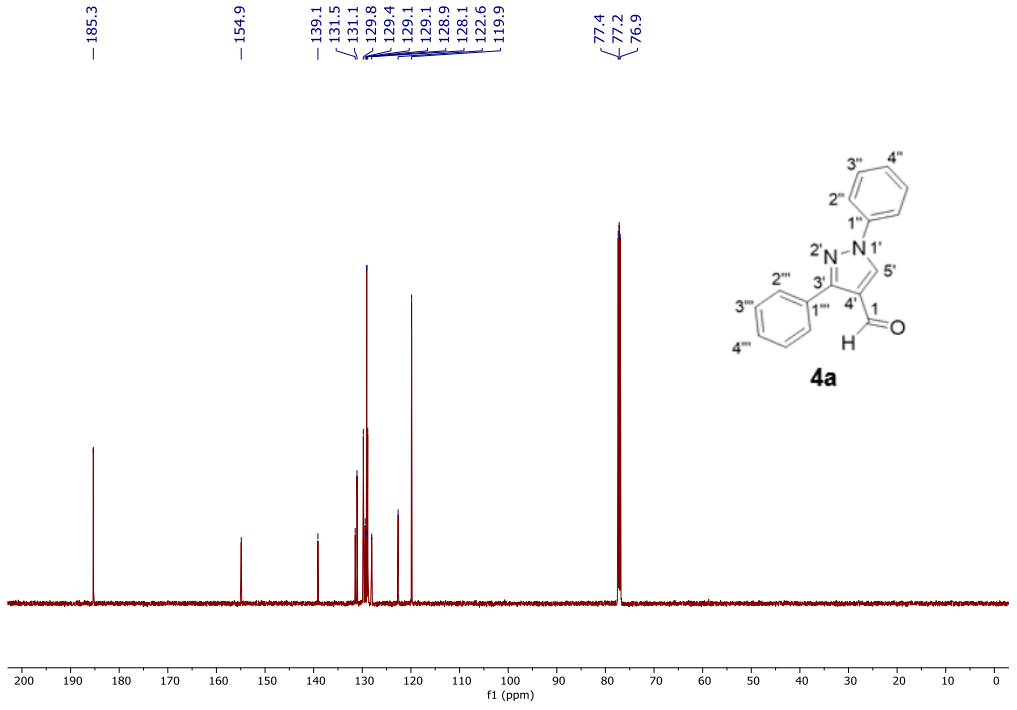


Figure S44. ^{13}C NMR (125 MHz, $CDCl_3$) of 1,3-diphenyl-1*H*-pyrazole-4-carbaldehyde **4a**.

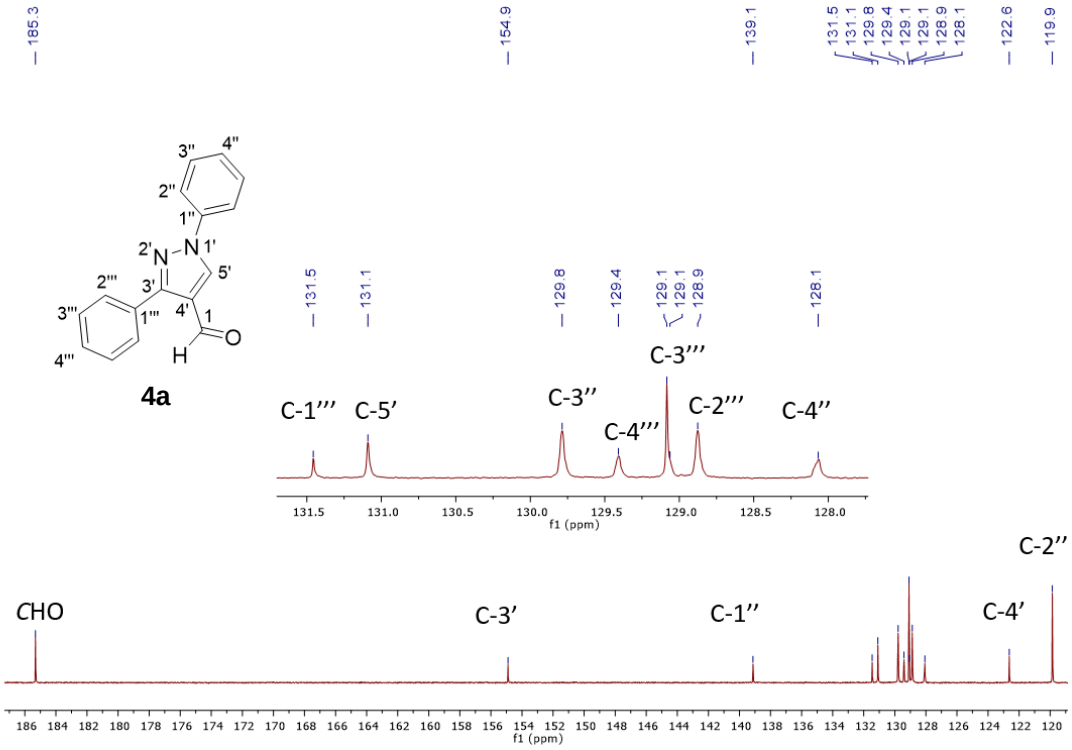


Figure S45. Expansion of ^{13}C NMR (125 MHz, $CDCl_3$) of 1,3-diphenyl-1*H*-pyrazole-4-carbaldehyde **4a**.

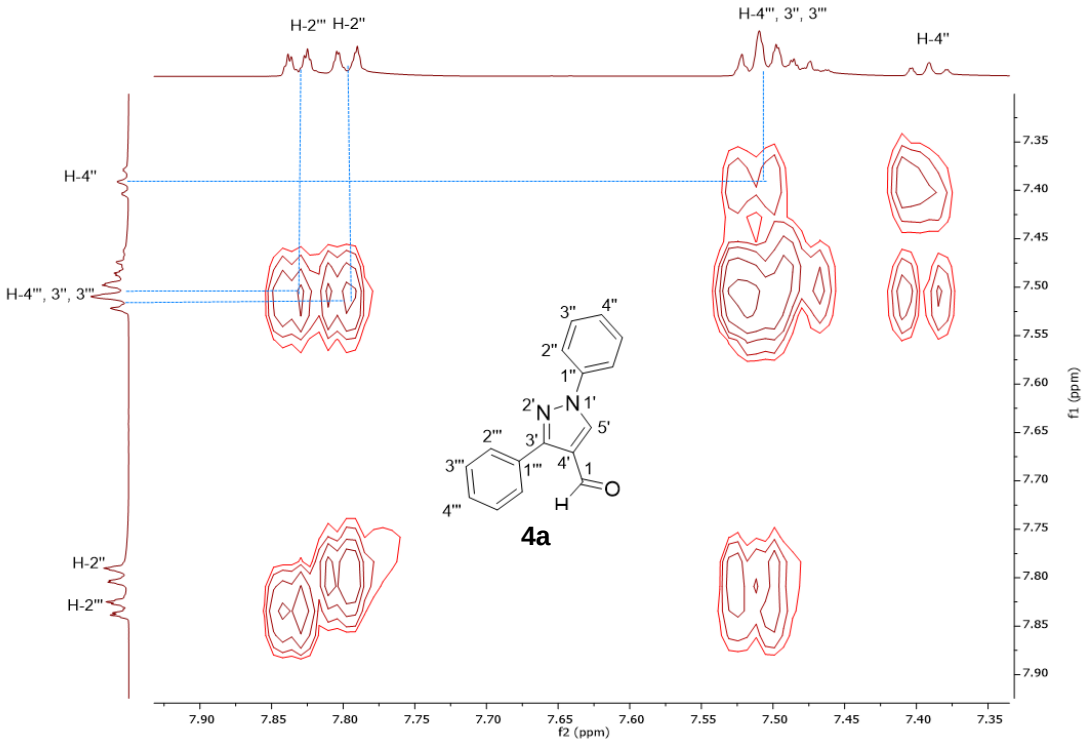


Figure S46. COSY experiment of 1,3-diphenyl-1*H*-pyrazole-4-carbaldehyde **4a**.

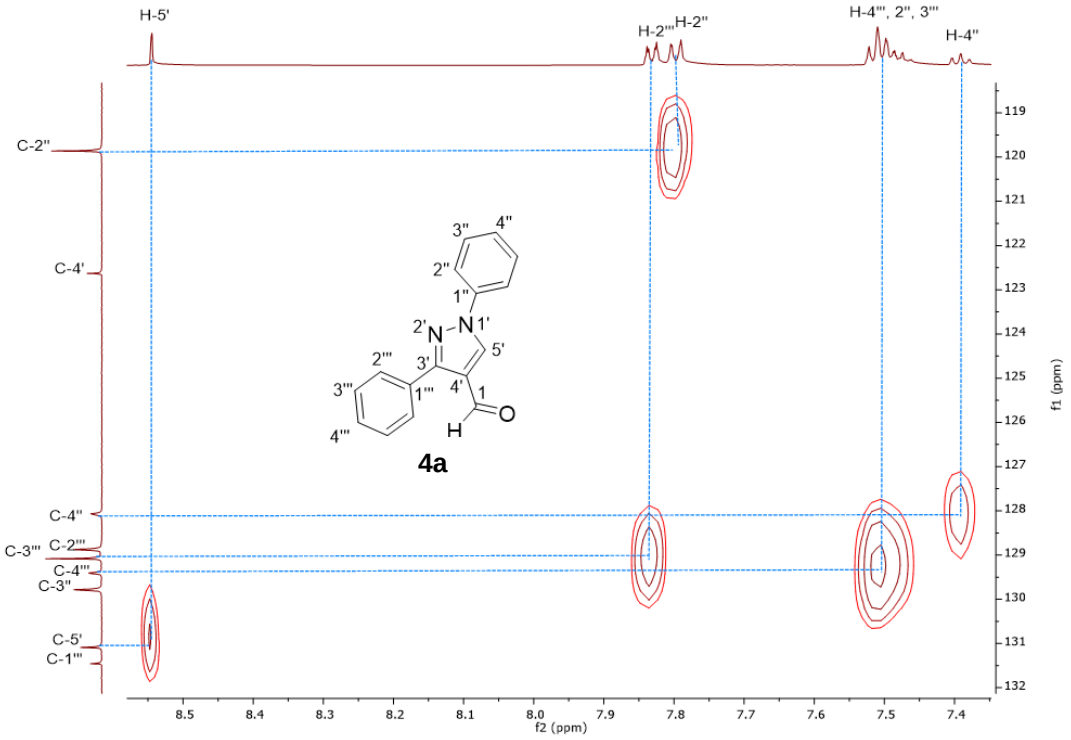


Figure S47. HSQC experiment of 1,3-diphenyl-1*H*-pyrazole-4-carbaldehyde **4a**.

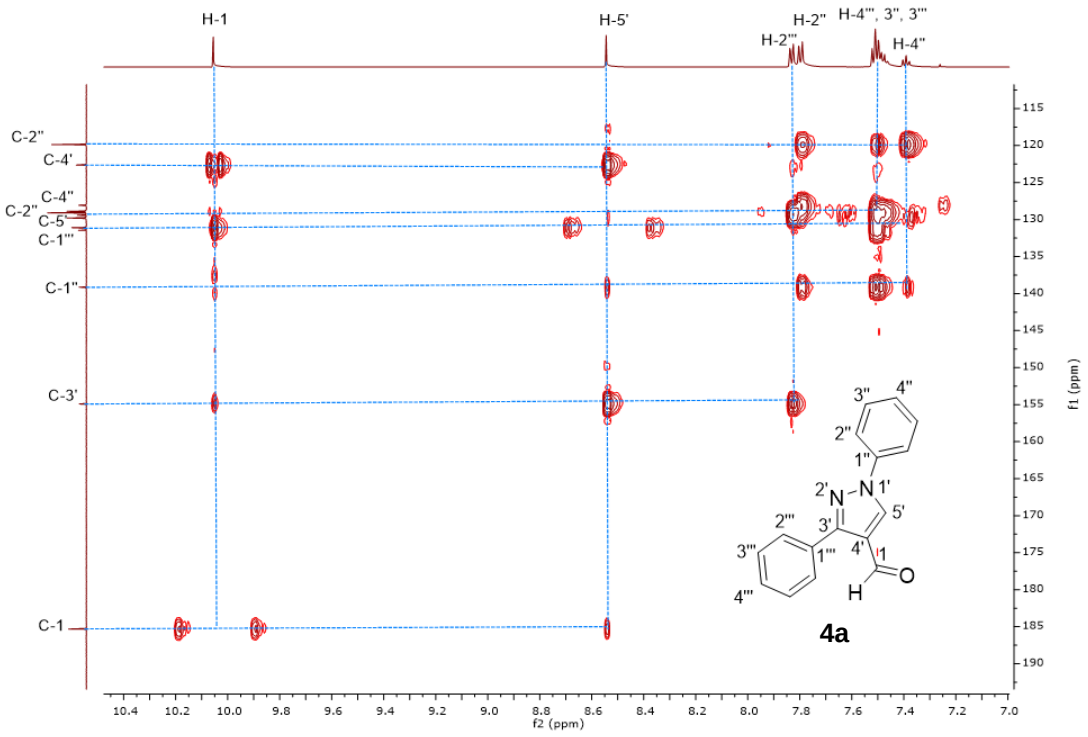
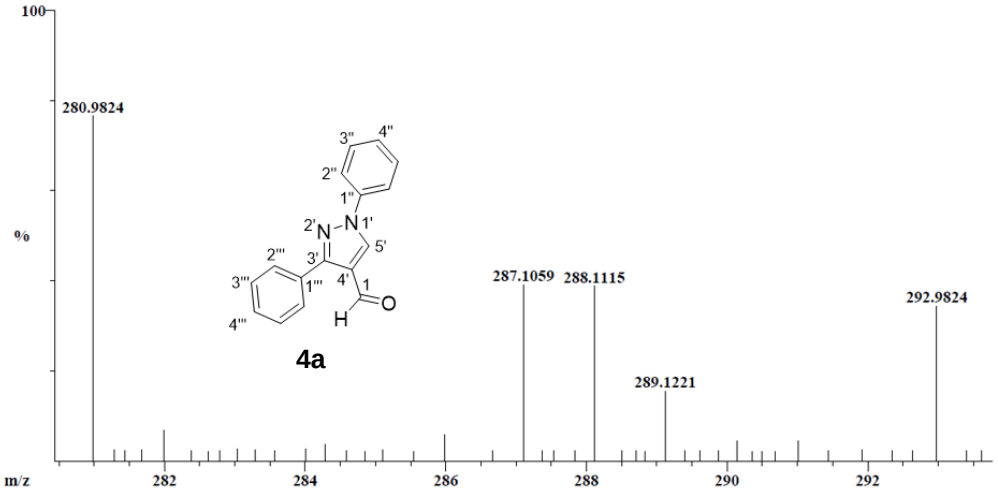


Figure S48. HMBC experiment of 1,3-diphenyl-1*H*-pyrazole-4-carbaldehyde **4a**.



Selected Isotopes : $C_{0-18}N_{0-3}O_{0-1}H_{0-13}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
287.1059	39.1%	$C_{18}H_{13}N_3O$	287.1059	0.1	14.0

Figure S49. HRMS of 1,3-diphenyl-1*H*-pyrazole-4-carbaldehyde **4a**.

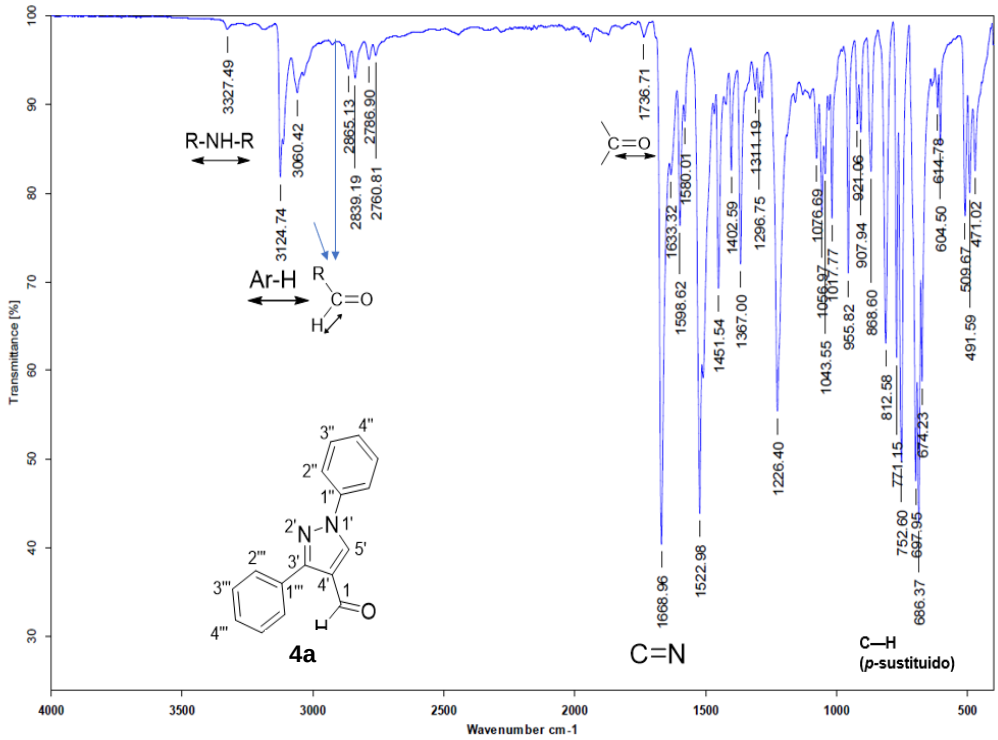


Figure S50. FT-IR of 1,3-diphenyl-1*H*-pyrazole-4-carbaldehyde **4a**.

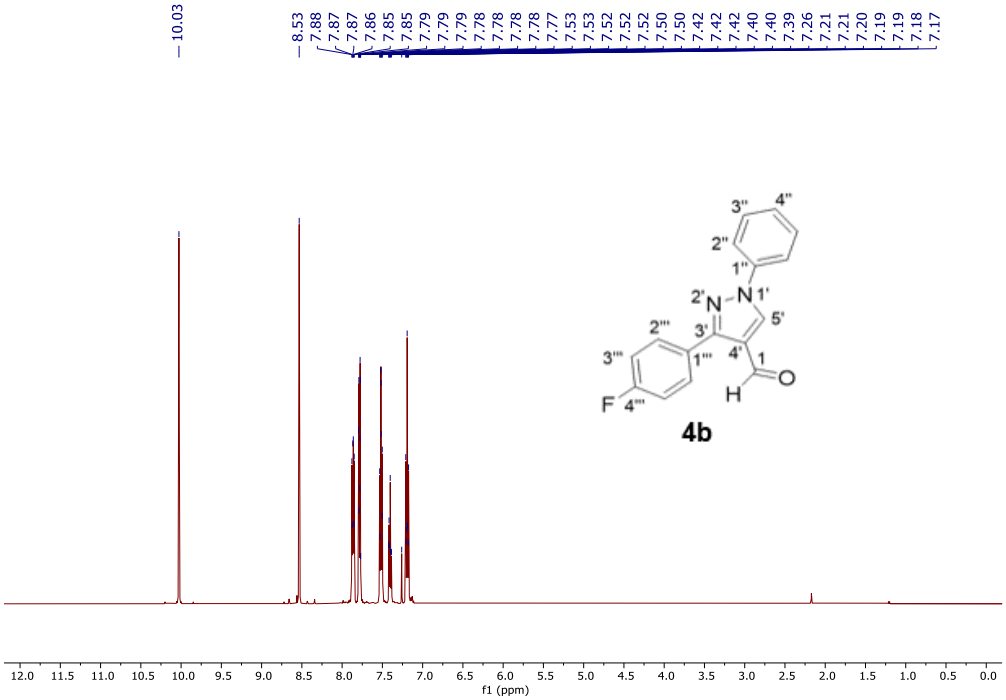


Figure S51. ^{1}H NMR (500 MHz, $CDCl_3$) of 3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4b**.

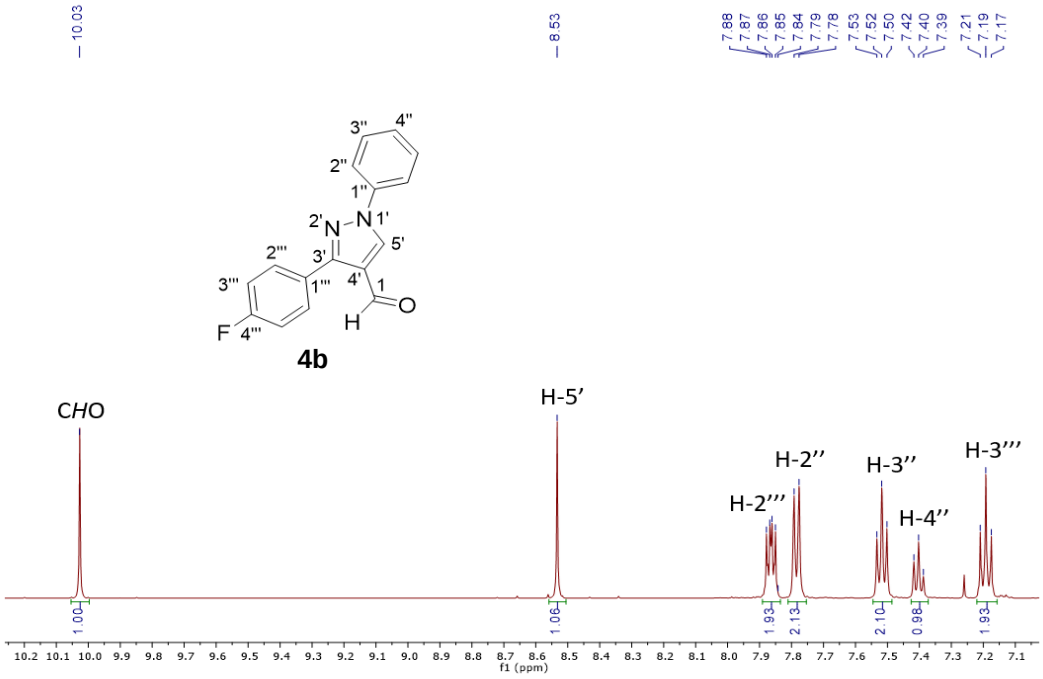


Figure S52. Expansion of ^{1}H NMR (500 MHz, $CDCl_3$) of 3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4b**.

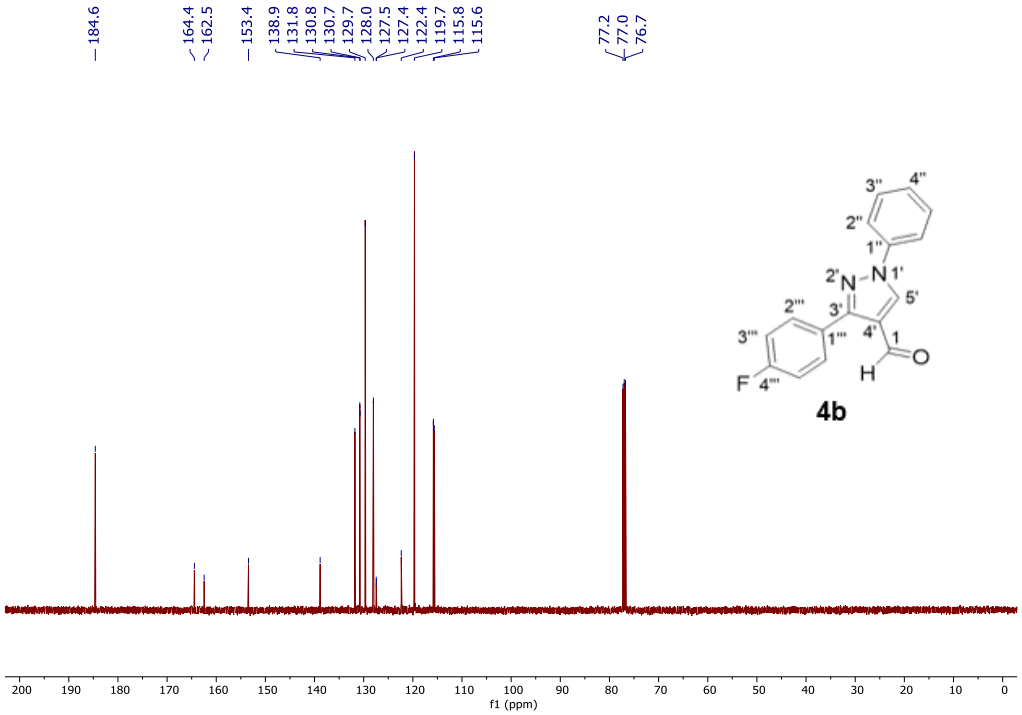


Figure S53. ^{13}C NMR (125 MHz, $CDCl_3$) of 3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4b**.

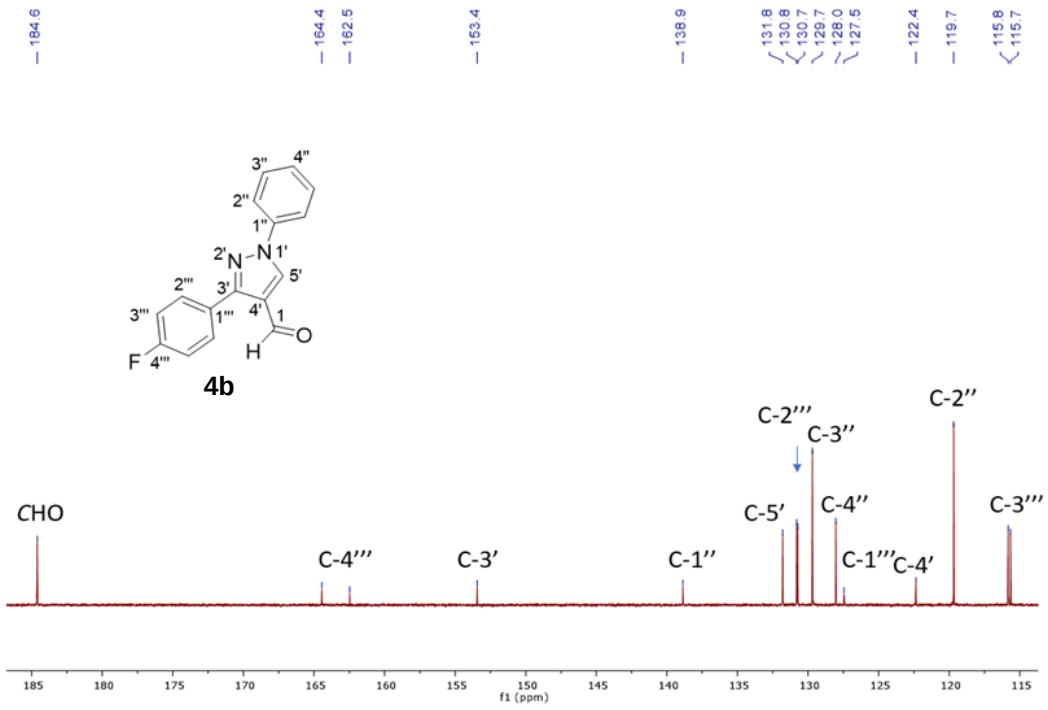


Figure S54. Expansion of ^{13}C NMR (125 MHz, $CDCl_3$) of 3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4b**.

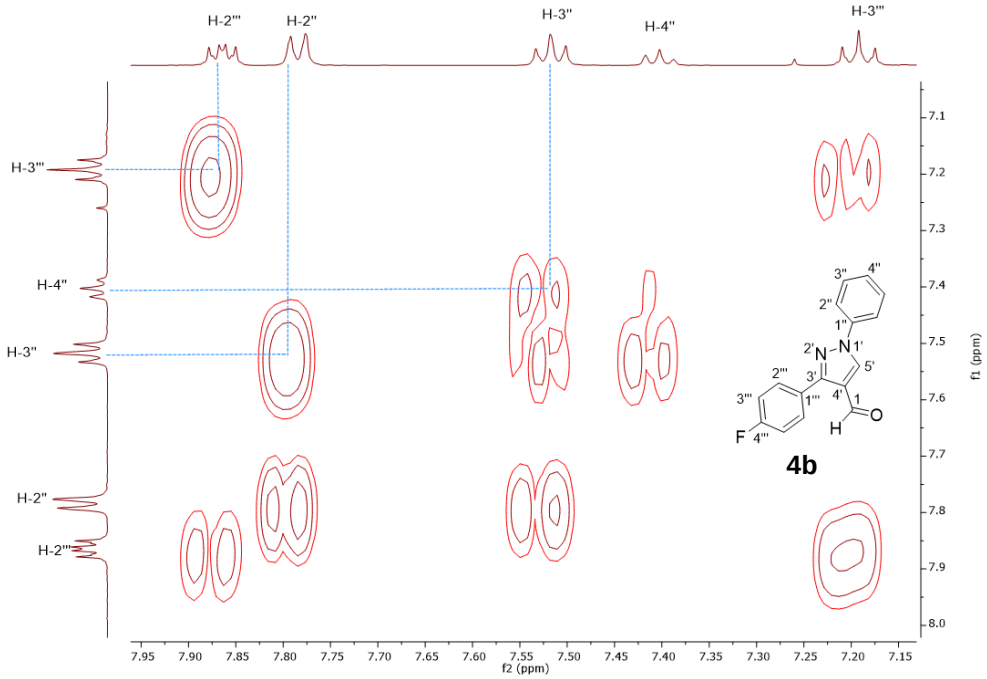


Figure S55. COSY experiment of 3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4b**.

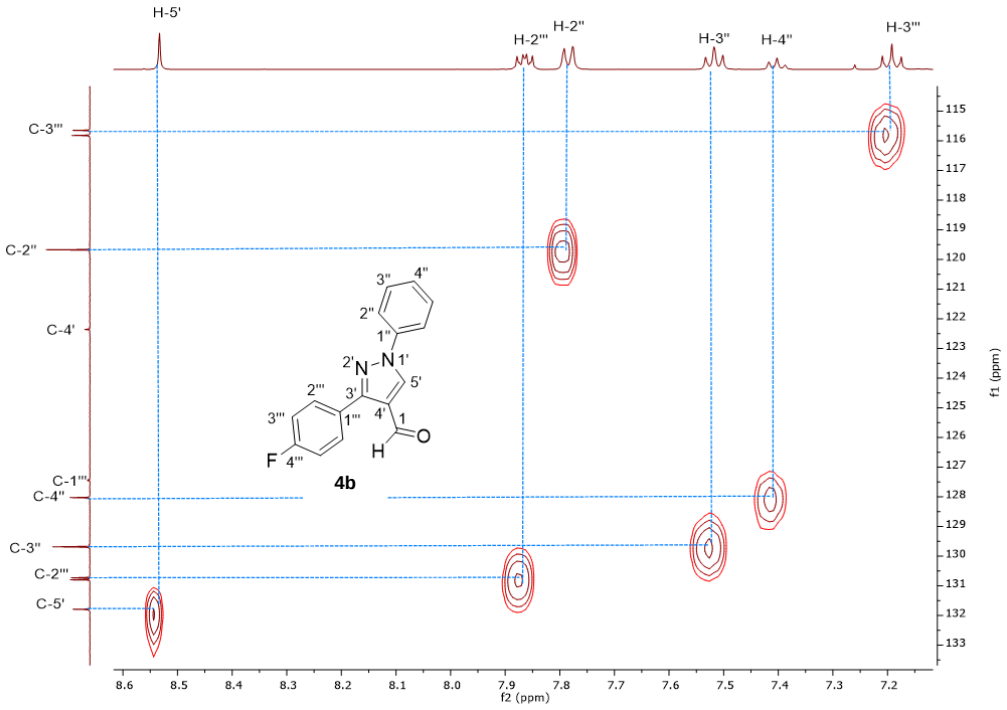


Figure S56. Expansion of HSQC experiment of 3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4b**.

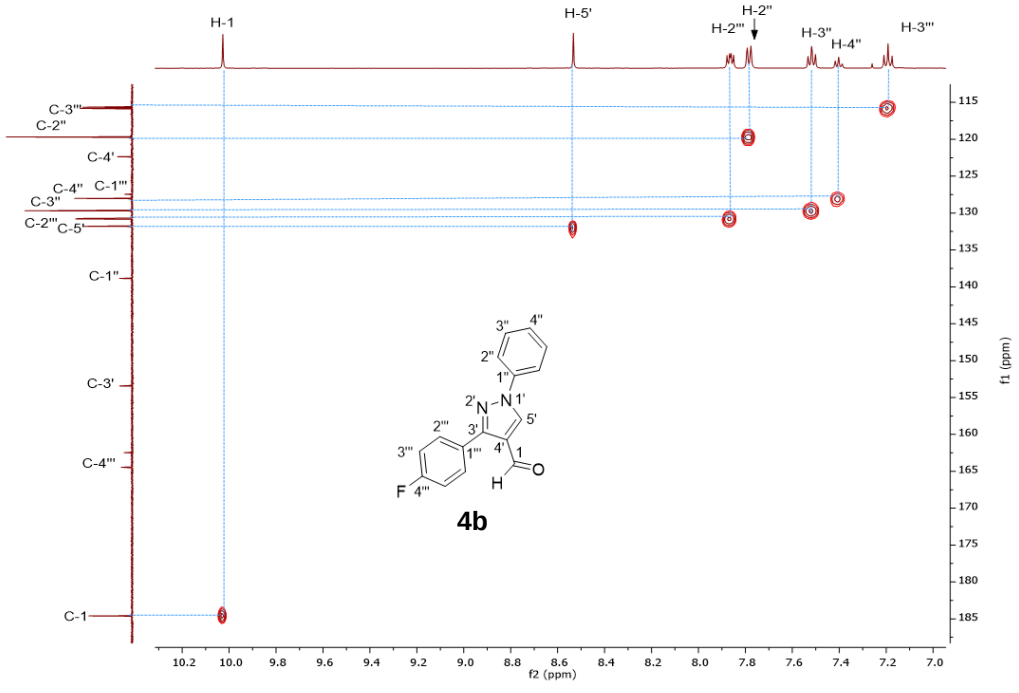


Figure S57. HSQC experiment of 3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4b**.

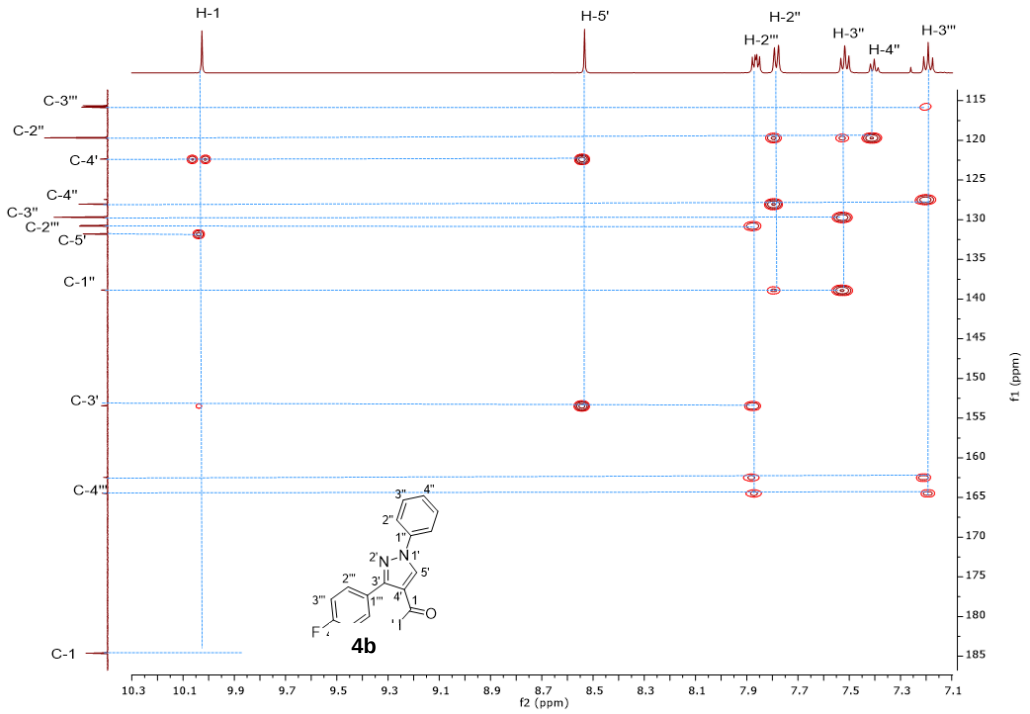
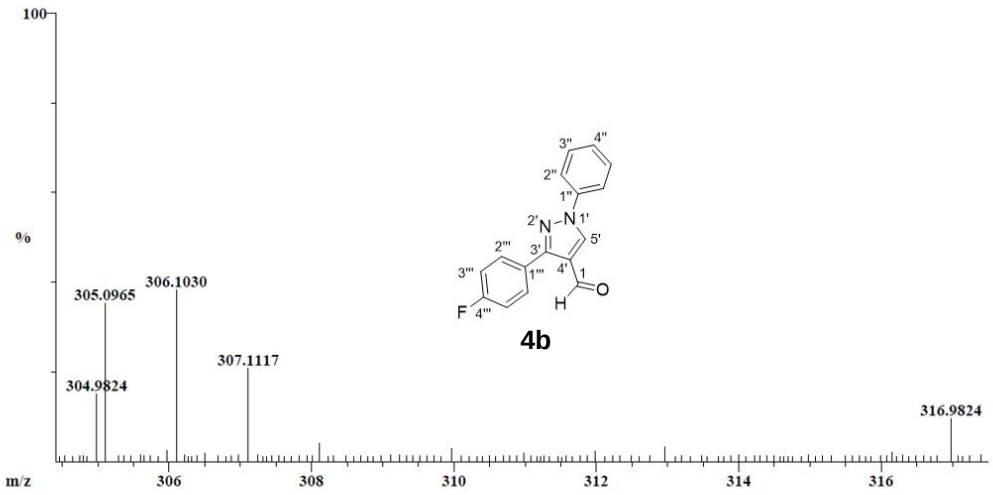


Figure S58. HMBC experiment of 3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4b**.



Selected Isotopes : $H_{0-12}C_{0-18}N_{0-3}O_{0-1}F_{0-1}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
305.0965	35.3%	$C_{18}H_{12}N_3OF$	305.0964	0.2	14.0

Figure S59. HRMS of 3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4b**.

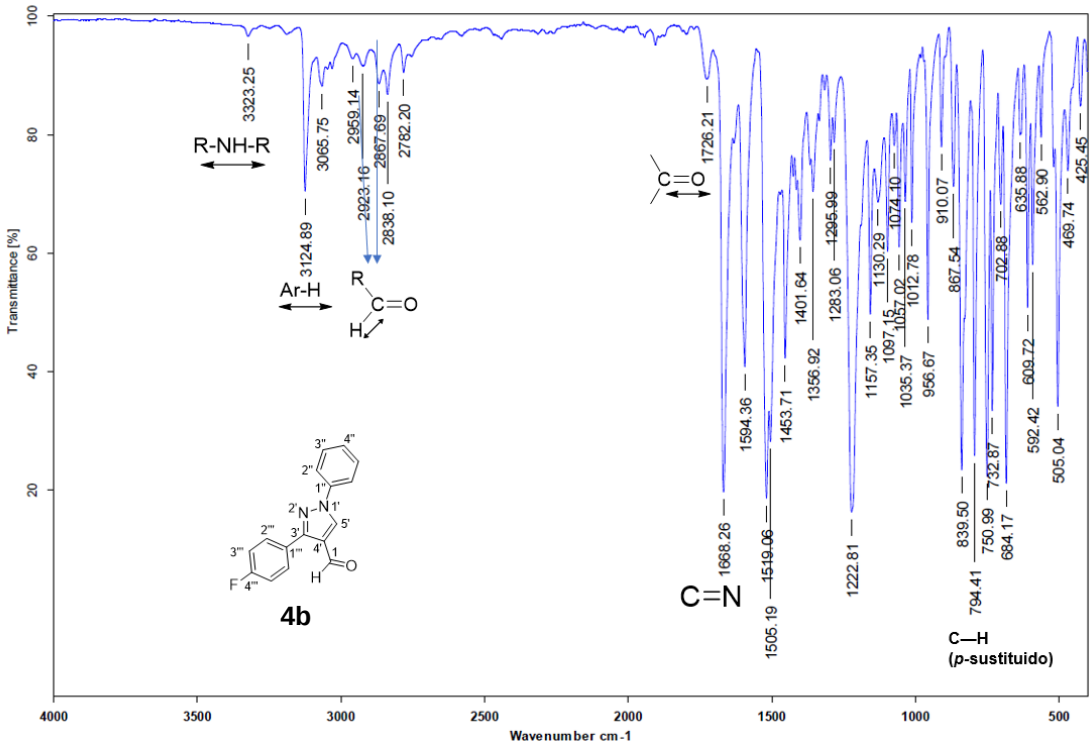


Figure S60. FT-IR of 3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4b**.

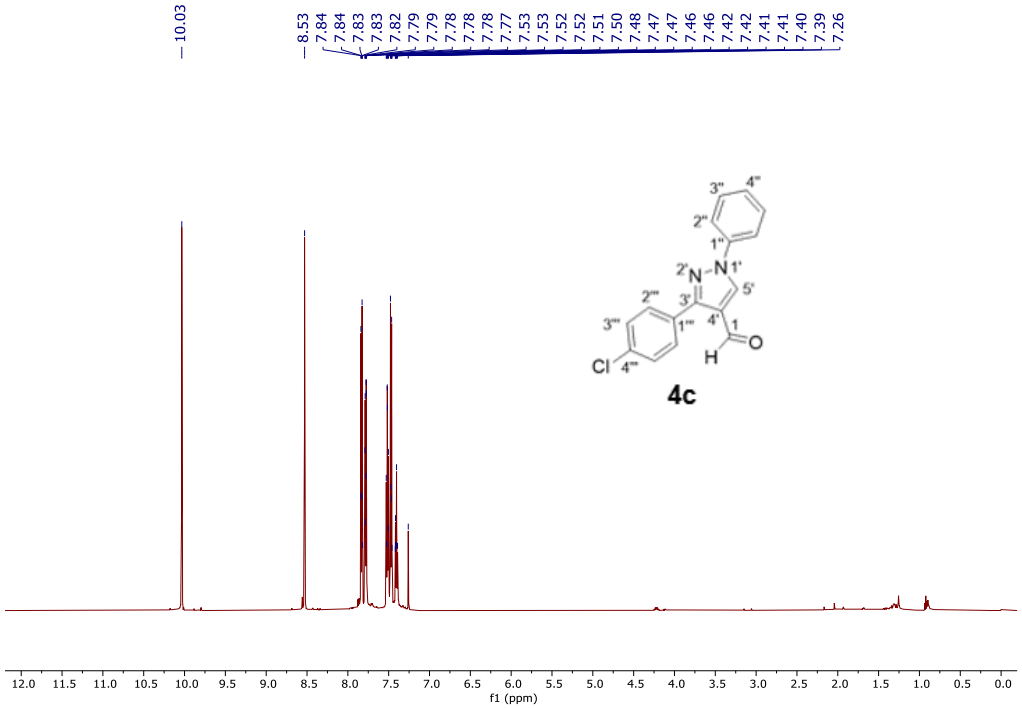


Figure S61. ^{1}H NMR (500 MHz, $CDCl_3$) of 3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4c**.

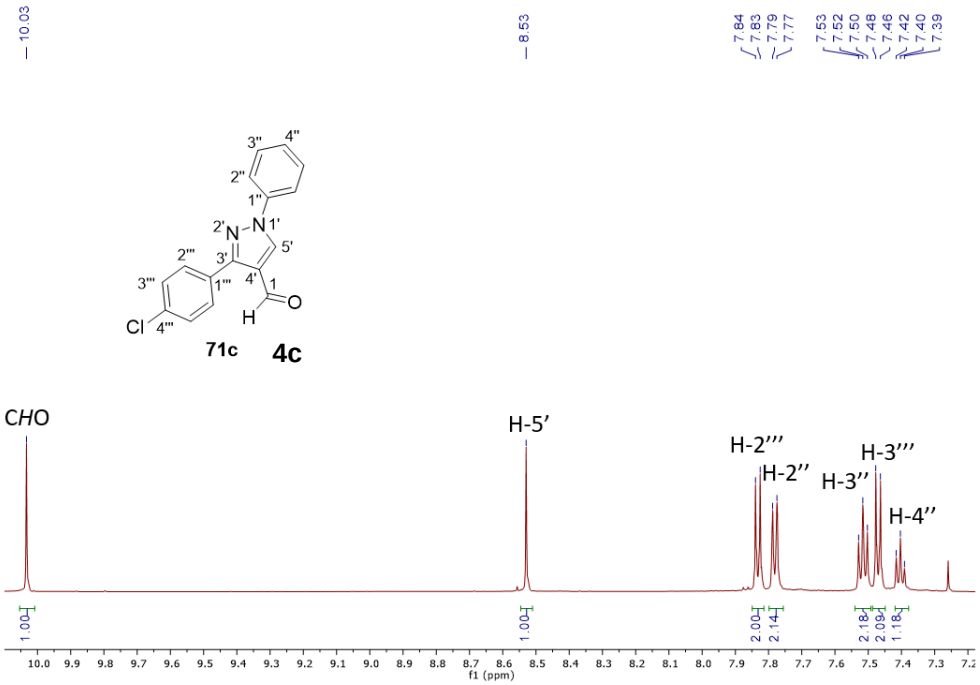


Figure S62. Expansion of ^{1}H NMR (500 MHz, $CDCl_3$) of 3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4c**.

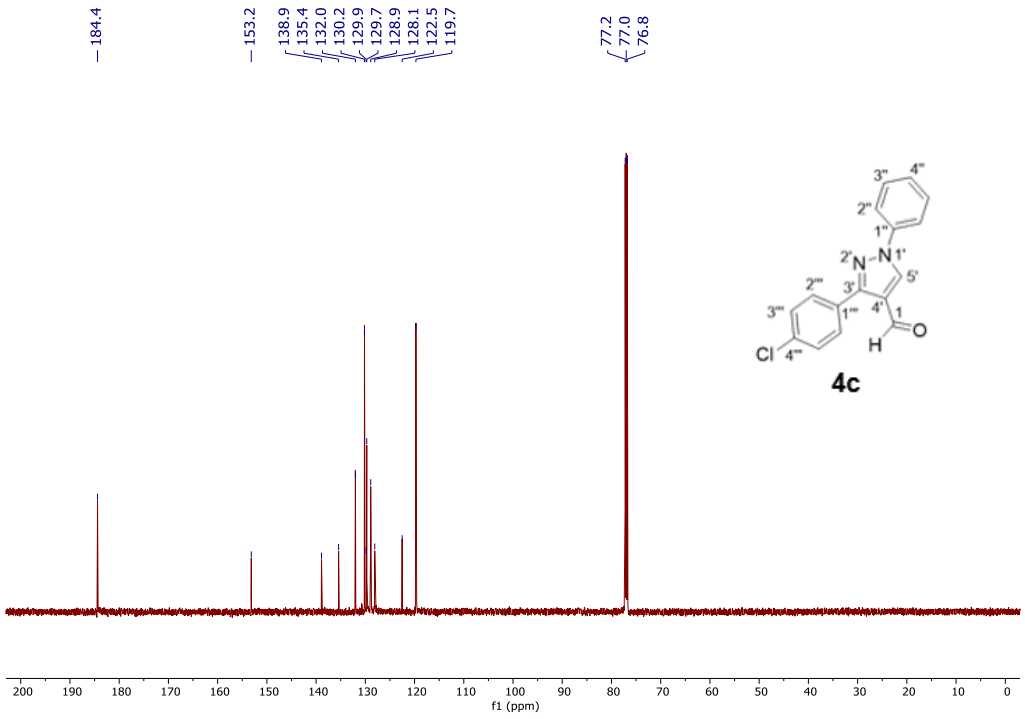


Figure S63. ^{13}C NMR (125 MHz, $CDCl_3$) of 3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4c**.

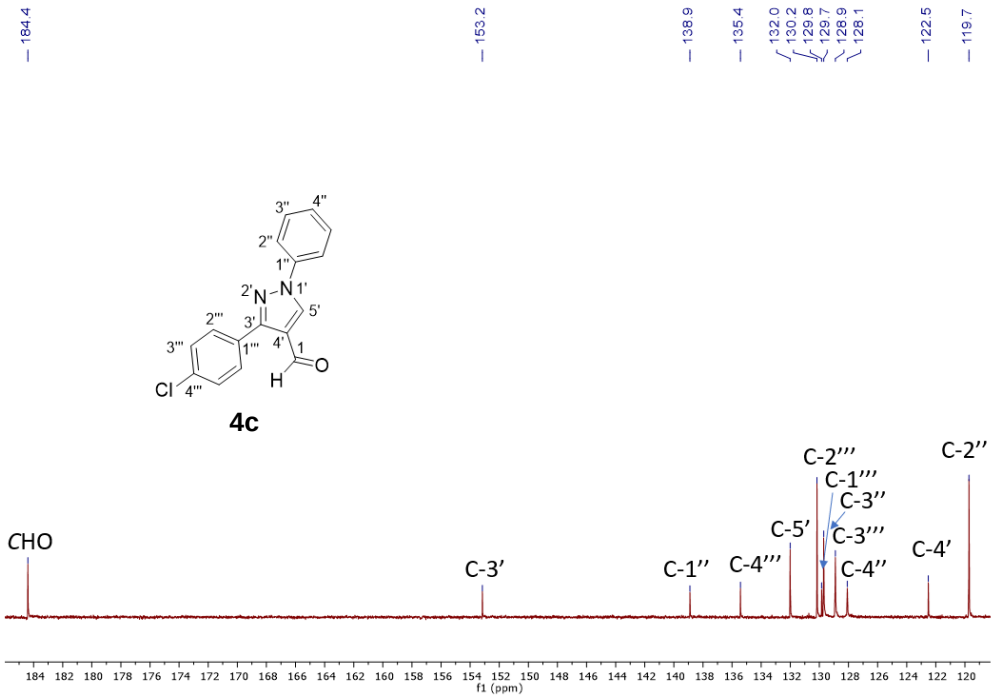


Figure S64. Expansion of ^{13}C NMR (125 MHz, $CDCl_3$) of 3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4c**.

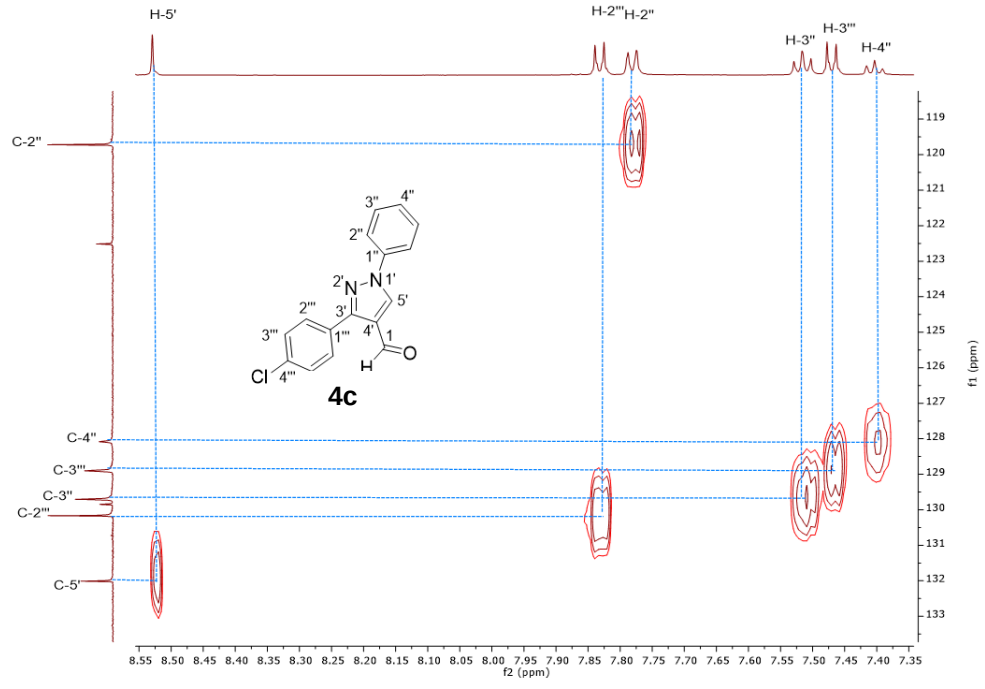


Figure S65. Expansion of HSQC experiment of 3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4c**.

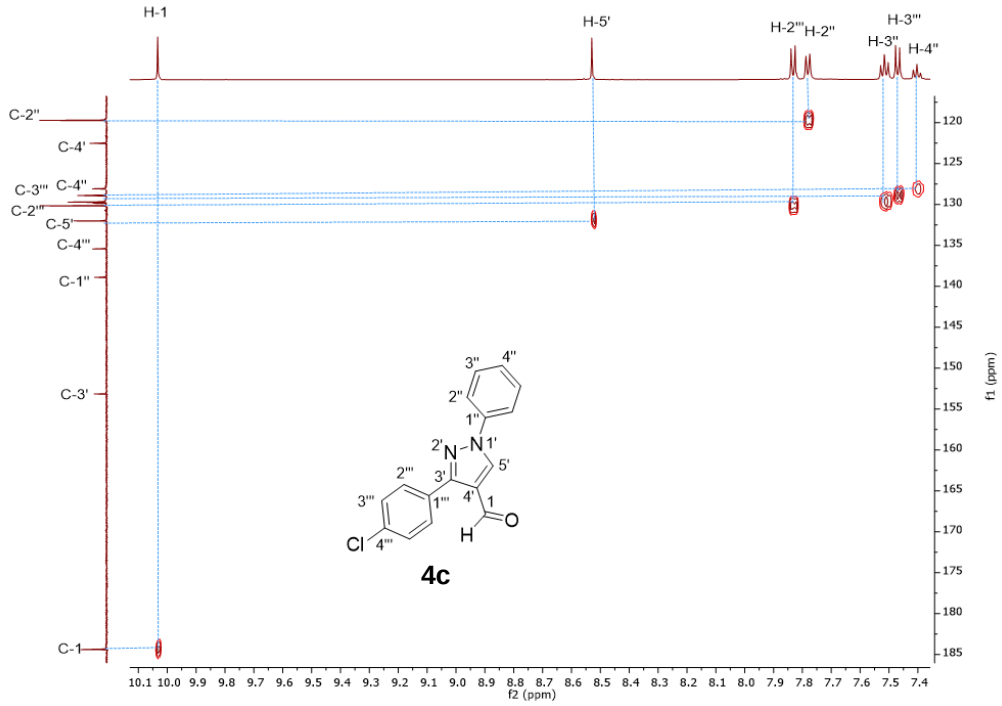


Figure S66. HSQC experiment of 3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4c**.

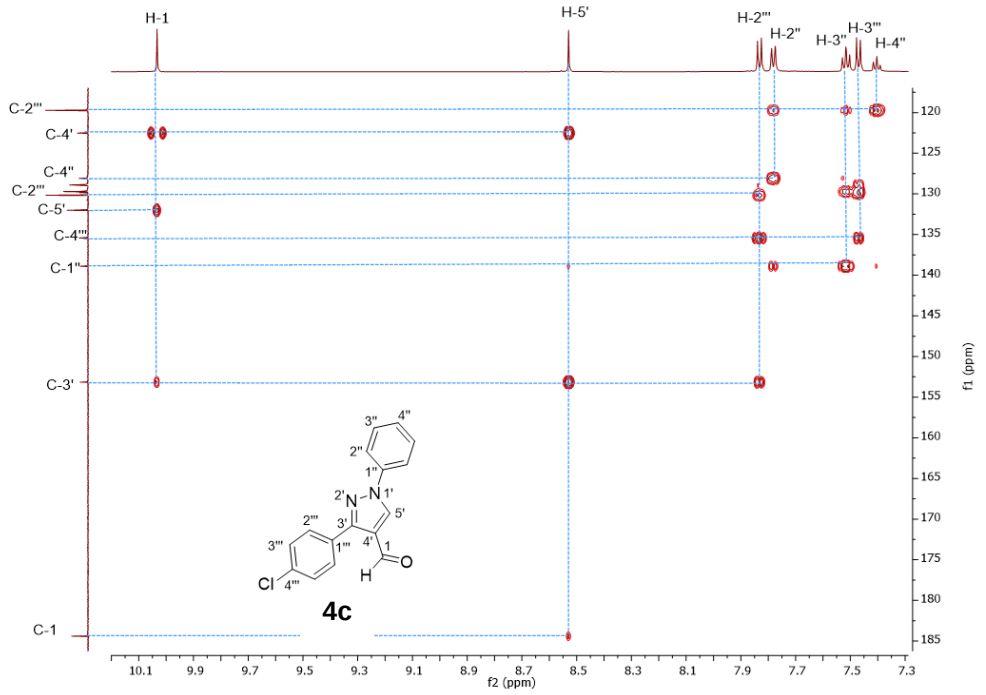
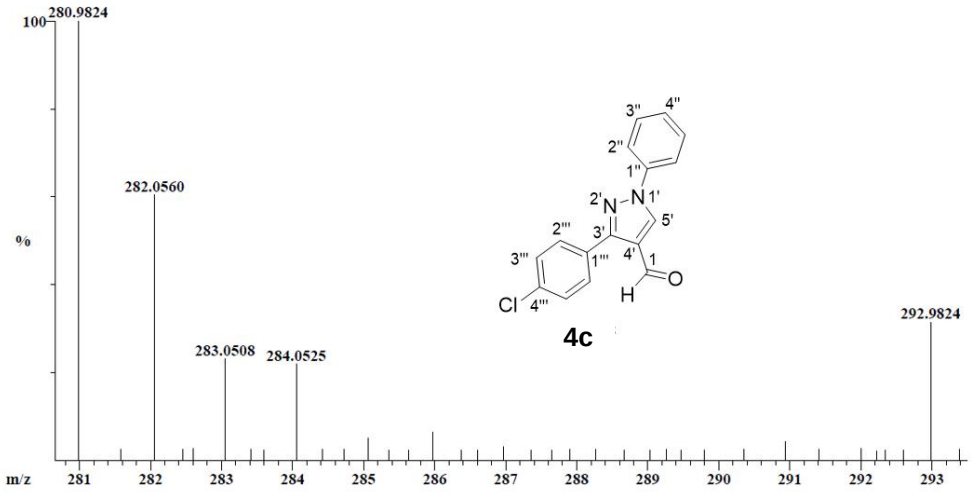


Figure S67. HMBC experiment of 3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4c**.



Selected Isotopes : $H_{0-11}C_{0-16}N_{0-2}O_{0-1}Cl_{0-1}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
282.0560	60.4%	$C_{16}H_{11}N_2O\,Cl$	282.0560	0.0	12.0

Figure S68. HRMS of 3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4c**.

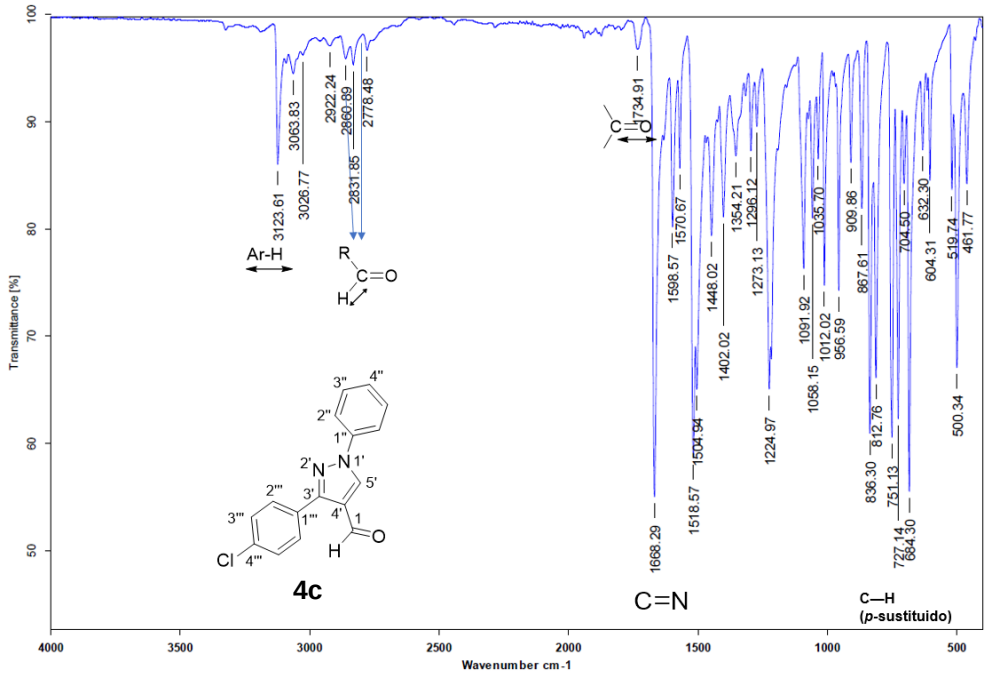


Figure S69. FT-IR of 3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4c**.

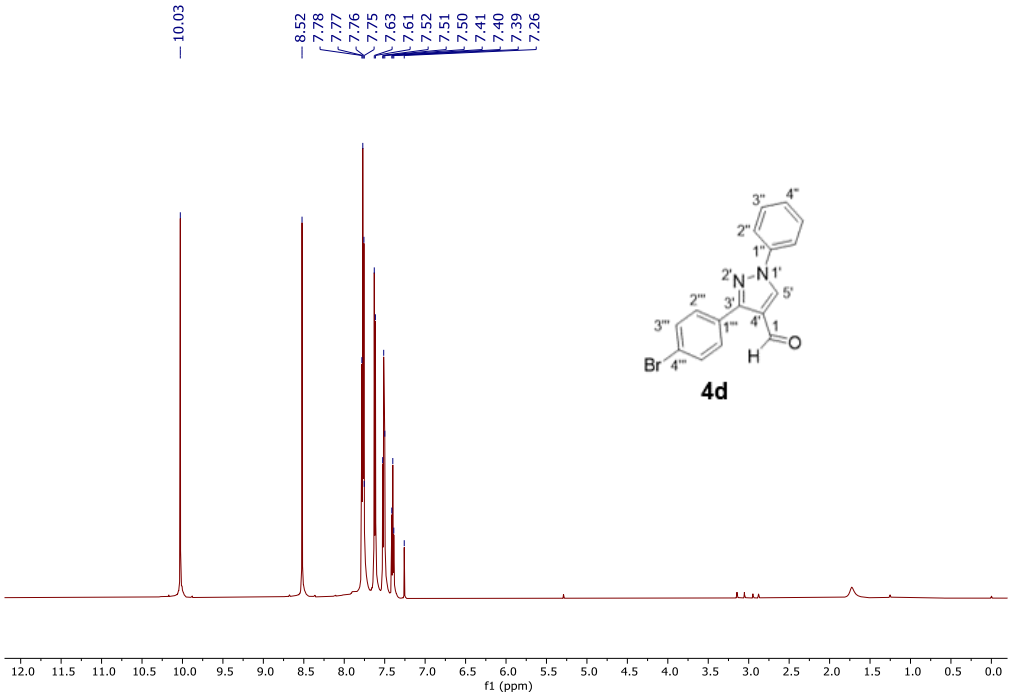


Figure S70. ^{1}H NMR (500 MHz, $CDCl_3$) of 4 3-(4-bromophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4d**.

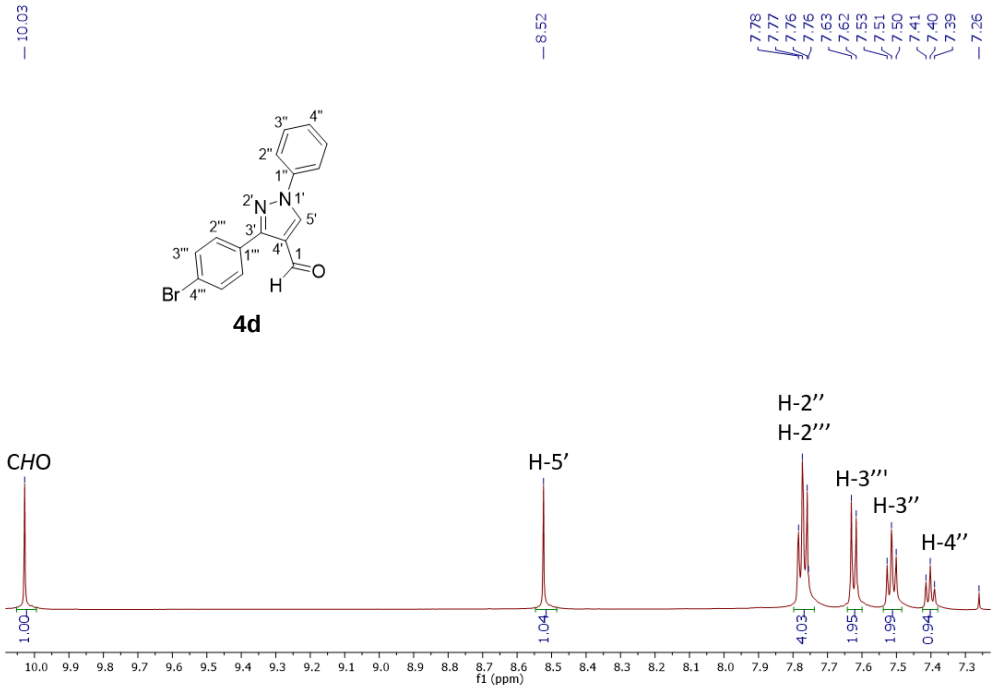


Figure S71. Expansion of ^{1}H NMR (500 MHz, $CDCl_3$) of 4 3-(4-bromophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4d**.

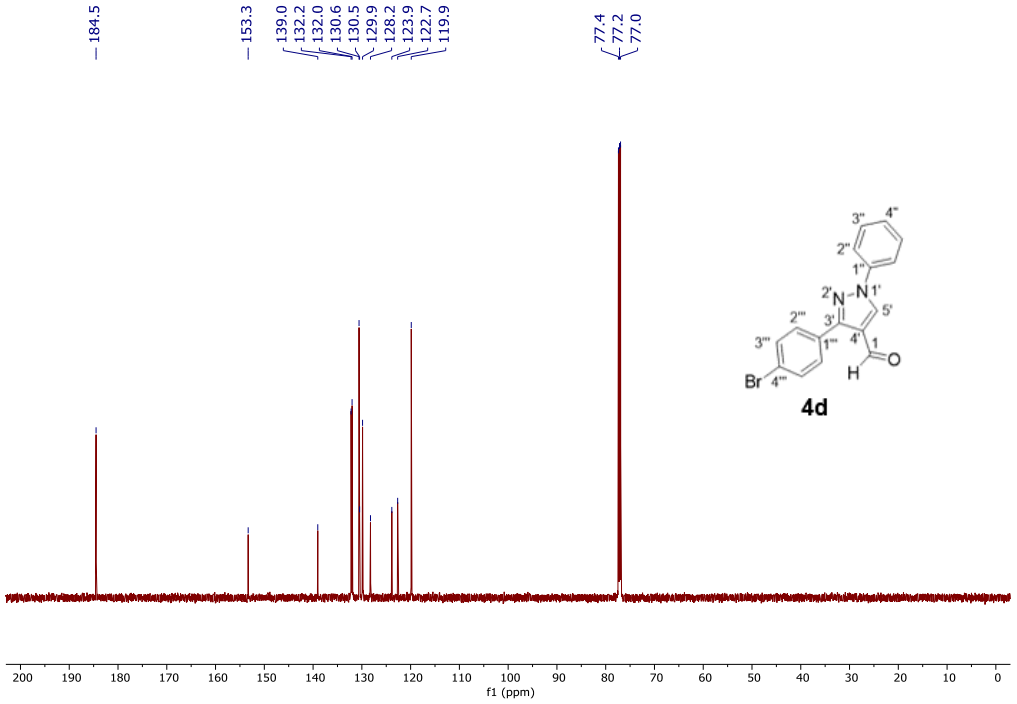


Figure S72. ^{13}C NMR (125 MHz, $CDCl_3$) of 4 3-(4-bromophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4d**.

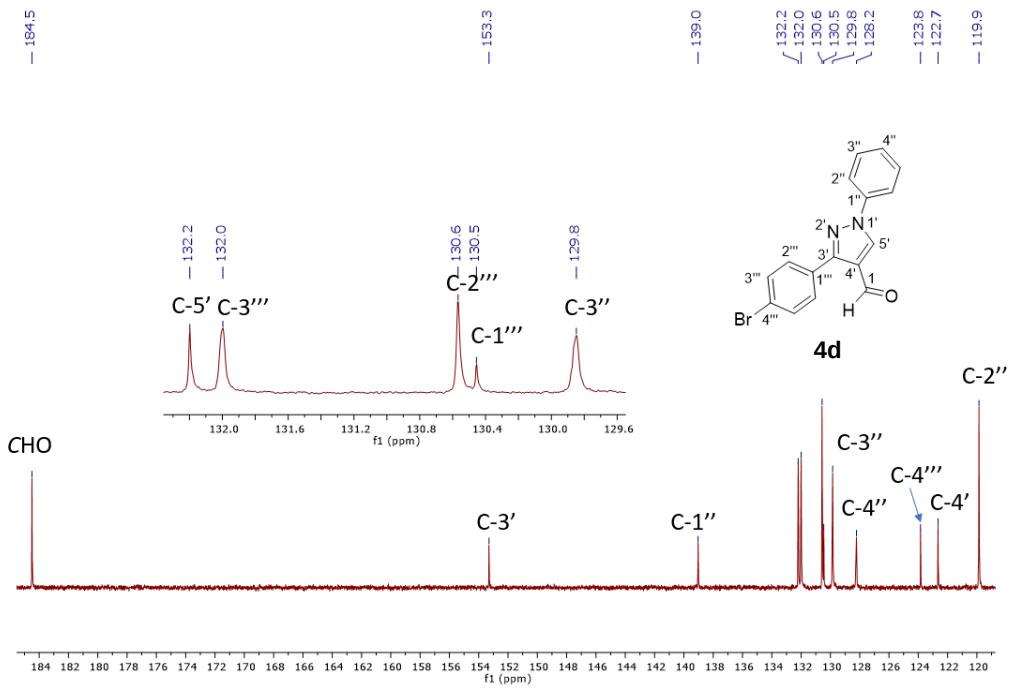


Figure S73. Expansion of ^{13}C NMR (125 MHz, $CDCl_3$) of 4 3-(4-bromophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4d**.

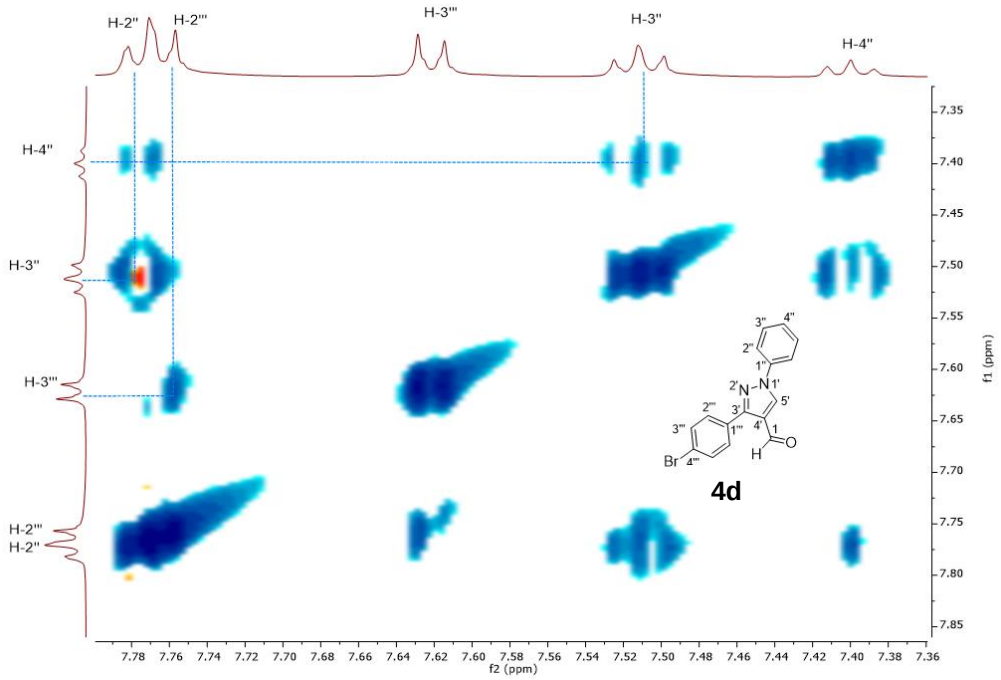


Figure S74. COSY experiment of 4 3-(4-bromophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4d**.

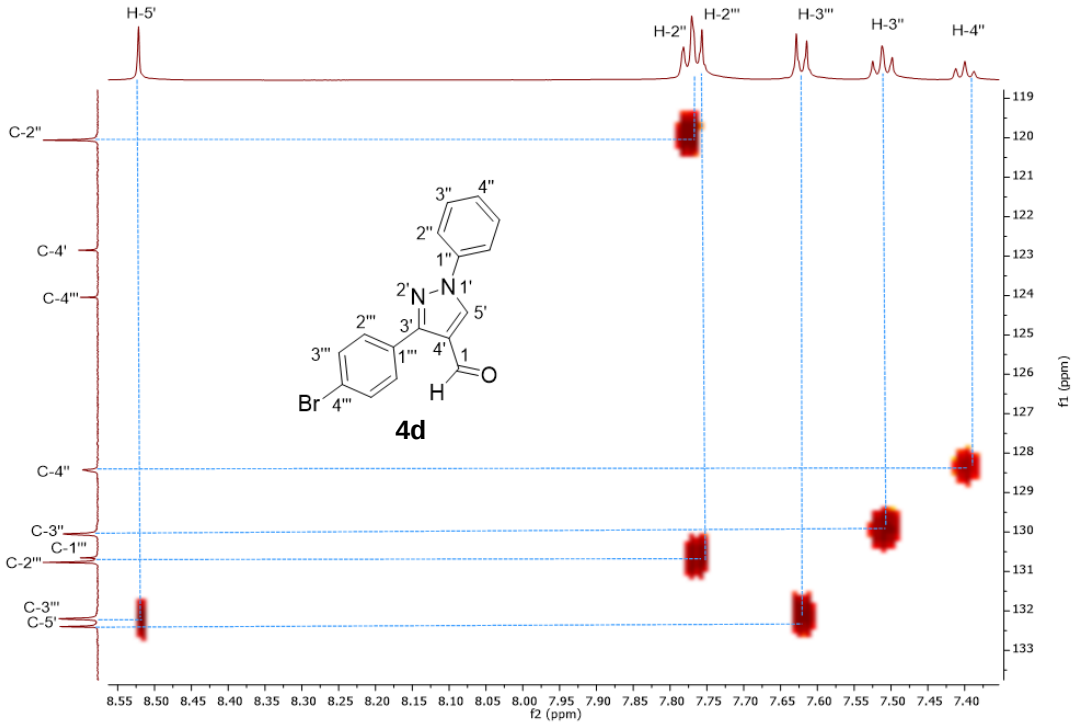


Figure S75. HSQC experiment of 4 3-(4-bromophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4d**.

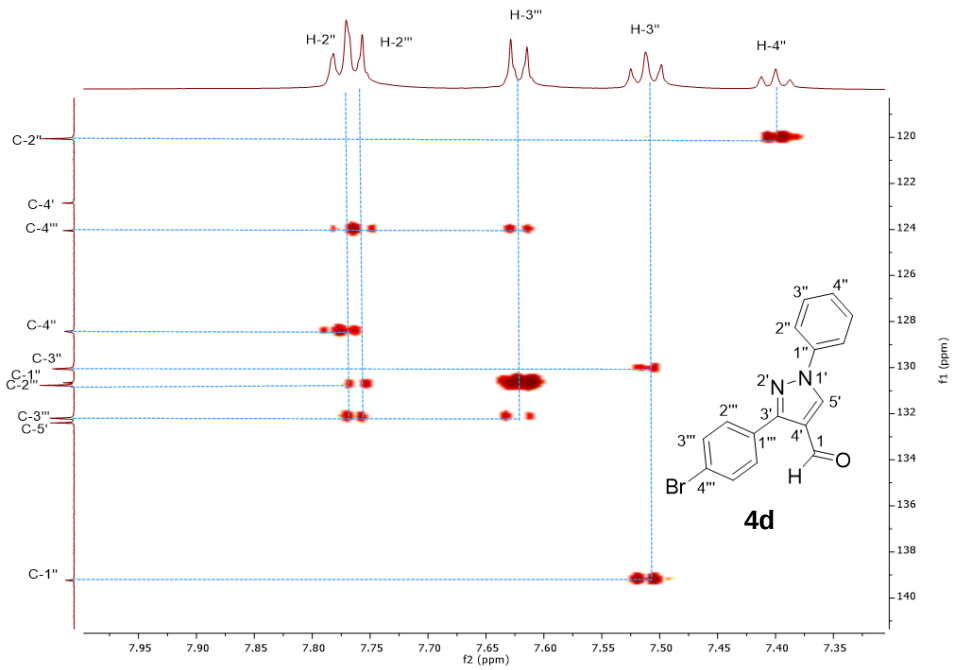
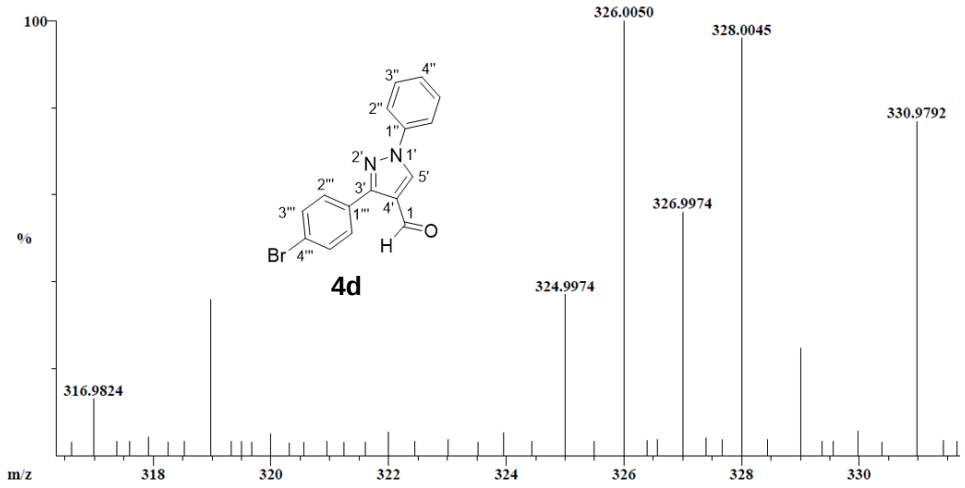


Figure S76. HMBC experiment of 4 3-(4-bromophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4d**.



Selected Isotopes : $H_{0-11}C_{0-16}N_{0-2}O_{0-1}Br_{0-1}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
326.0050	100.0%	$C_{16}H_{11}N_2OBr$	326.0055	-1.5	12.0

Figure S77. HRMS of 4 3-(4-bromophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4d**.

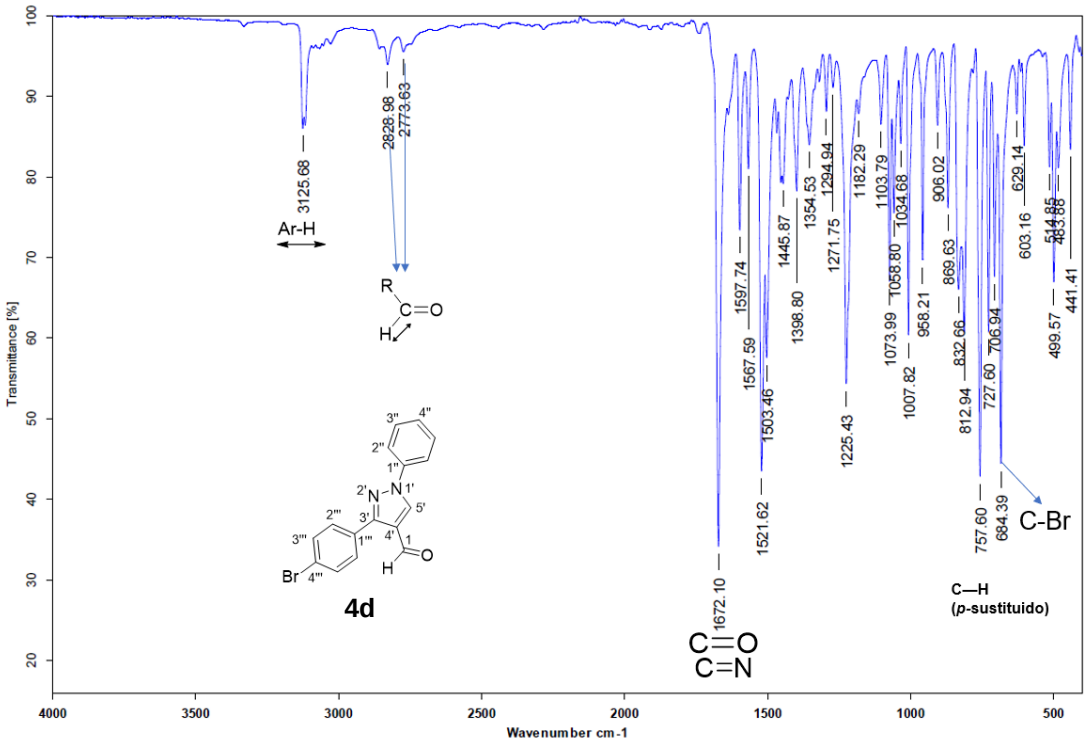


Figure S78. FT-IR of 4 3-(4-bromophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4d**.

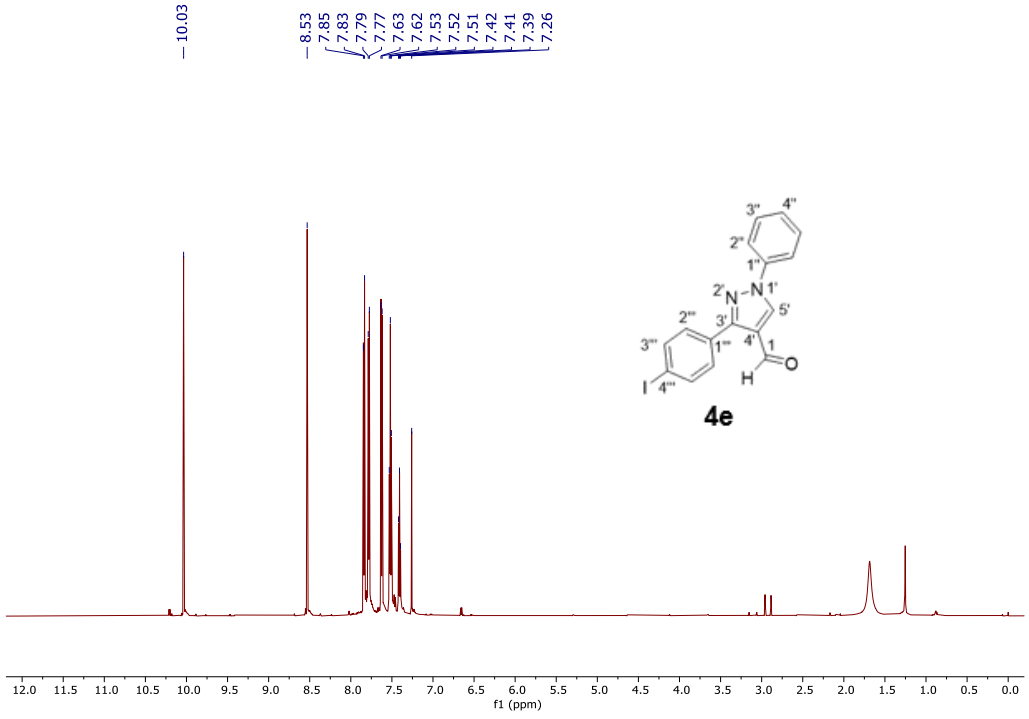


Figure S79. ^{1}H NMR (500 MHz, $CDCl_3$) of 4 3-(4-iodophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4e**.

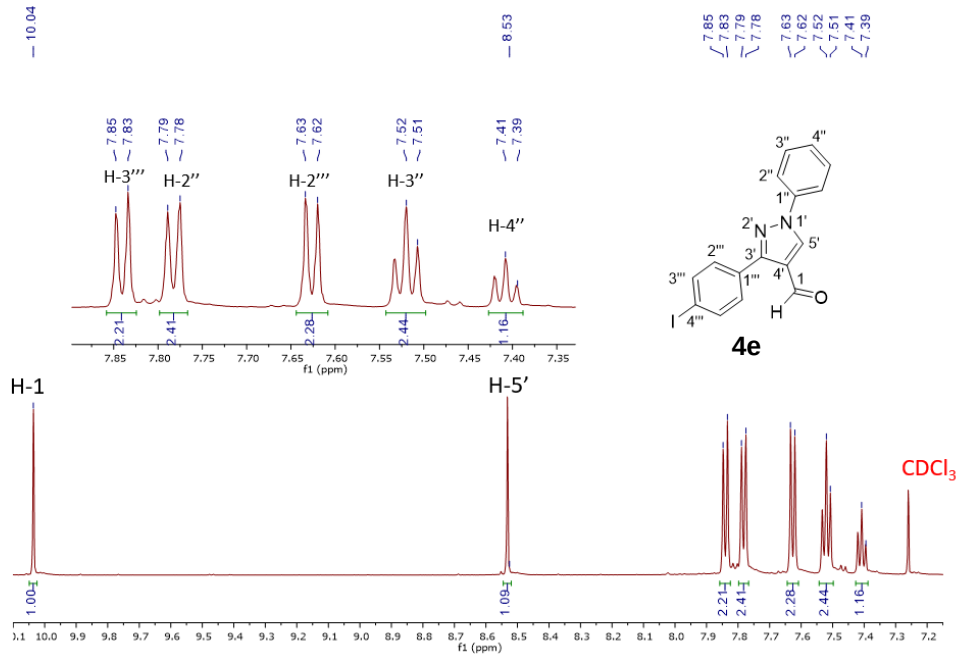


Figure S80. Expansion of ^{1}H NMR (500 MHz, $CDCl_3$) of 4 3-(4-iodophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4e**.

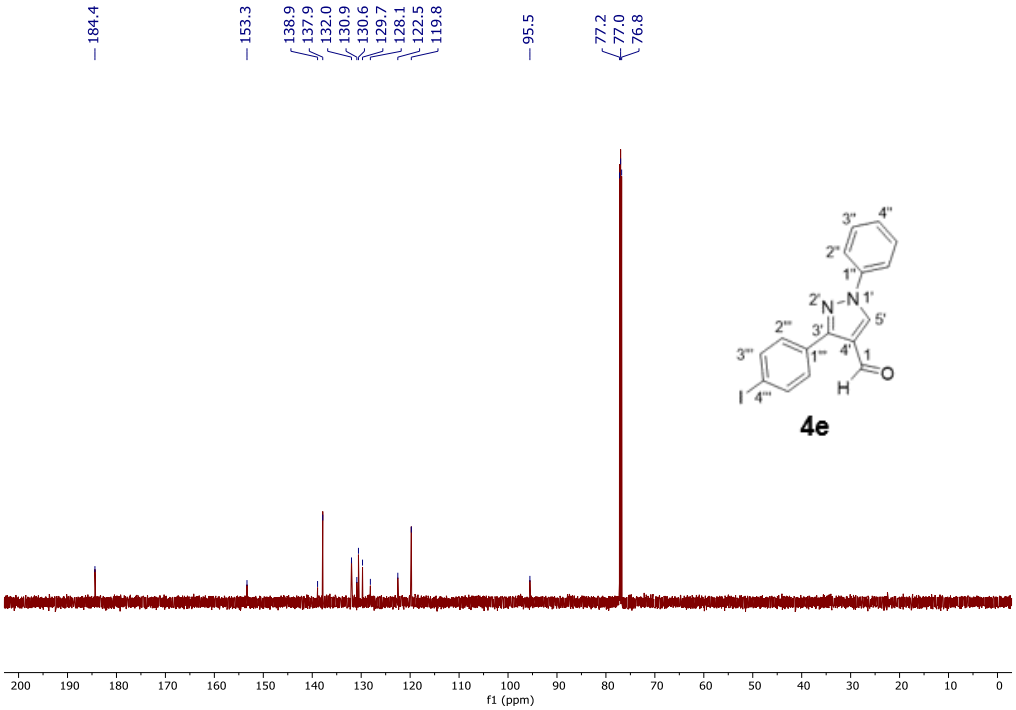


Figure S81. ^{13}C NMR (125 MHz, $CDCl_3$) of 4 3-(4-iodophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4e**.

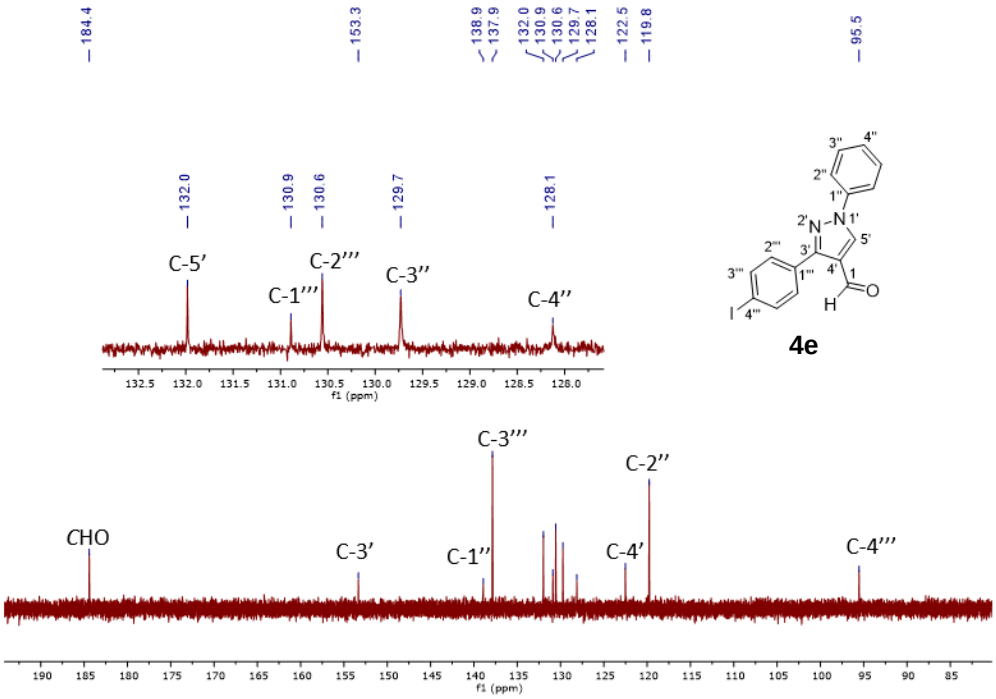


Figure S82. Expansion of ^{13}C NMR (125 MHz, $CDCl_3$) of 4 3-(4-iodophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4e**.

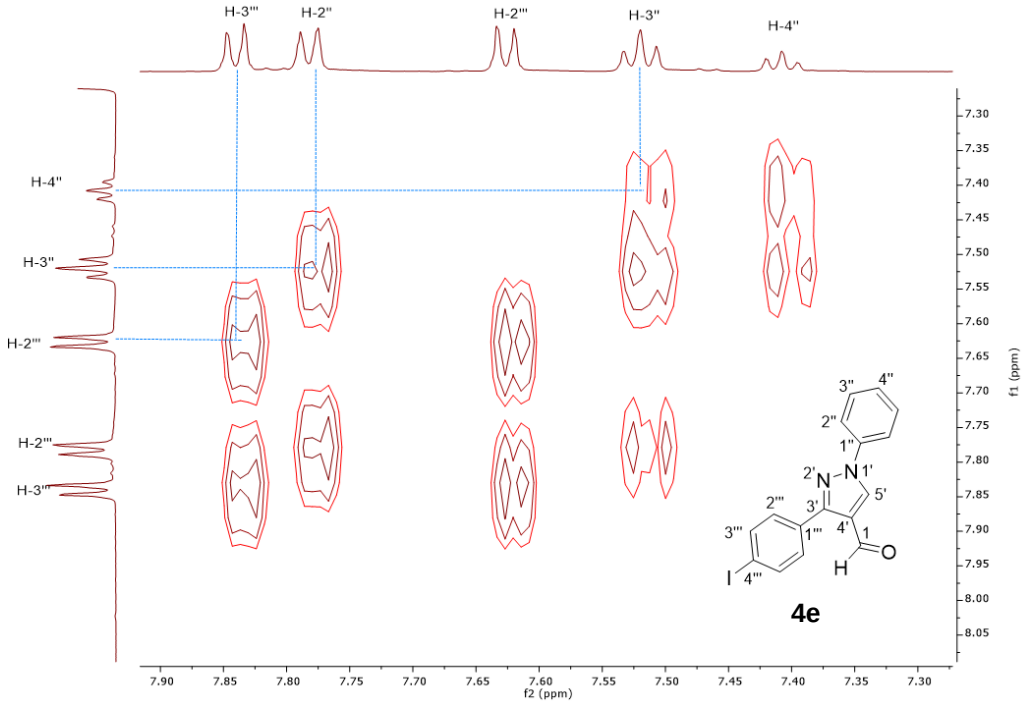


Figure S83. COSY experiment of 4 3-(4-iodophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4e**.

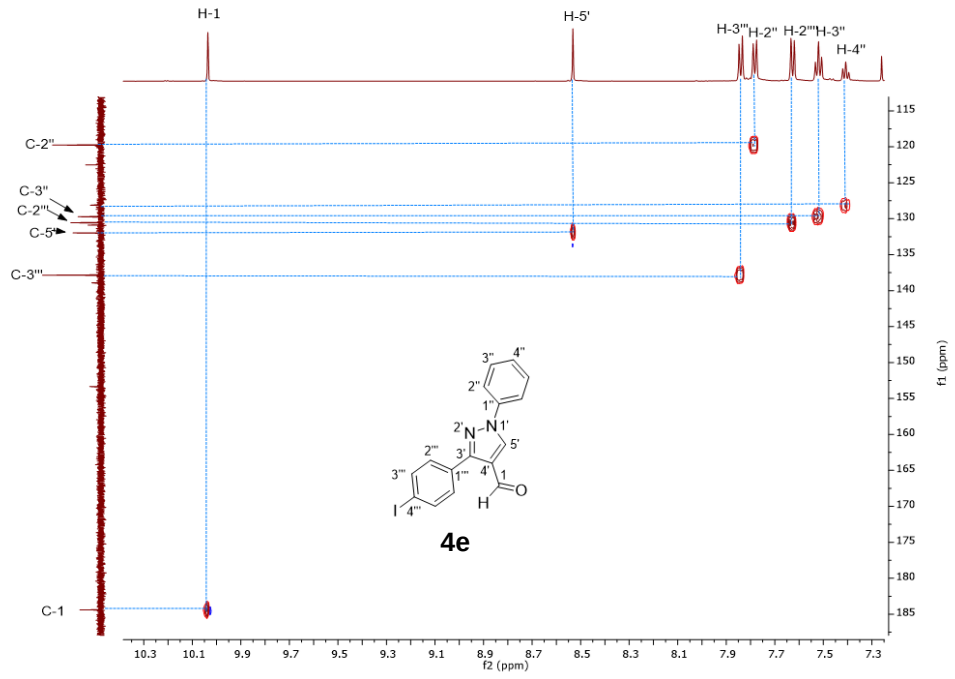


Figure S84. HSQC experiment of 4 3-(4-iodophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4e**.

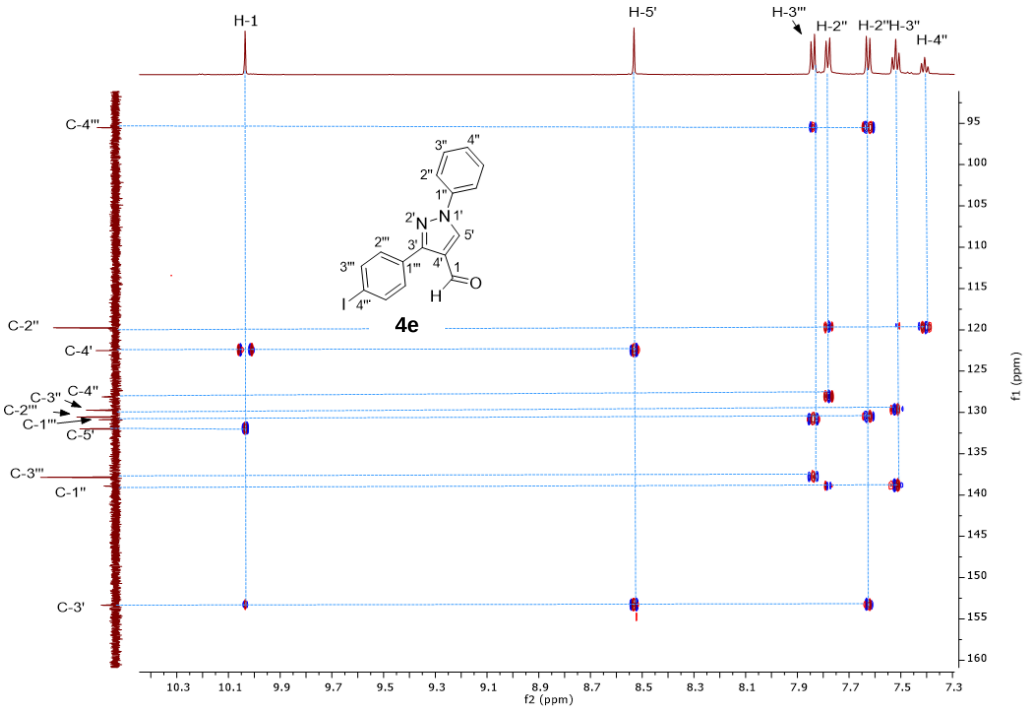
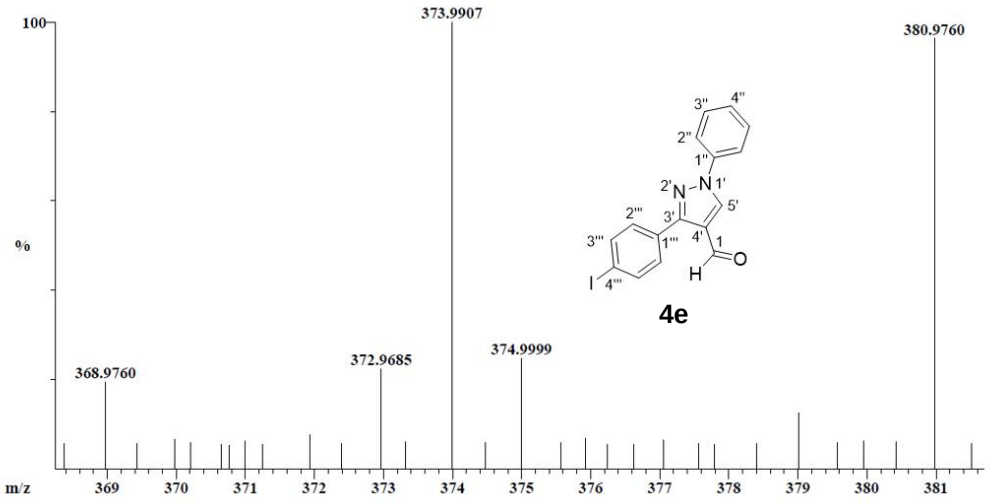


Figure S85. HMBC experiment of 4 3-(4-iodophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4e**.



Selected Isotopes : $H_{0-11}C_{0-16}N_{0-2}O_{0-1}I_{0-1}$			Error Limit : 5 ppm		Unsaturation Limits : 0 to 50
Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
373.9907	100.0%	$C_{16}H_{11}N_2OI$	373.9916	-2.5	12.0

Figure S86. HRMS of 3-(4-iodophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4e**.

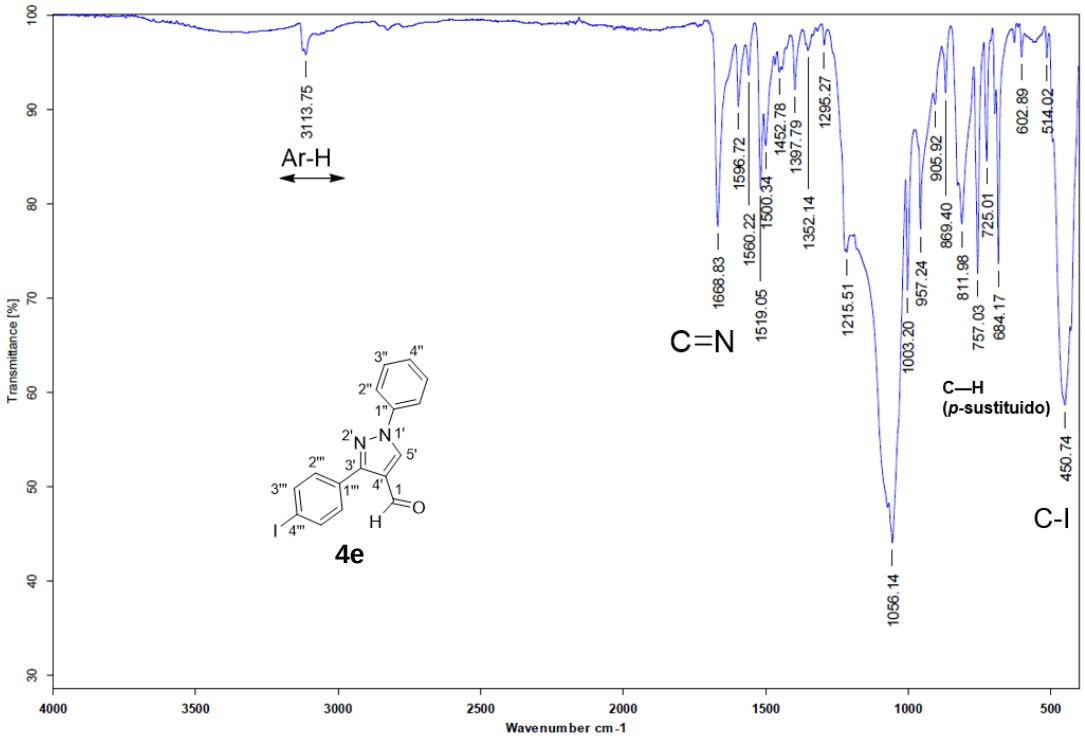


Figure S87. FT-IR of 4 3-(4-iodophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4e**.

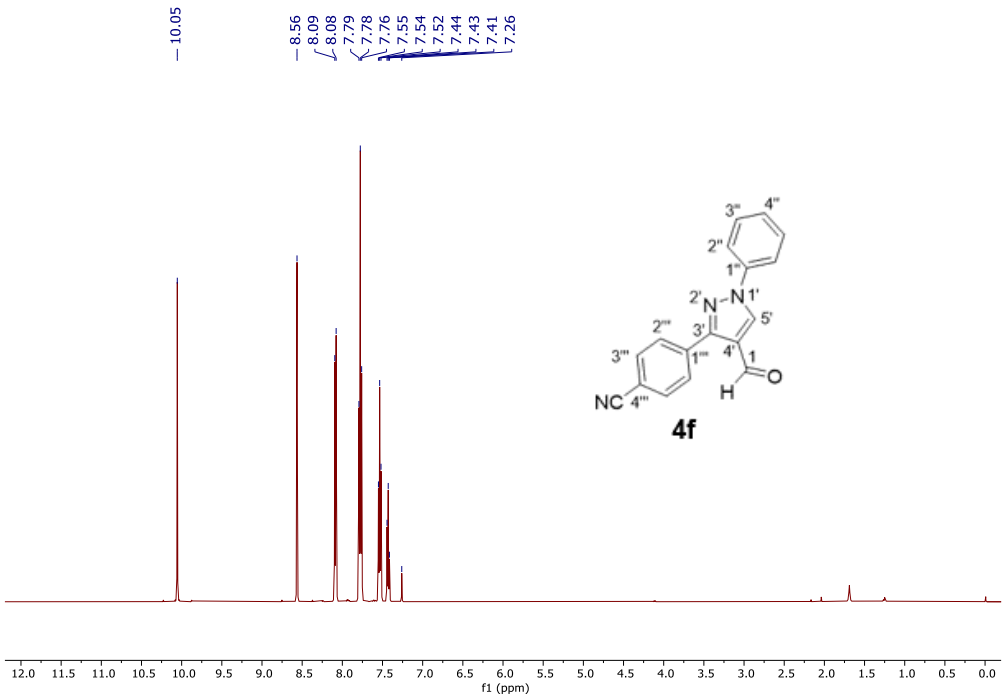


Figure S88. ^{1}H NMR (500 MHz, $CDCl_3$) of 4-(4-formyl-1-phenyl-1*H*-pyrazol-3-yl)benzonitrile **4f**.

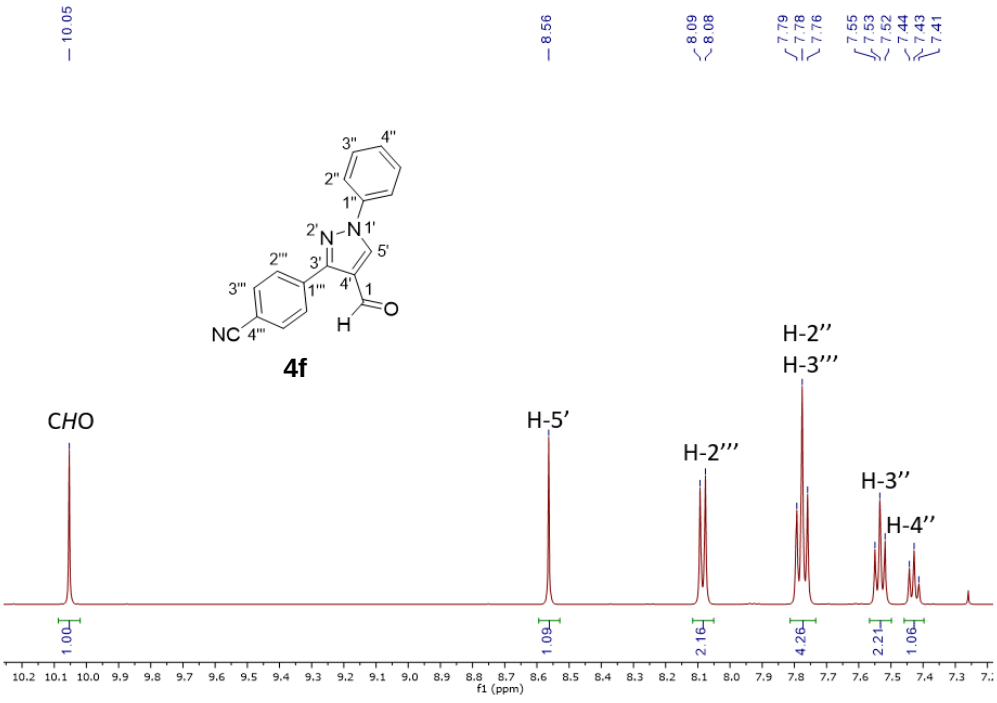


Figure S89. Expansion of ^{1}H NMR (500 MHz, $CDCl_3$) of 4-(4-formyl-1-phenyl-1*H*-pyrazol-3-yl)benzonitrile **4f**.

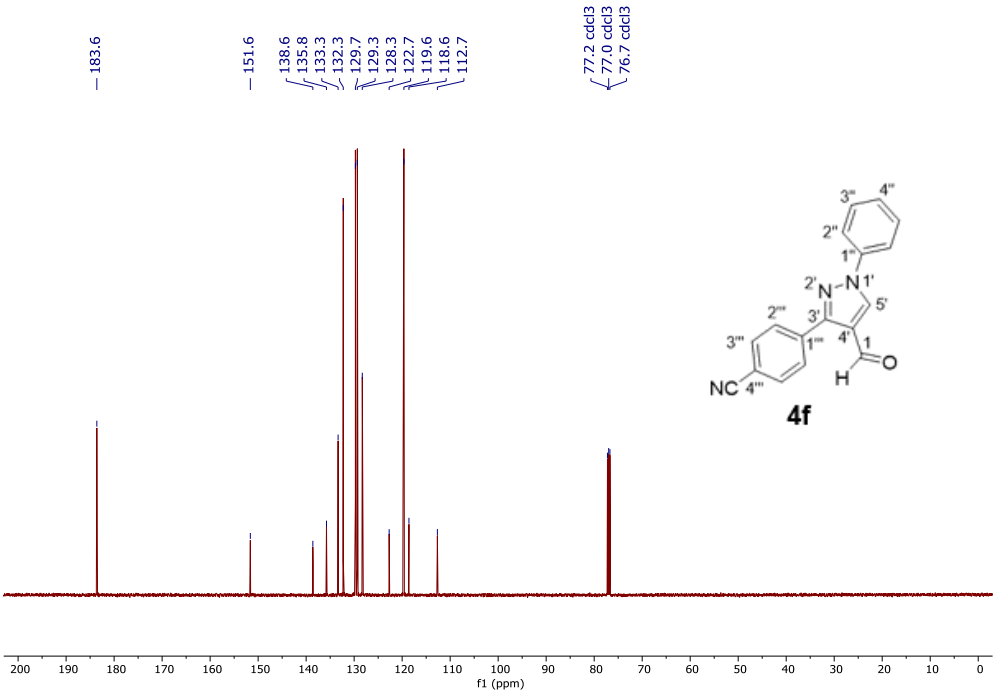


Figure S90. ^{13}C NMR (125 MHz, $CDCl_3$) of 4-(4-formyl-1-phenyl-1*H*-pyrazol-3-yl)benzonitrile **4f**.

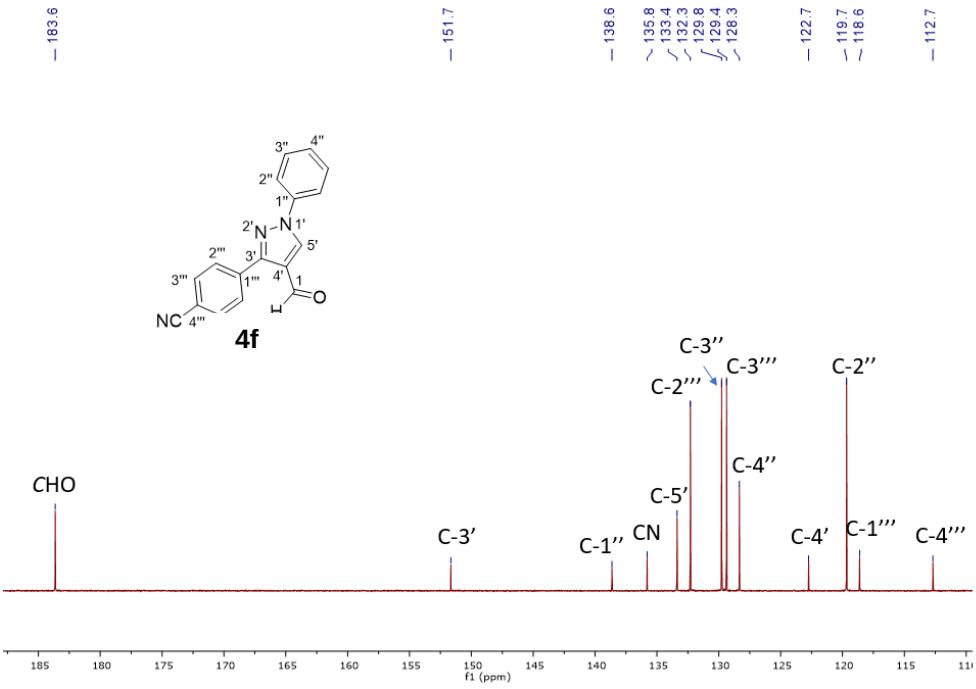


Figure S91. Expansion of ^{13}C NMR (125 MHz, $CDCl_3$) of 4-(4-formyl-1-phenyl-1*H*-pyrazol-3-yl)benzonitrile **4f**.

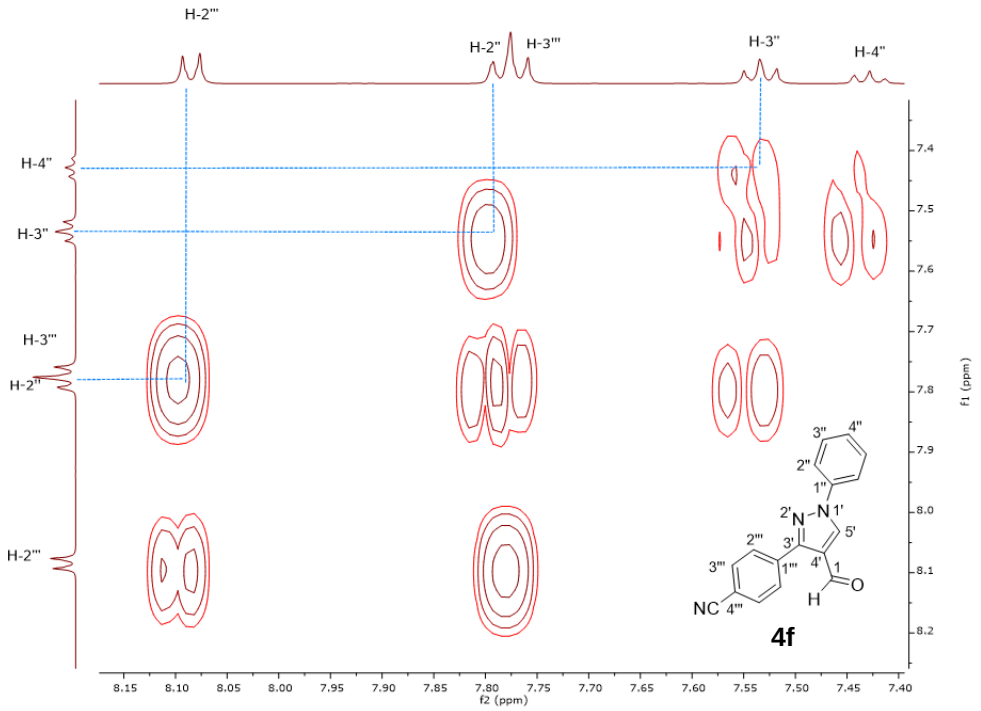


Figure S92. COSY experiment of 4-(4-formyl-1-phenyl-1*H*-pyrazol-3-yl)benzonitrile **4f**.

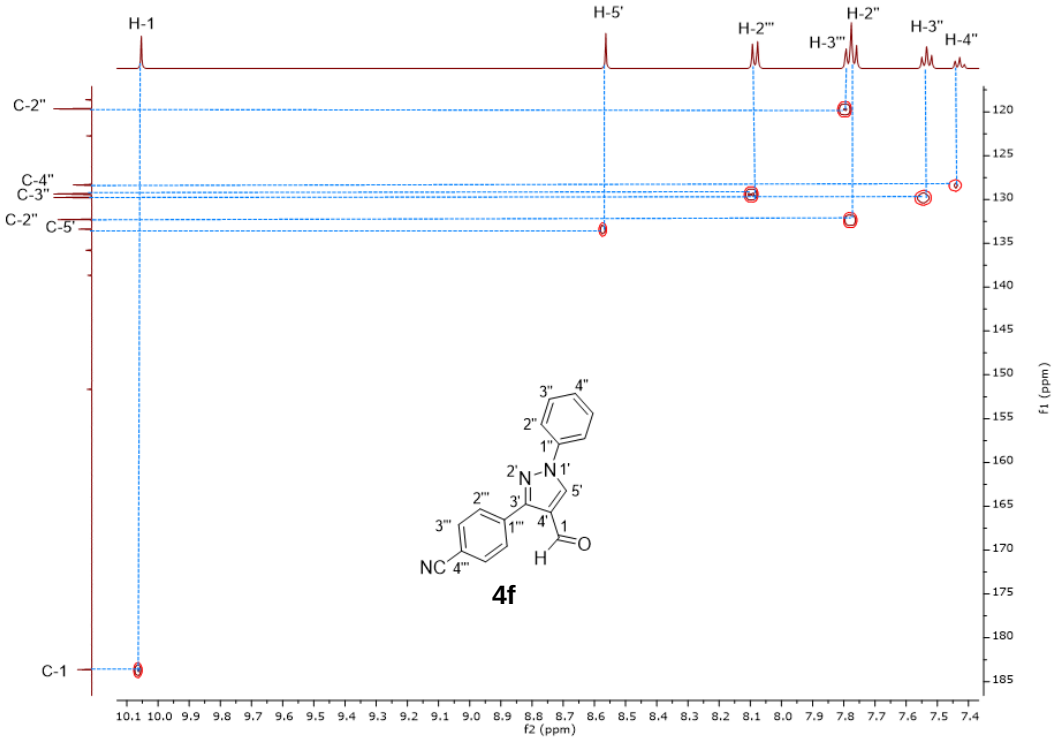


Figure S93. HSQC experiment of 4-(4-formyl-1-phenyl-1*H*-pyrazol-3-yl)benzonitrile **4f**.

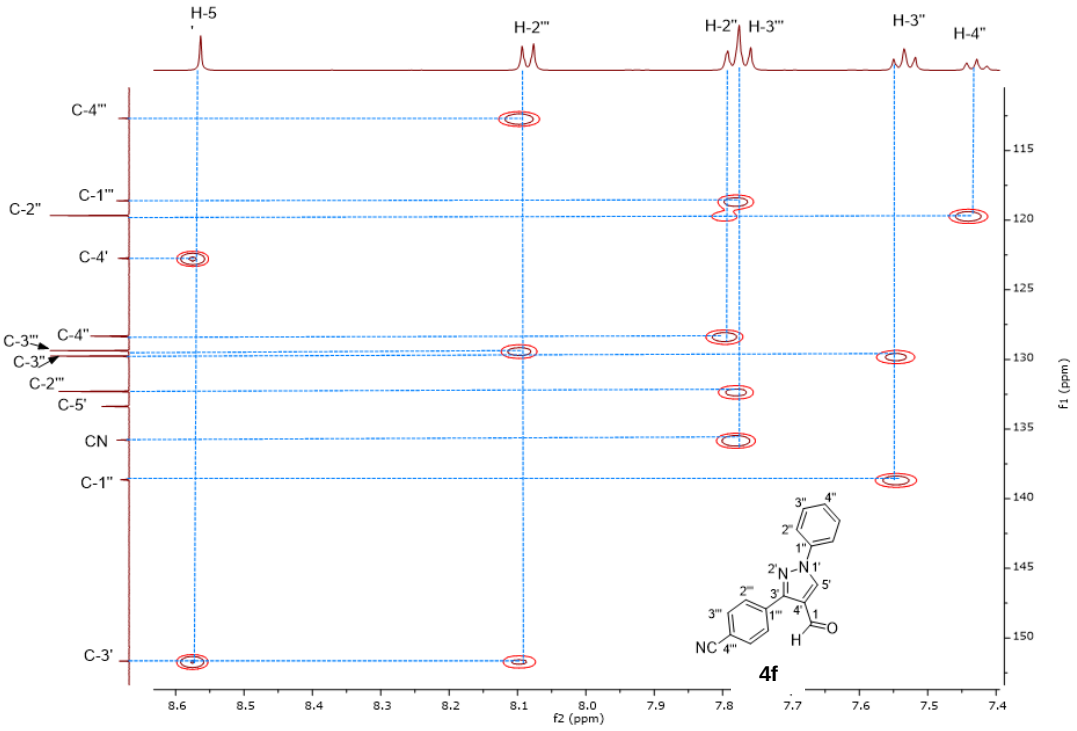
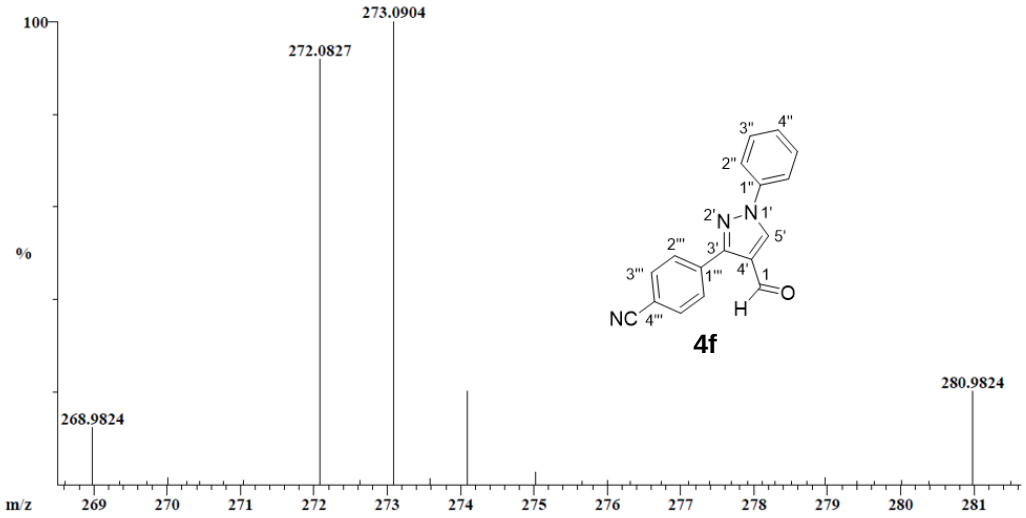


Figure S94. HMBC experiment of 4-(4-formyl-1-phenyl-1*H*-pyrazol-3-yl)benzonitrile **4f**.



Selected Isotopes : $H_{0-11}C_{0-17}N_{0-3}O_{0-1}$			Error Limit : 5 ppm	Unsaturation Limits : 0 to 50	
Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
273.0904	100.0%	$C_{17}H_{11}N_3O$	273.0902	0.7	14.0

Figure S95. HRMS of 4-(4-formyl-1-phenyl-1*H*-pyrazol-3-yl)benzonitrile **4f**.

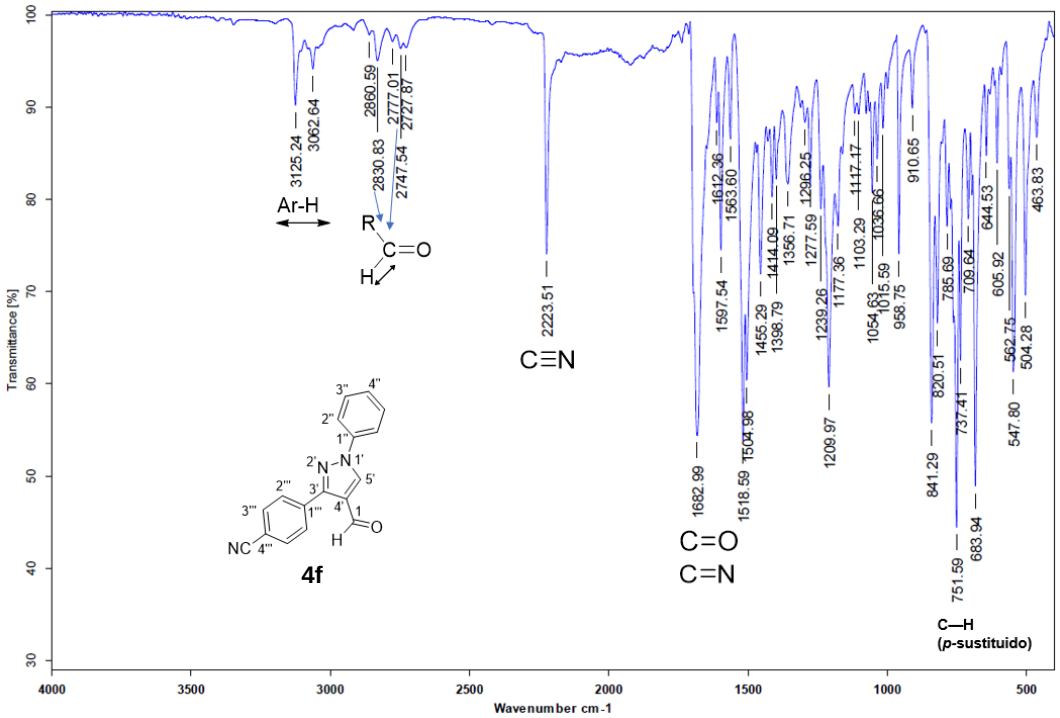


Figure S96. FT-IR of 4-(4-formyl-1-phenyl-1*H*-pyrazol-3-yl)benzonitrile **4f**.

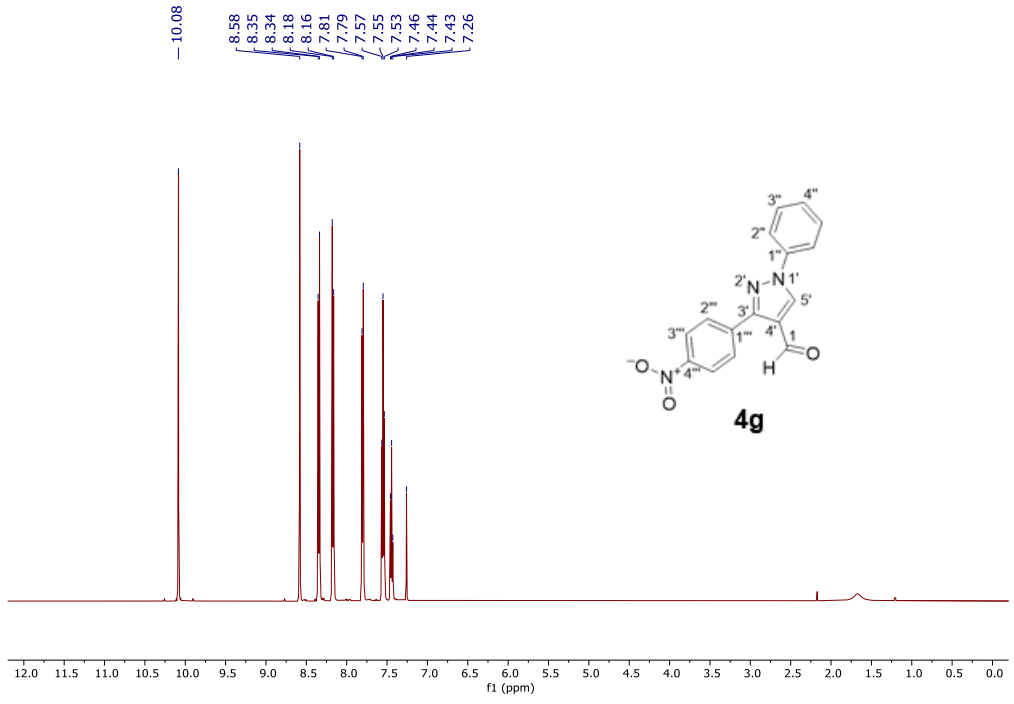


Figure S97. ^{1}H NMR (500 MHz, $CDCl_3$) of 3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4g**.

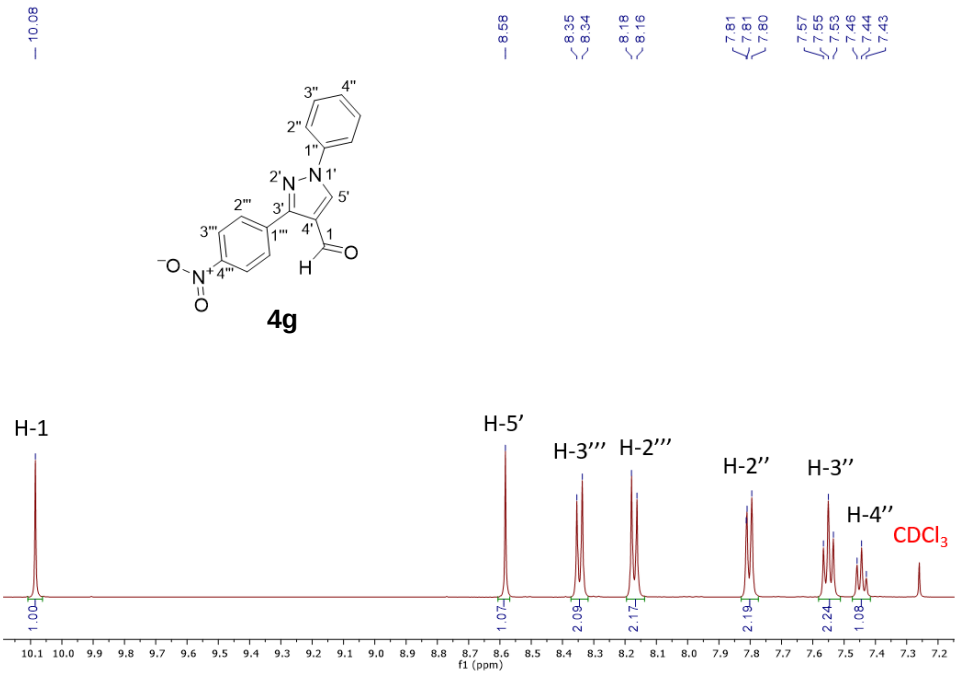


Figure S98. Expansion of ^{1}H NMR (500 MHz, $CDCl_3$) of 3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4g**.

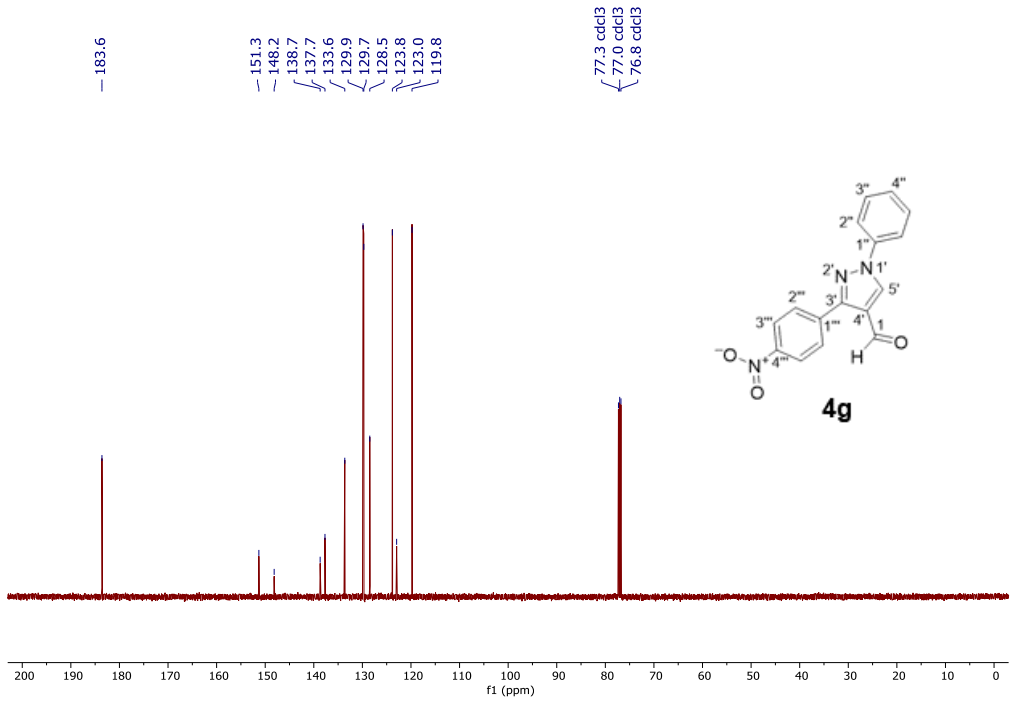


Figure S99. ^{13}C NMR (125 MHz, $CDCl_3$) of 3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4g**.

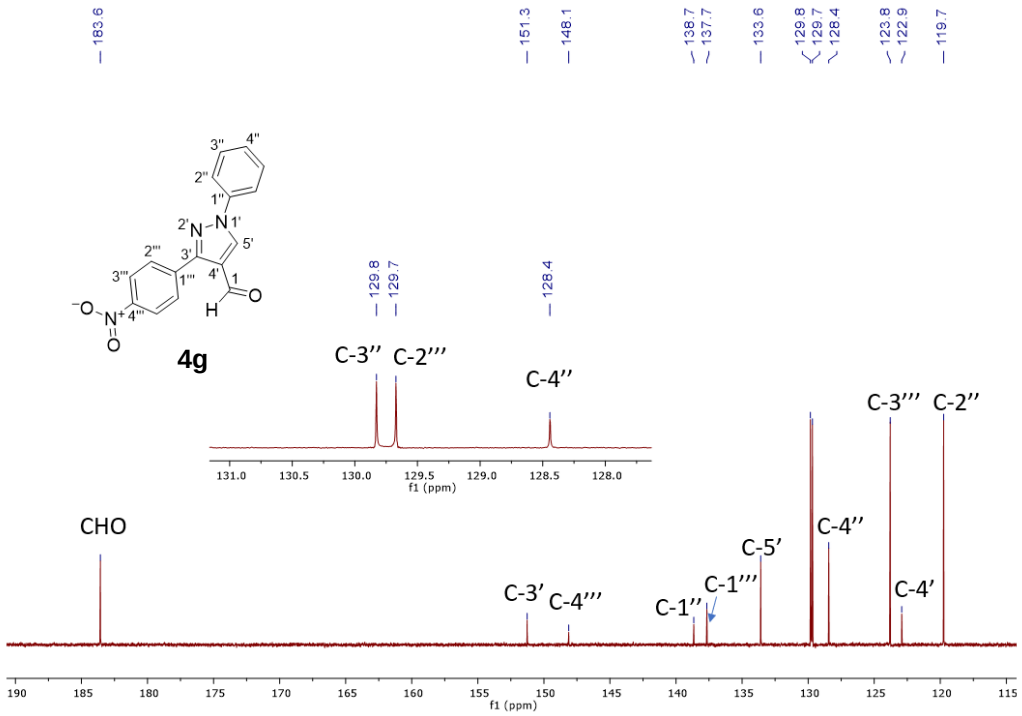


Figure S100. Expansion of ^{13}C NMR (125 MHz, $CDCl_3$) of 3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4g**.

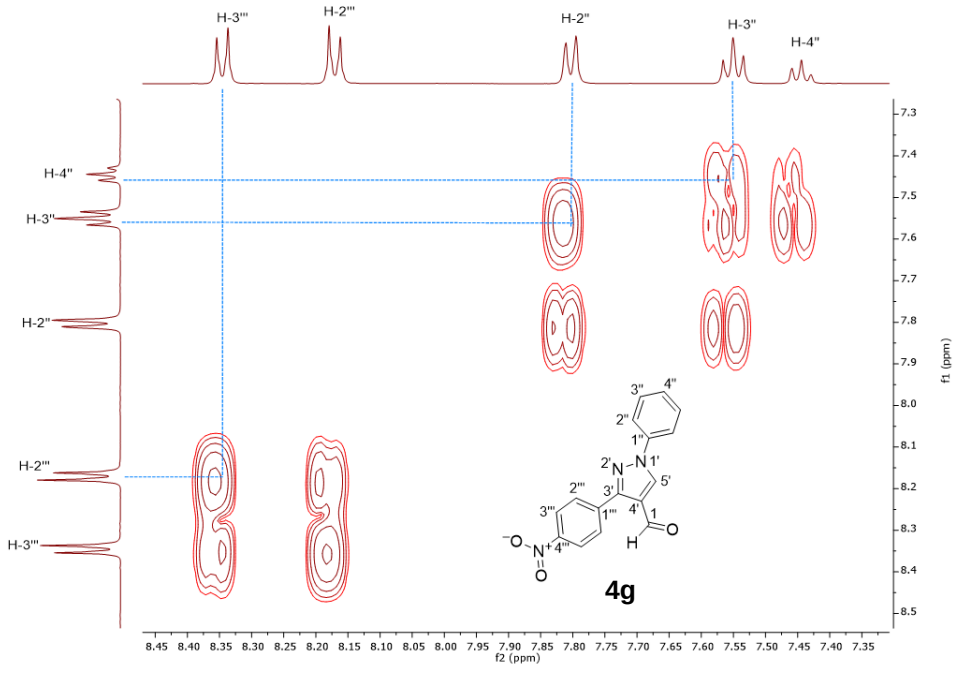


Figure S101. COSY experiment of 3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4g**.

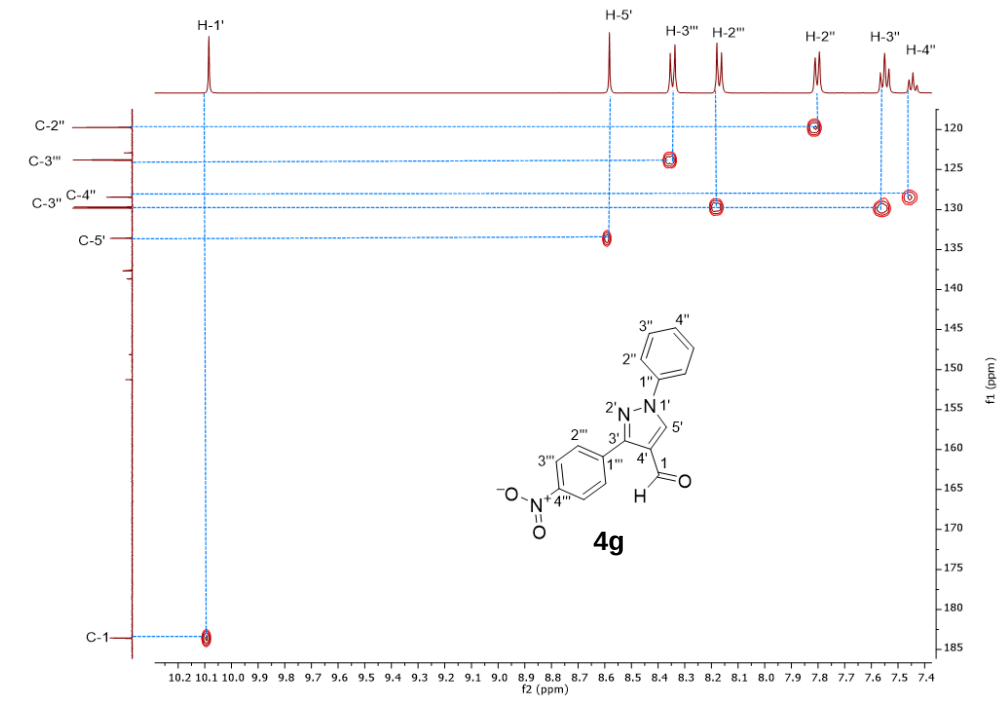


Figure S102. HSQC experiment of 3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4g**.

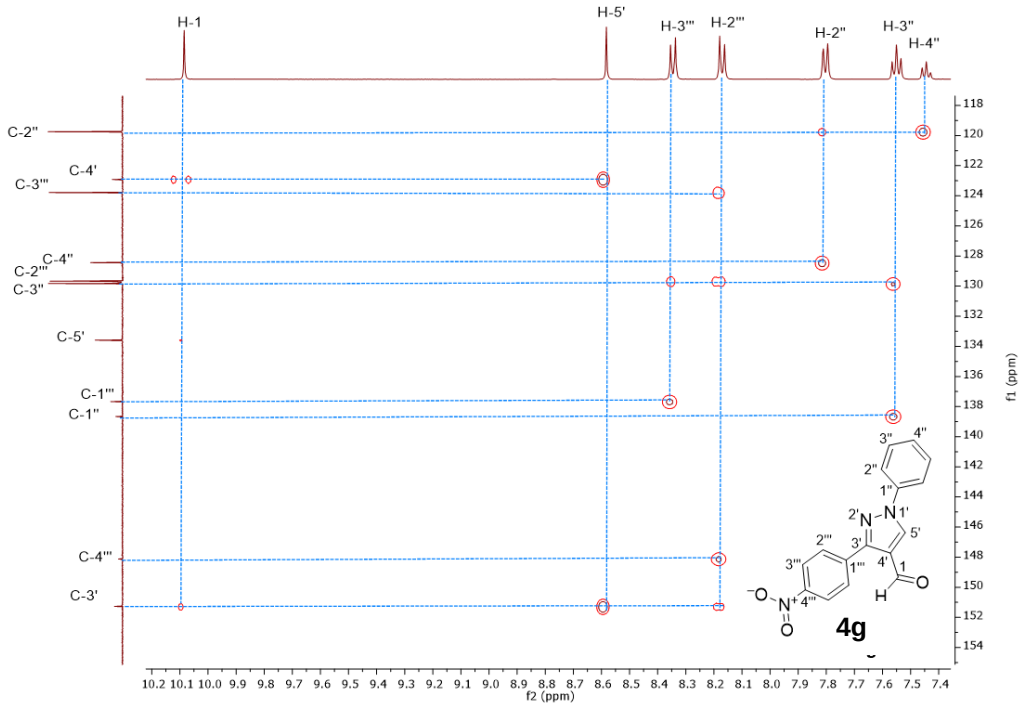
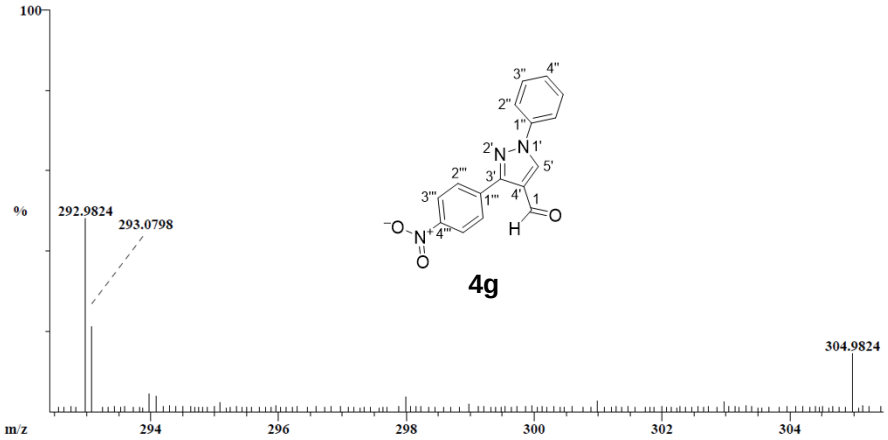


Figure S103. HMBC experiment of 3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4g**.



Selected Isotopes : $H_{0-11}C_{0-16}N_{0-3}O_{0-3}$ Error Limit : 5 ppm Unsaturation Limits : 0 to 50

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
293.0798	21.3%	$C_{16}H_{11}N_3O_3$	293.0800	-0.8	13.0

Figure S104. HRMS of 3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4g**.

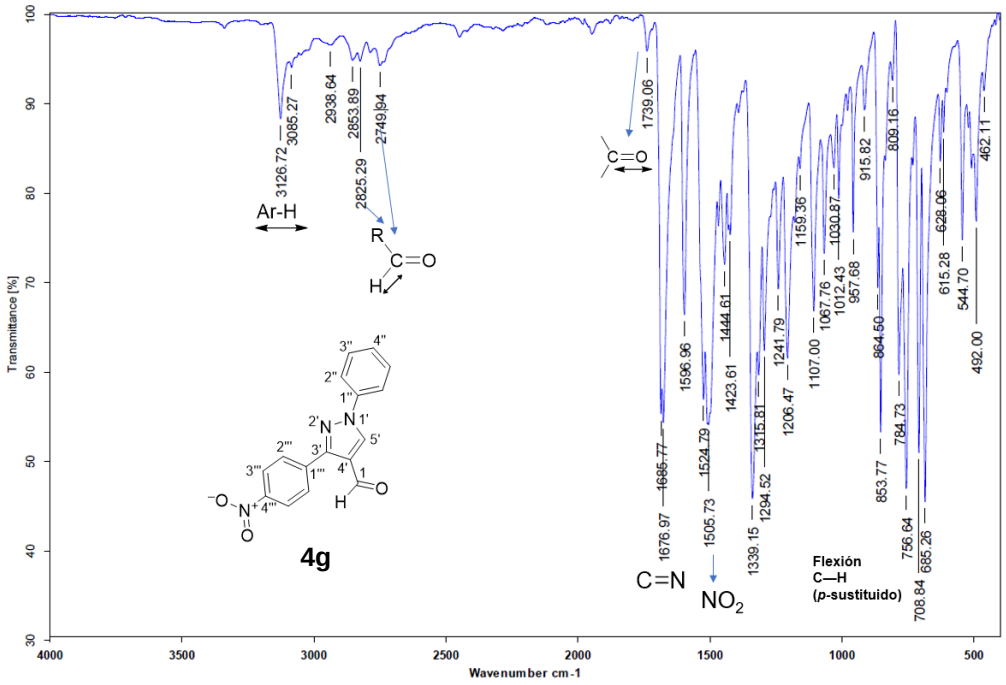


Figure S105. FT-IR of 3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4g**.

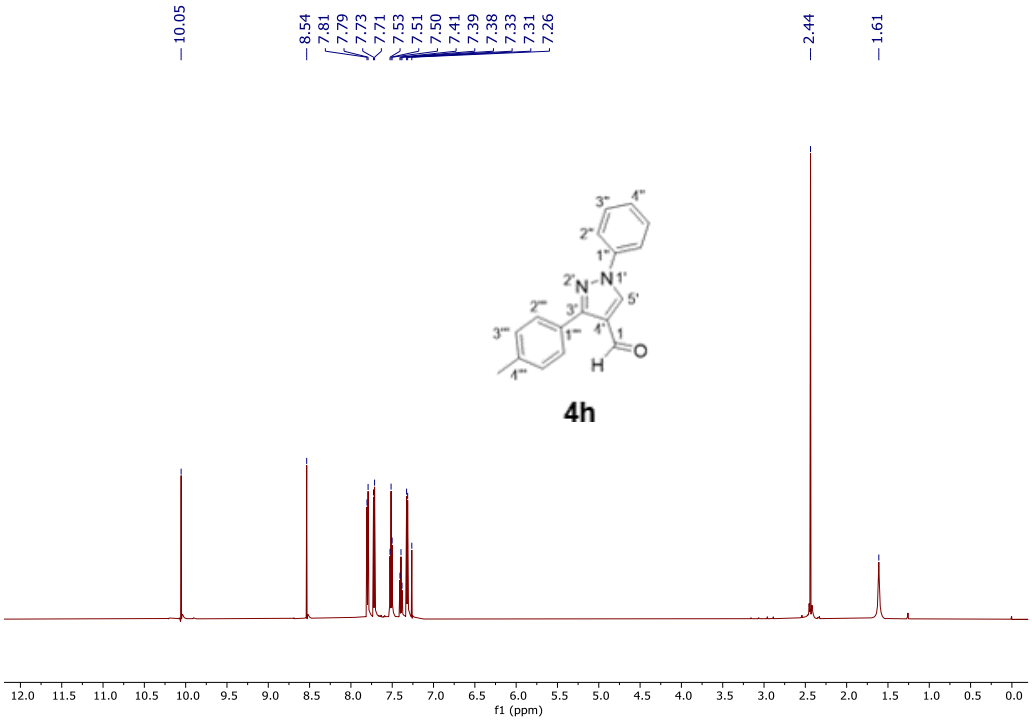


Figure S106. ^{1}H NMR (500 MHz, $CDCl_3$) of 1-phenyl-3-(*p*-tolyl)-1*H*-pyrazole-4-carbaldehyde **4h**.

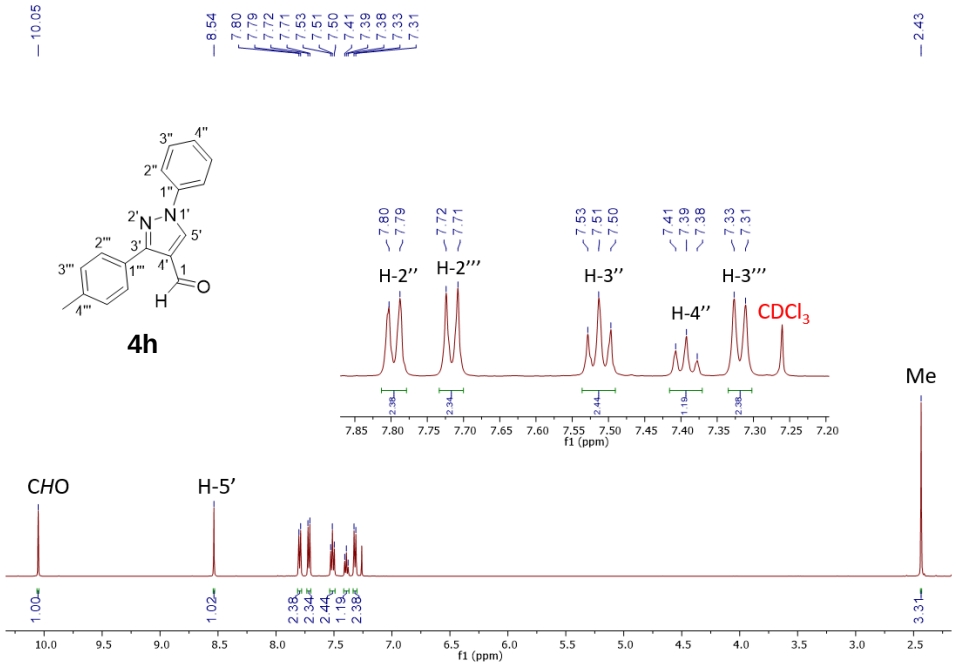


Figure S107. Expansion of ^{1}H NMR (500 MHz, $CDCl_3$) of 1-phenyl-3-(*p*-tolyl)-1*H*-pyrazole-4-carbaldehyde **4h**.

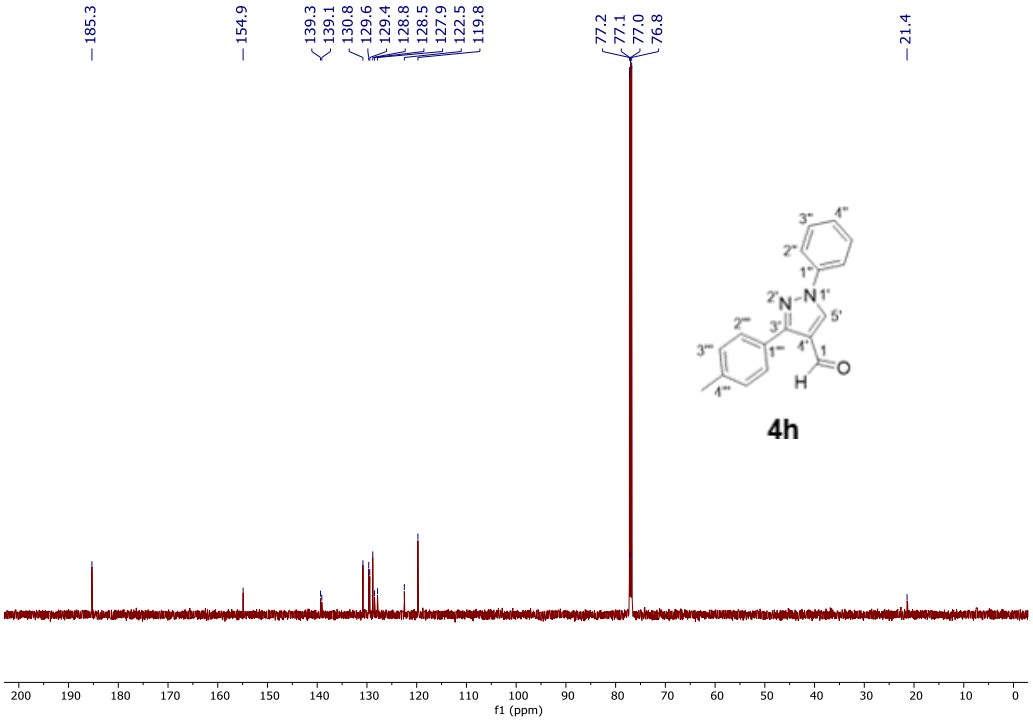


Figure S108. ^{13}C NMR (125 MHz, $CDCl_3$) of 1-phenyl-3-(*p*-tolyl)-1*H*-pyrazole-4-carbaldehyde **4h**.

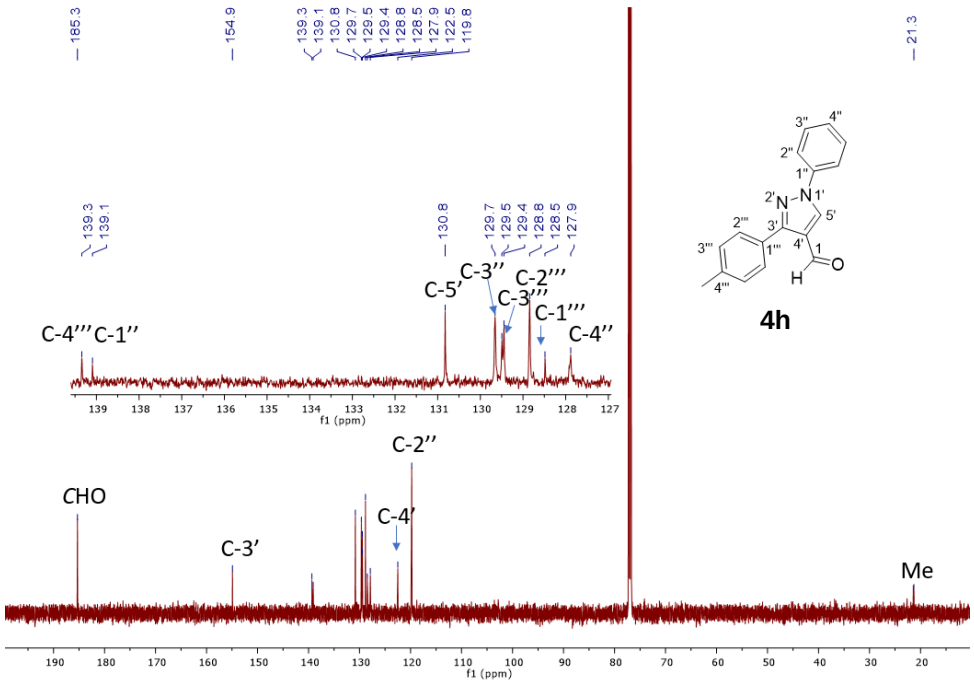


Figure S109. Expansion of ^{13}C NMR (125 MHz, $CDCl_3$) of 1-phenyl-3-(*p*-tolyl)-1*H*-pyrazole-4-carbaldehyde **4h**.

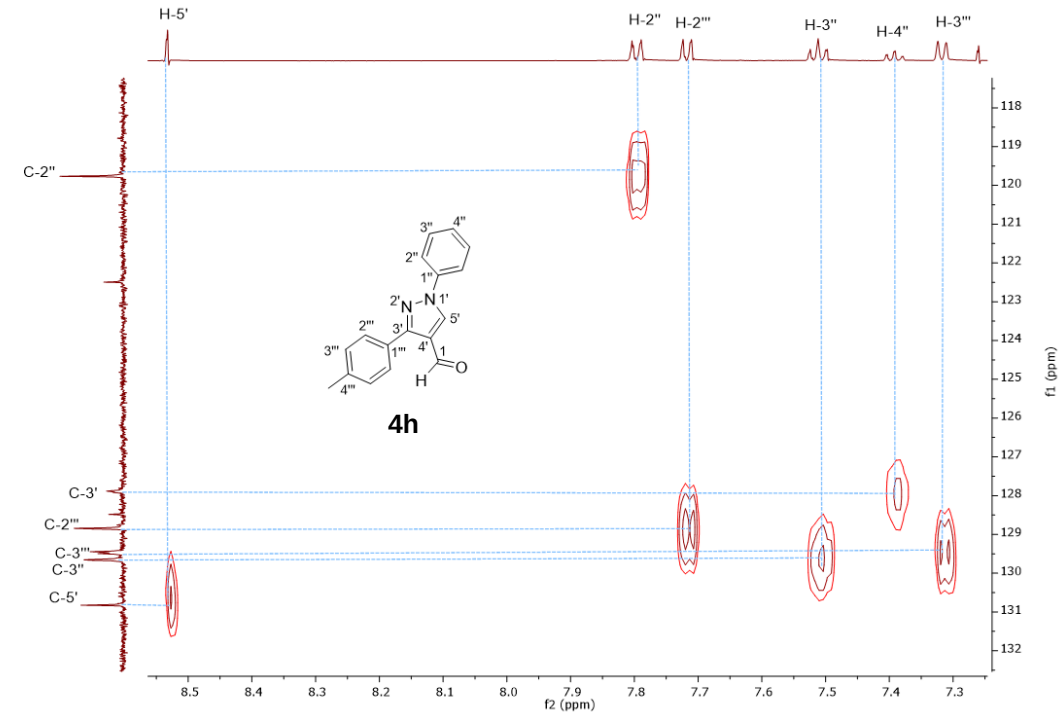


Figure S110. Expansion of HSQC experiment of 1-phenyl-3-(*p*-tolyl)-1*H*-pyrazole-4-carbaldehyde **4h**.

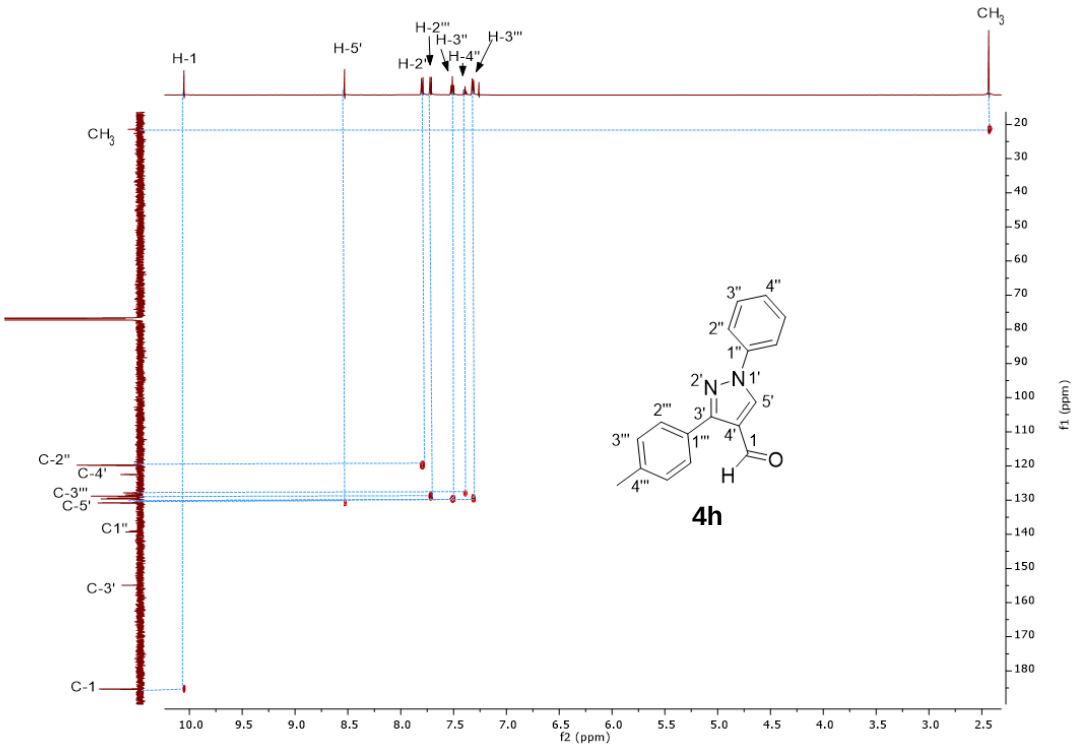


Figure S111. HSQC experiment of 1-phenyl-3-(*p*-tolyl)-1*H*-pyrazole-4-carbaldehyde **4h**.

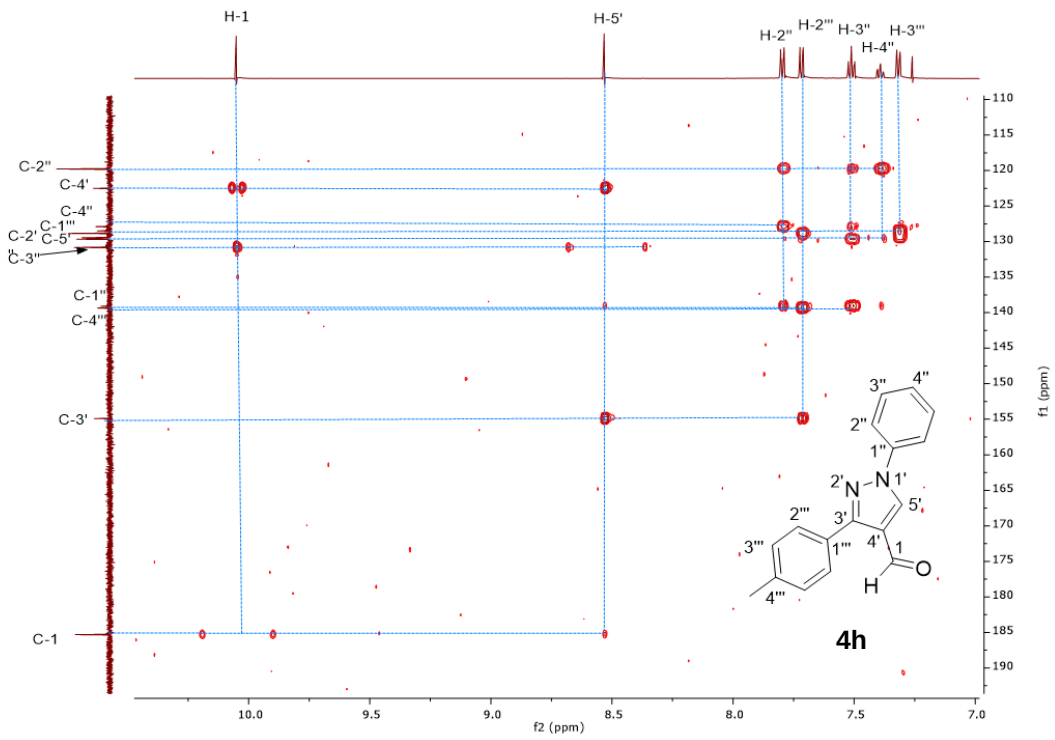
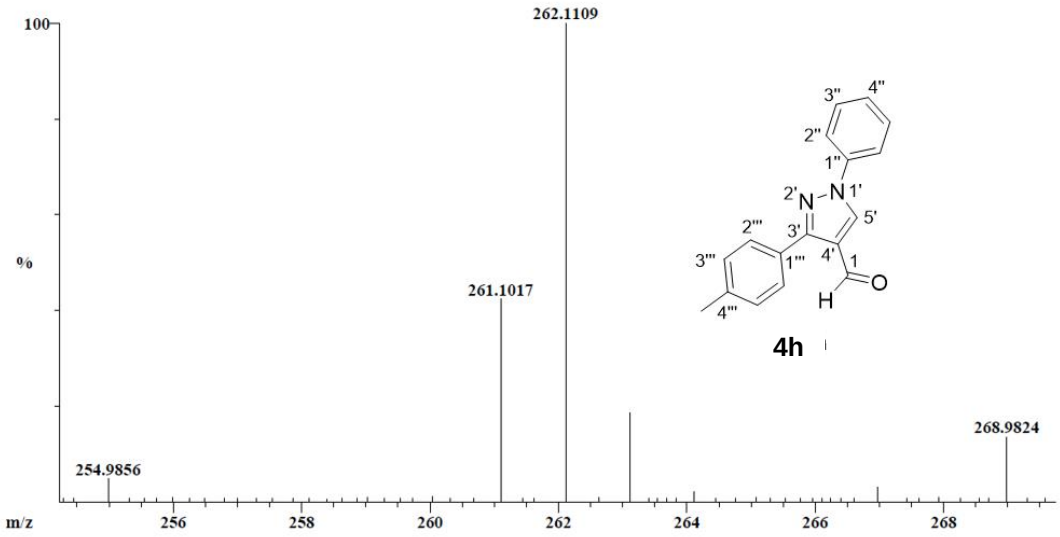


Figure S112. HMBC experiment of 1-phenyl-3-(*p*-tolyl)-1*H*-pyrazole-4-carbaldehyde **4h**.



Selected Isotopes : $H_{0-14}C_{0-17}N_{0-2}O_{0-1}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
262.1109	100.0%	$C_{17}H_{14}N_2O$	262.1106	1.1	12.0

Figure S113. HRMS of 1-phenyl-3-(*p*-tolyl)-1*H*-pyrazole-4-carbaldehyde **4h**.

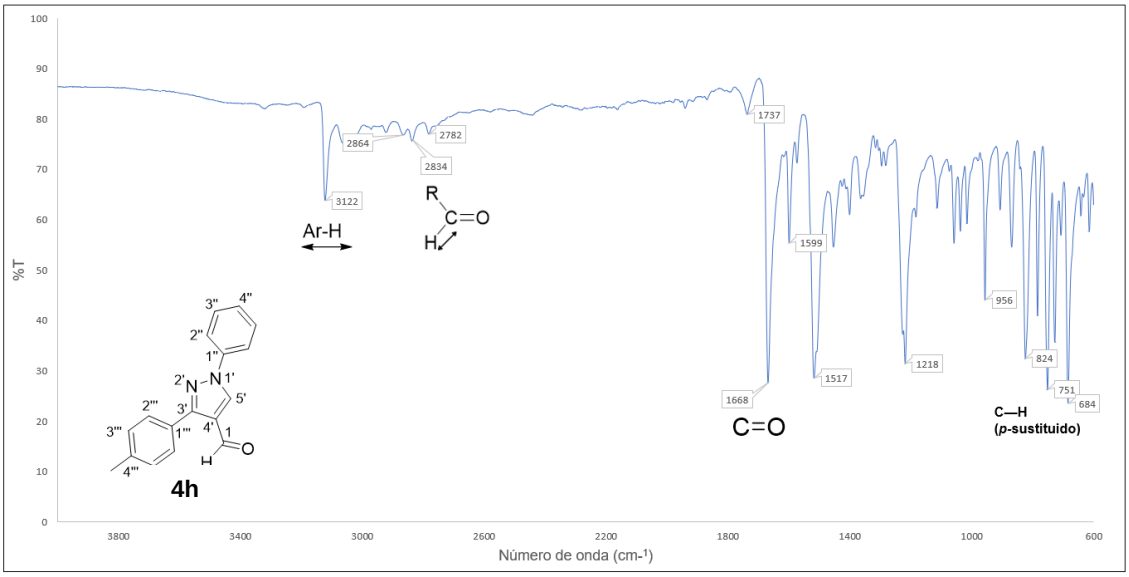


Figure S114. FT-IR of 1-phenyl-3-(*p*-tolyl)-1*H*-pyrazole-4-carbaldehyde **4h**.

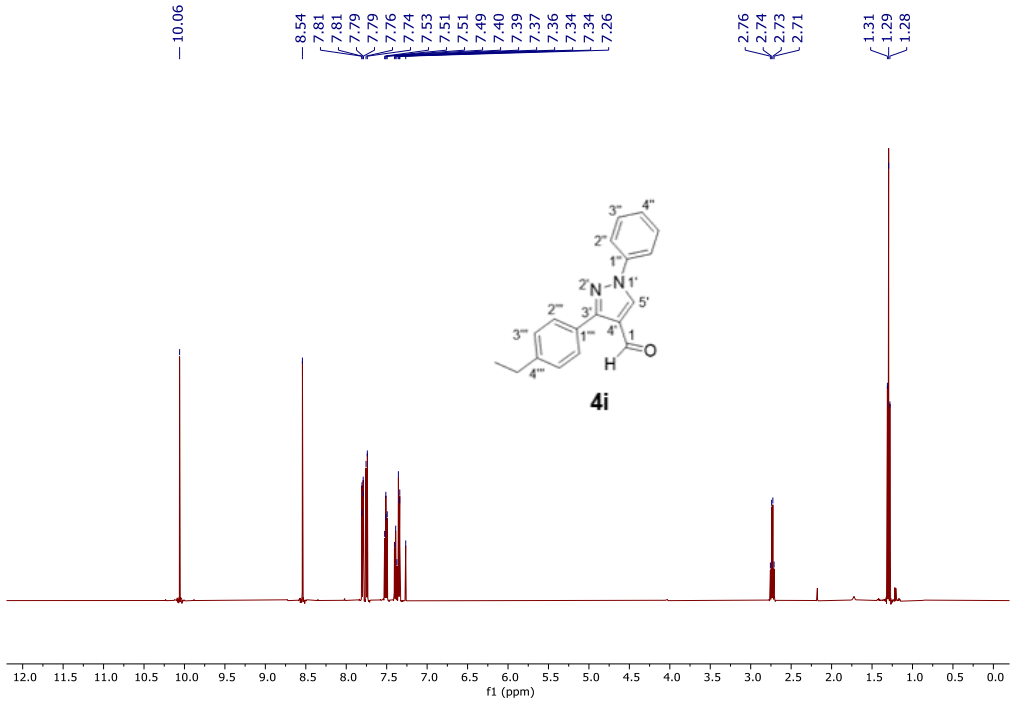


Figure S115. ^{1}H NMR (500 MHz, $CDCl_3$) of 3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4i**.

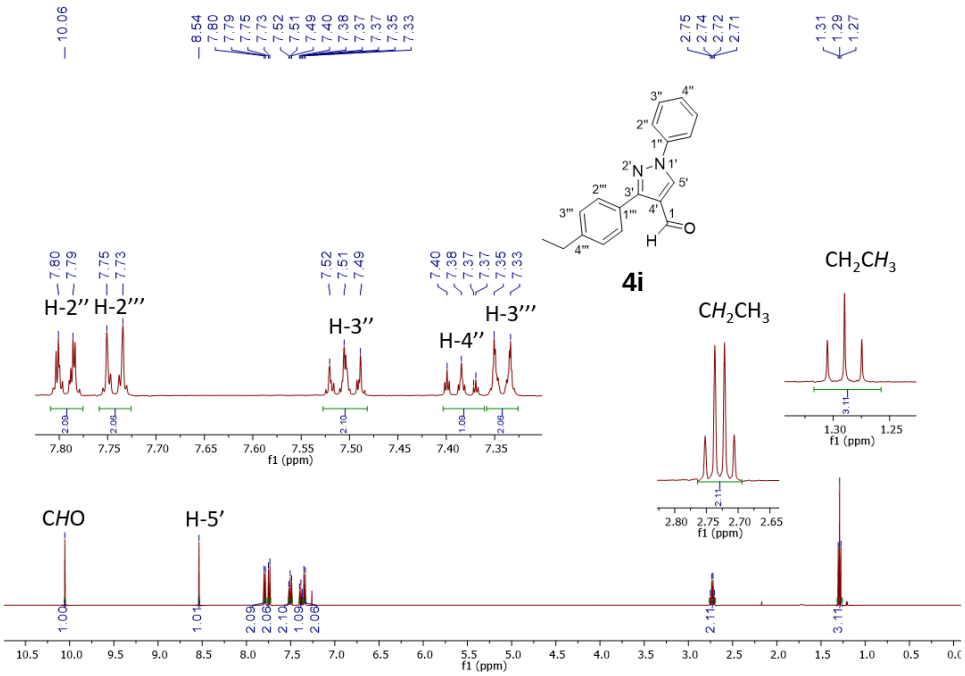


Figure S116. Expansion of ^{1}H NMR (500 MHz, $CDCl_3$) of 3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4i**.

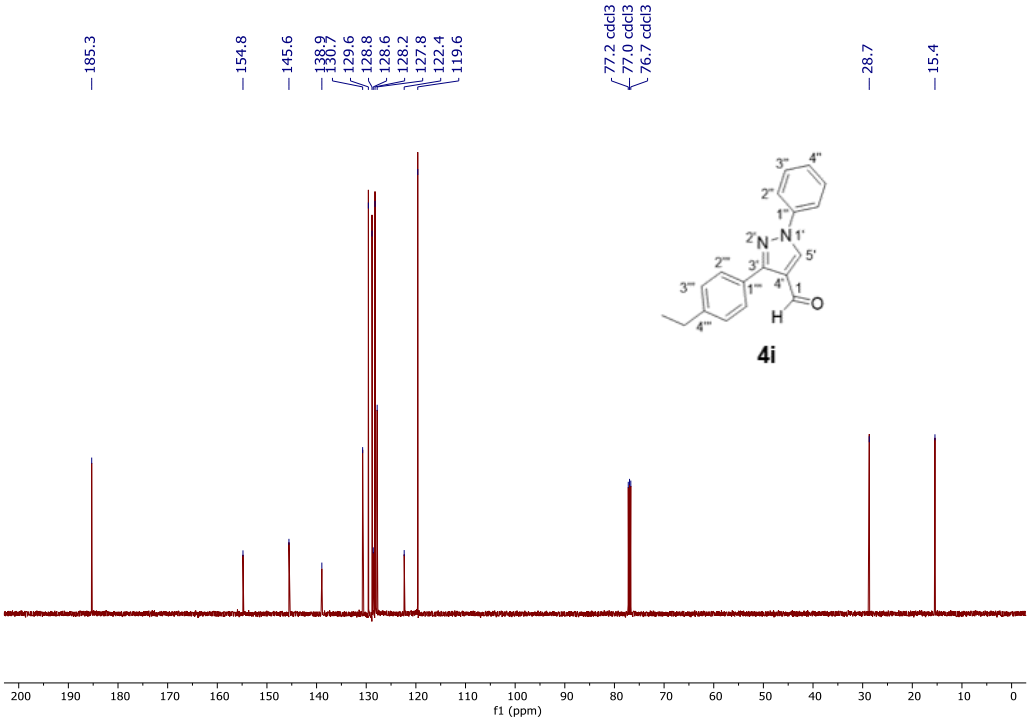


Figure S117. ^{13}C NMR (125 MHz, $CDCl_3$) of 3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4i**.

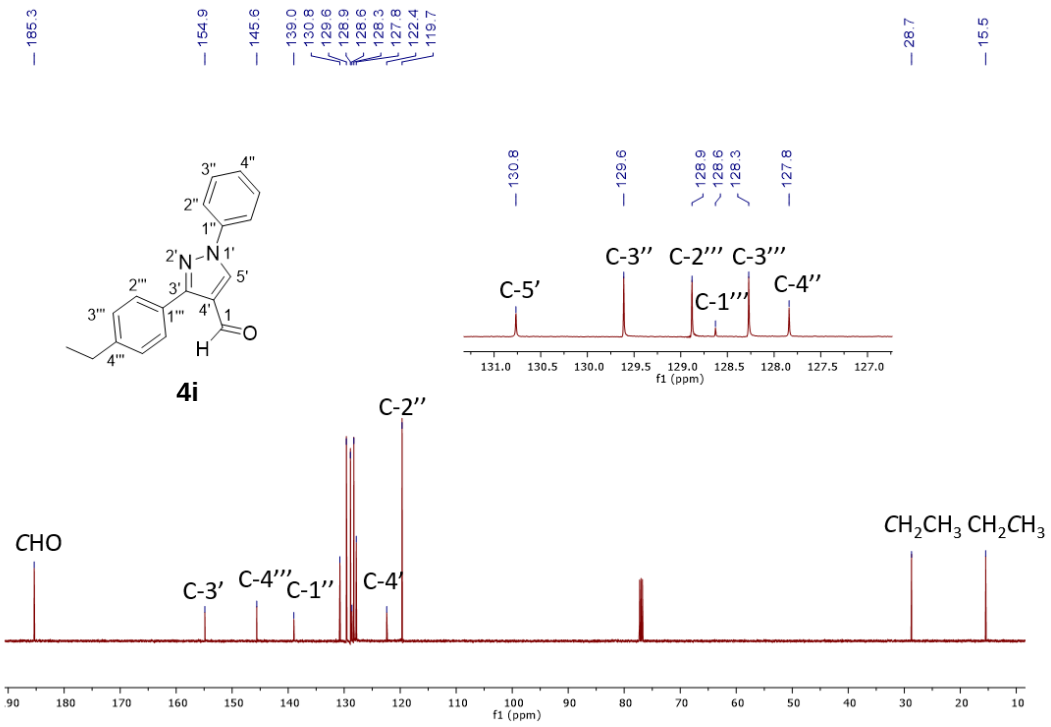


Figure S118. Expansion of ^{13}C NMR (125 MHz, $CDCl_3$) of 3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4i**.

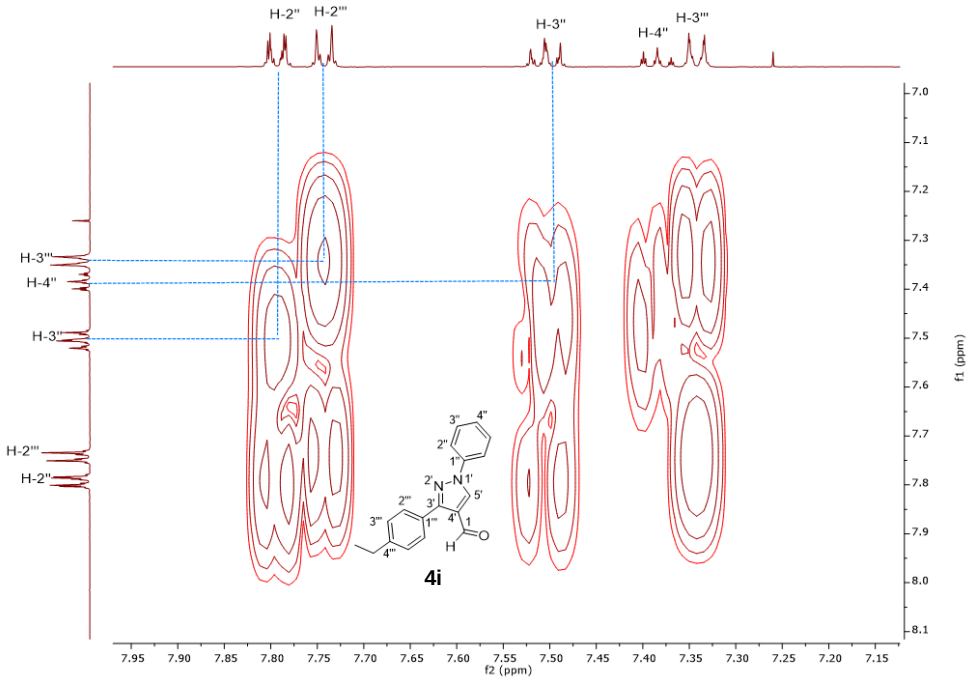


Figure S119. COSY experiment of 3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4i**.

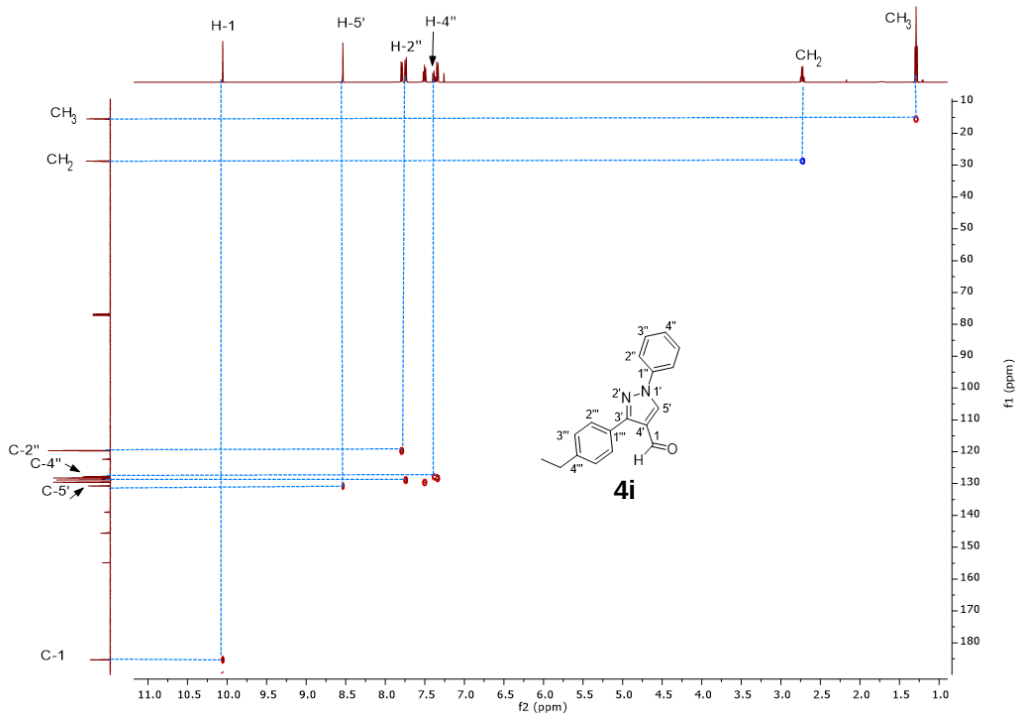


Figure S120. HSQC experiment of 3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4i**.

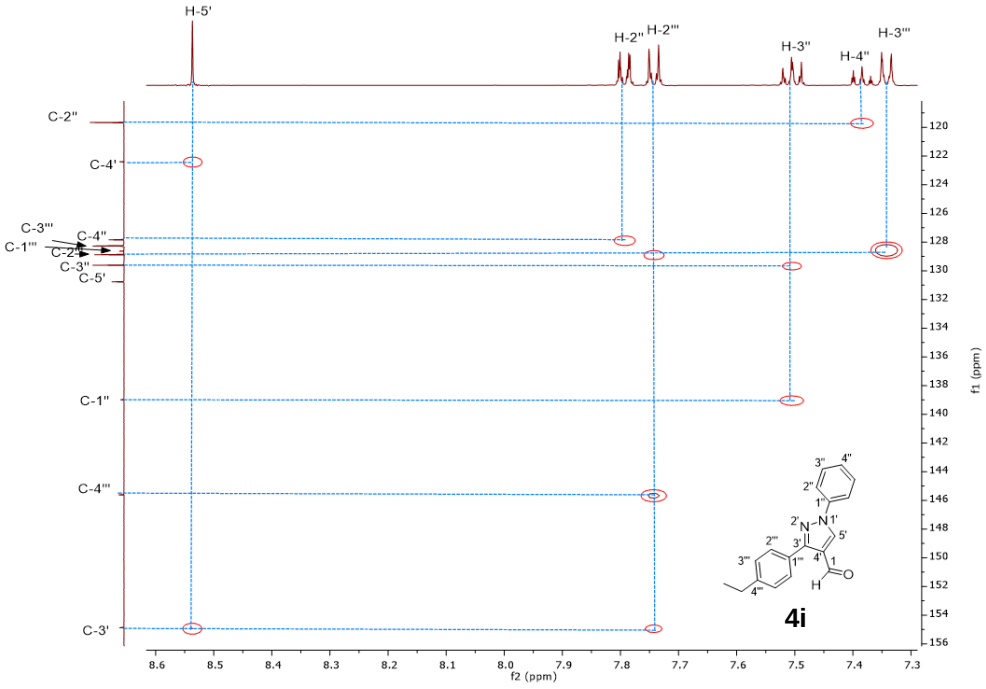


Figure S121. HMBC experiment of 3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4i**.

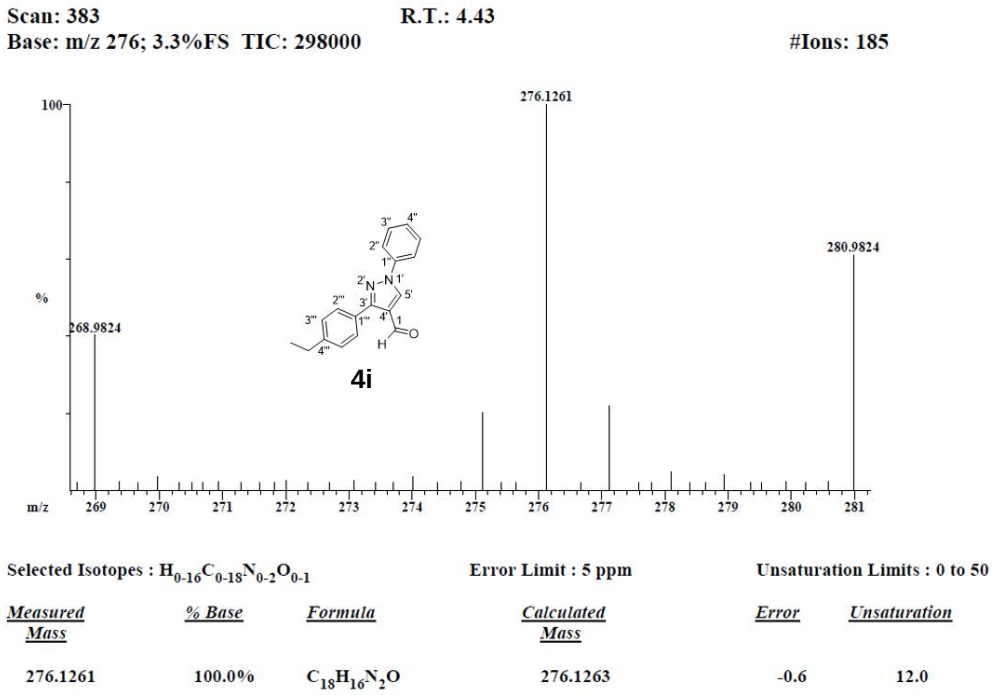


Figure S122. HRMS of 3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4i**.

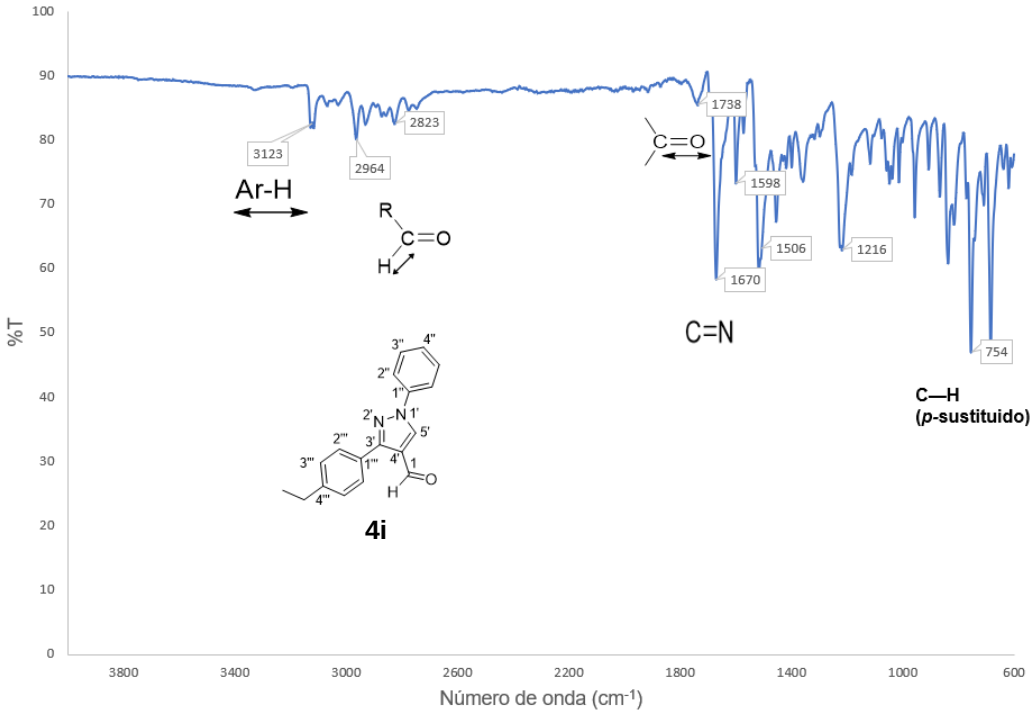


Figure S123. FT-IR of 3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4i**.

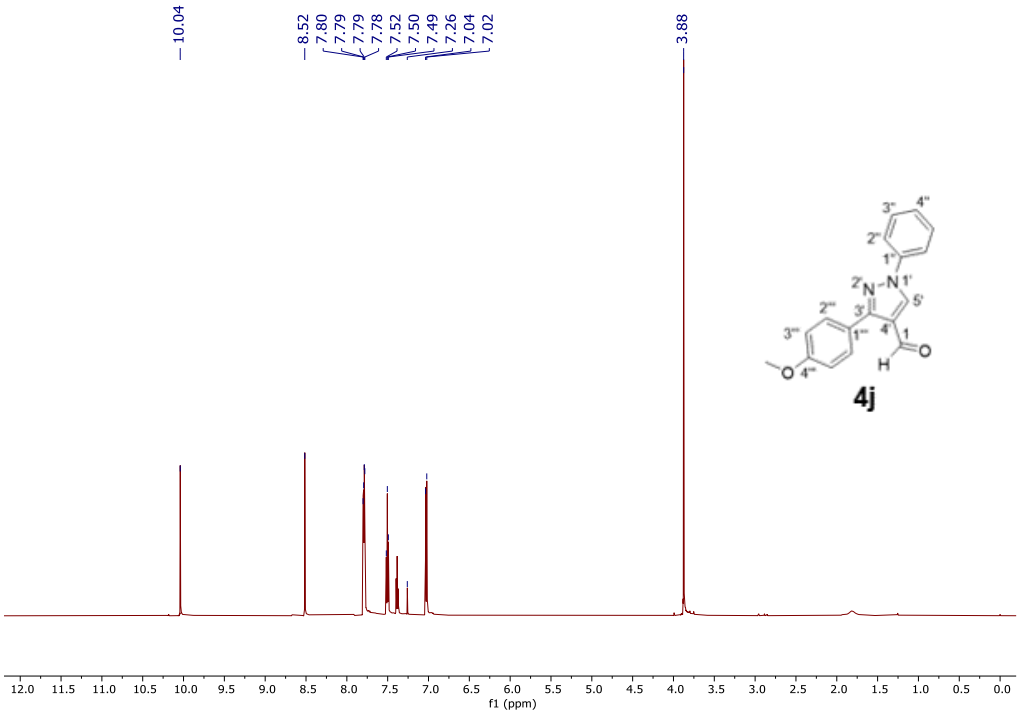


Figure S124. ^{1}H NMR (500 MHz, $CDCl_3$) of 3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4j**.

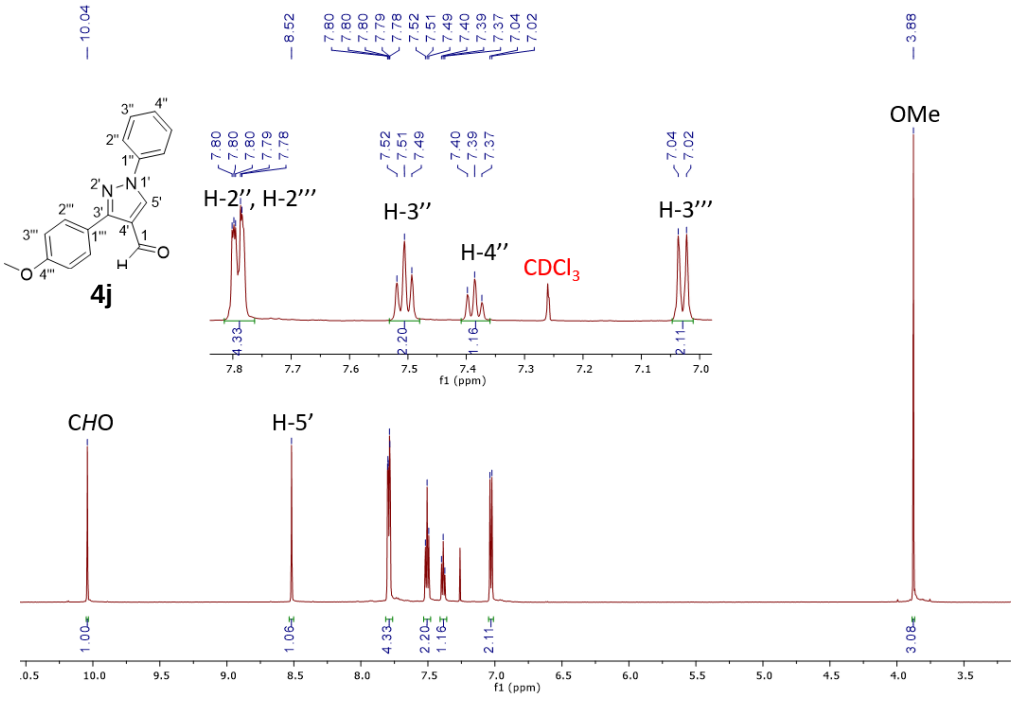


Figure S125. Expansion of ^{1}H NMR (500 MHz, $CDCl_3$) of 3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4j**.

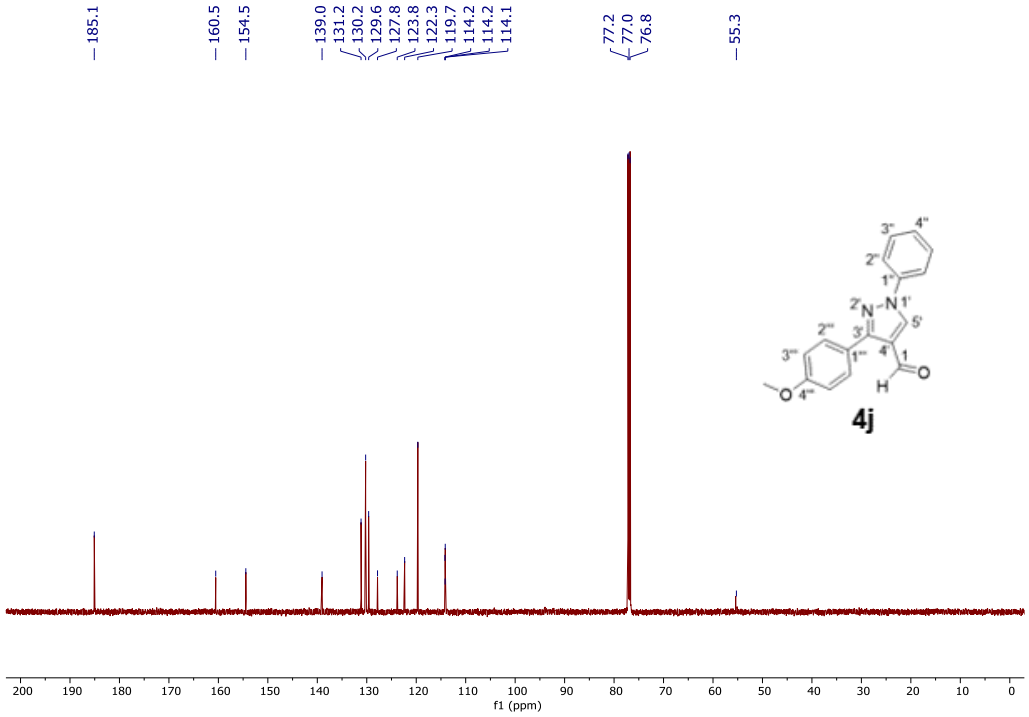


Figure S126. ^{13}C NMR (125 MHz, $CDCl_3$) of 3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4j**.

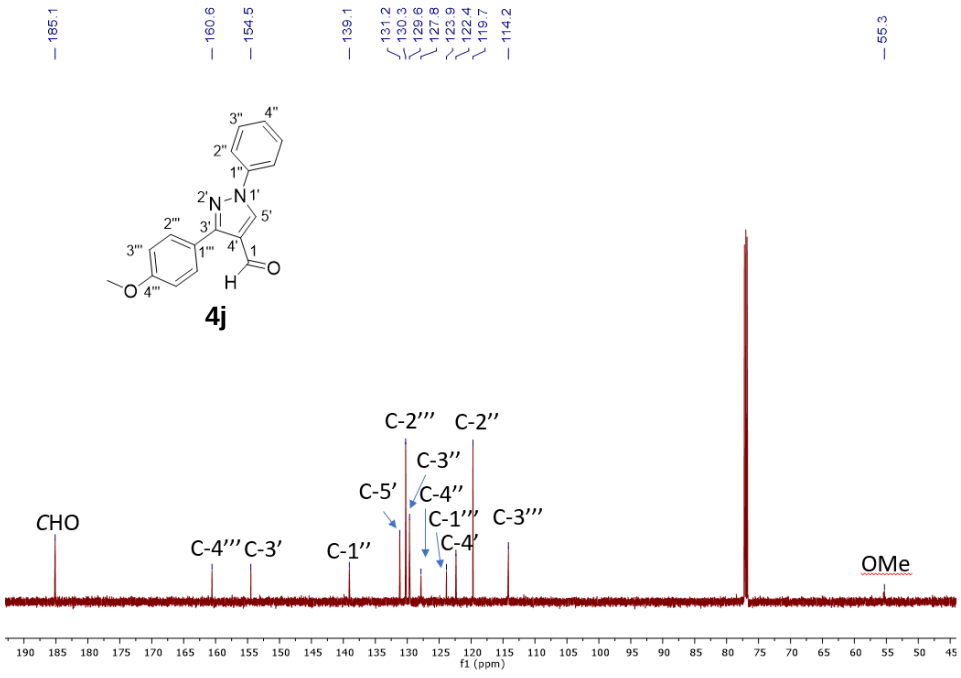


Figure S127. Expansion of ^{13}C NMR (125 MHz, $CDCl_3$) of 3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4j**.

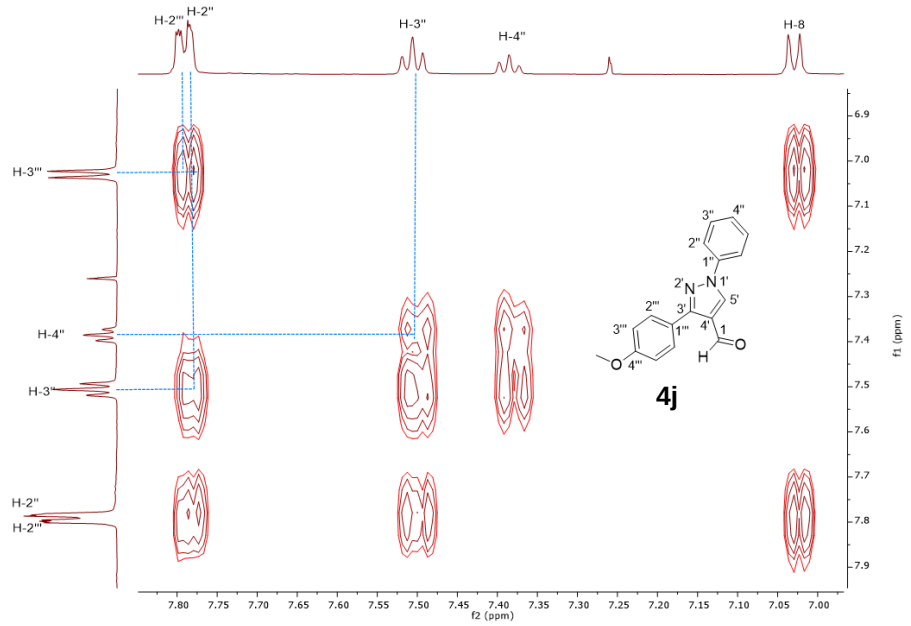


Figure S128. COSY experiment of 3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4j**.

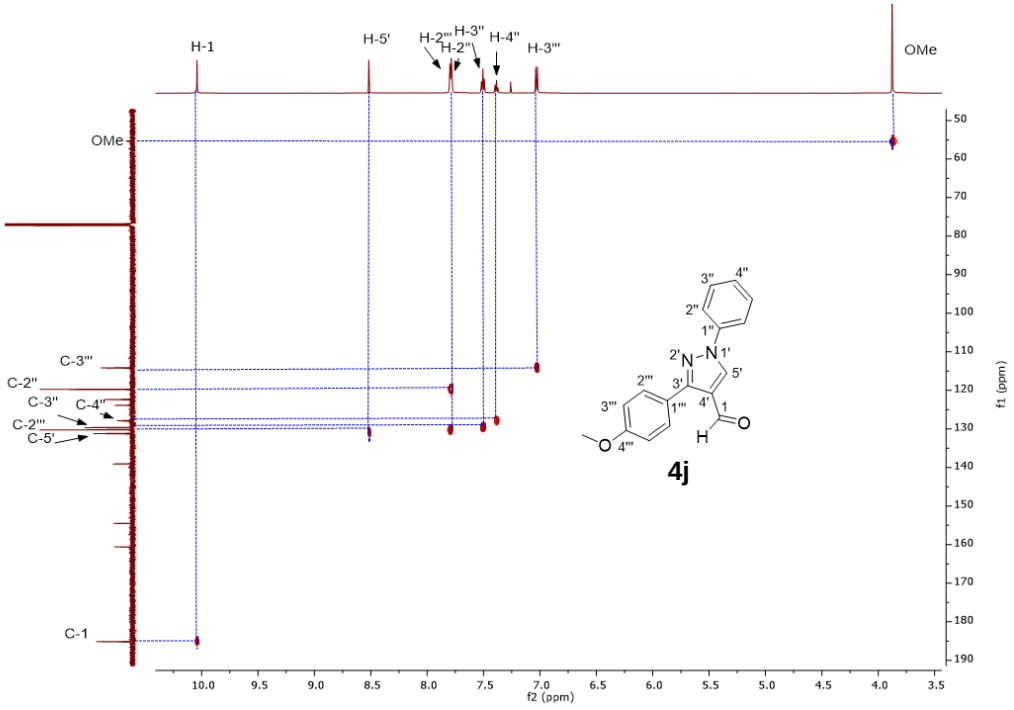


Figure S129. HSQC experiment of 3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4j**.

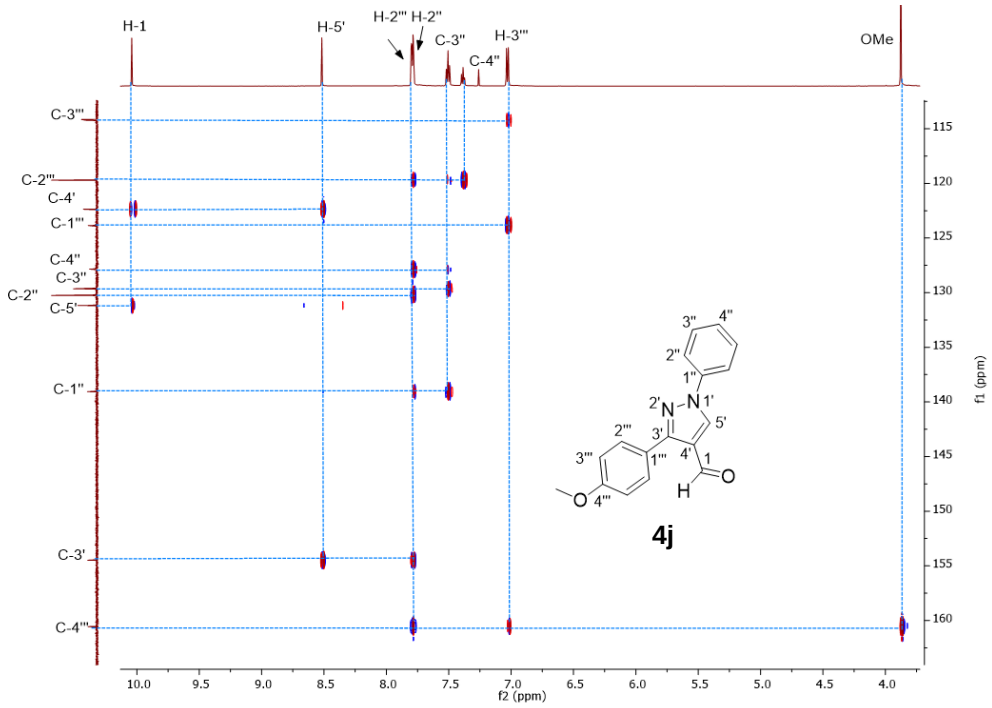
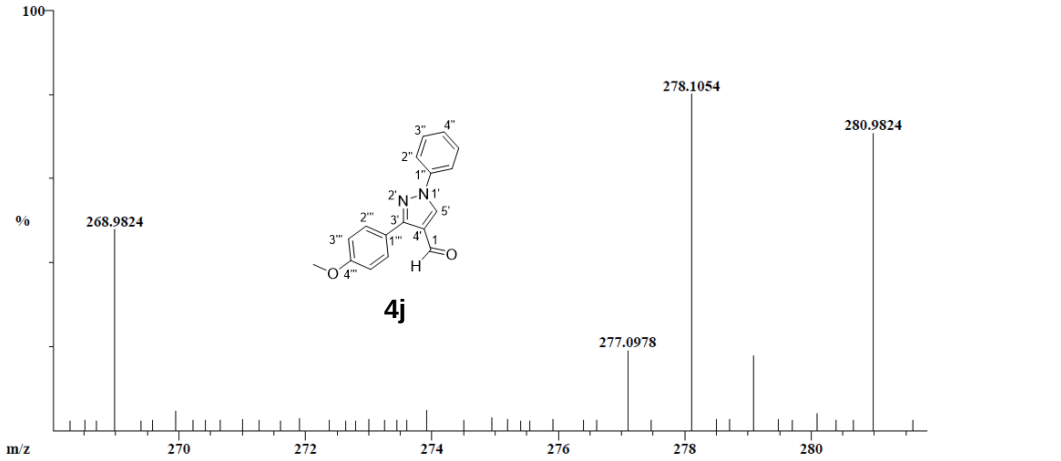


Figure S130. HMBC experiment of 3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4j**.



Selected Isotopes : $H_{0-14}C_{0-17}N_{0-2}O_{0-2}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
278.1054	80.0%	$C_{17}H_{14}N_2O_2$	278.1055	-0.5	12.0

Figure S131. HRMS of 3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4j**.

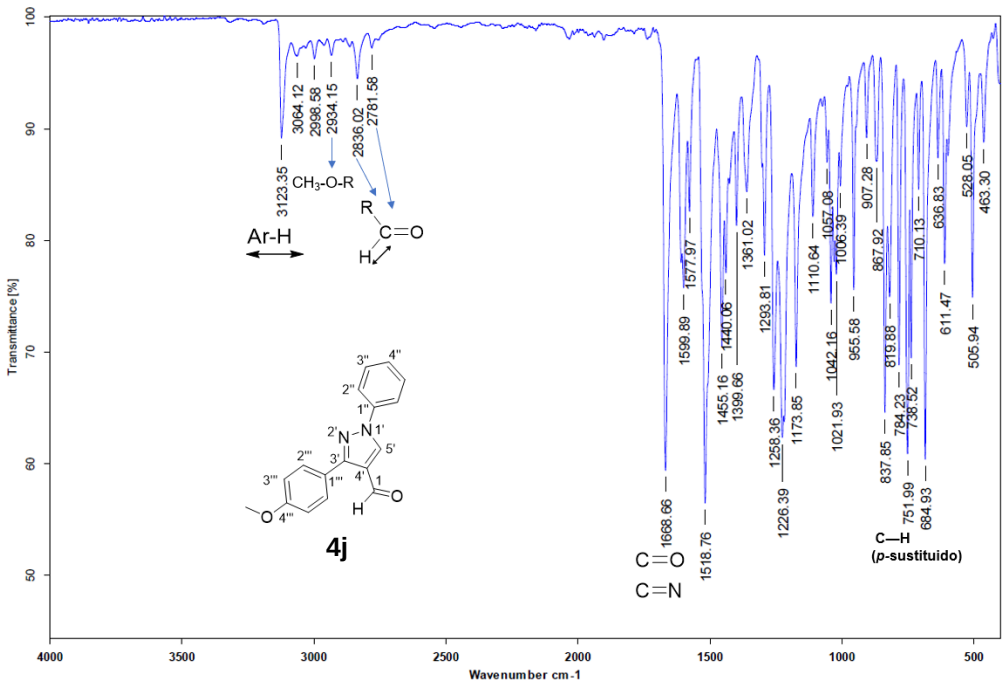


Figure S132. FT-IR of 3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazole-4-carbaldehyde **4j**.

Characterization of series **6a-j**

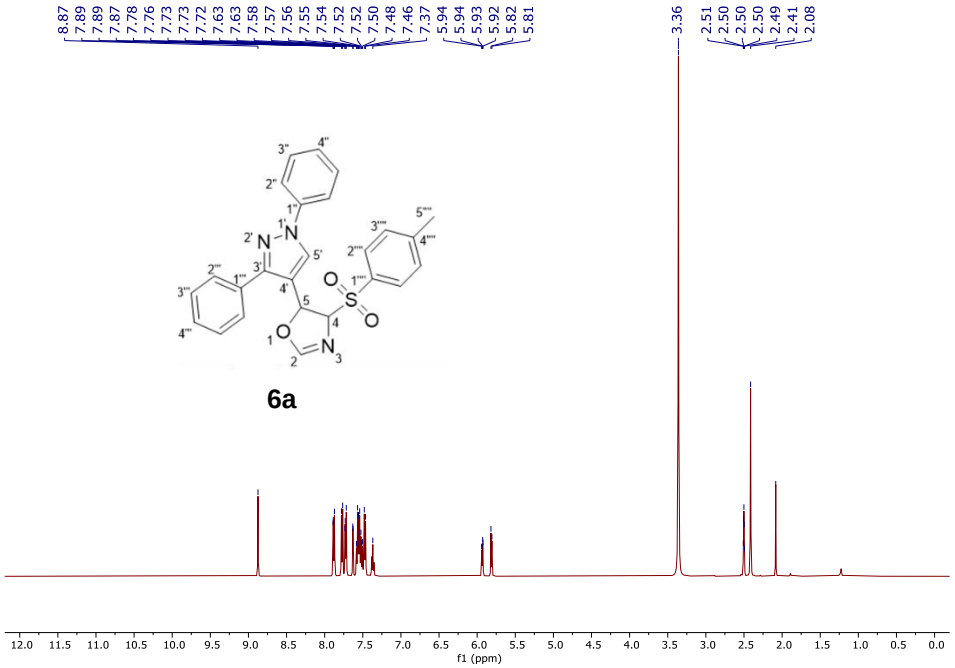


Figure S133. ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6a**.

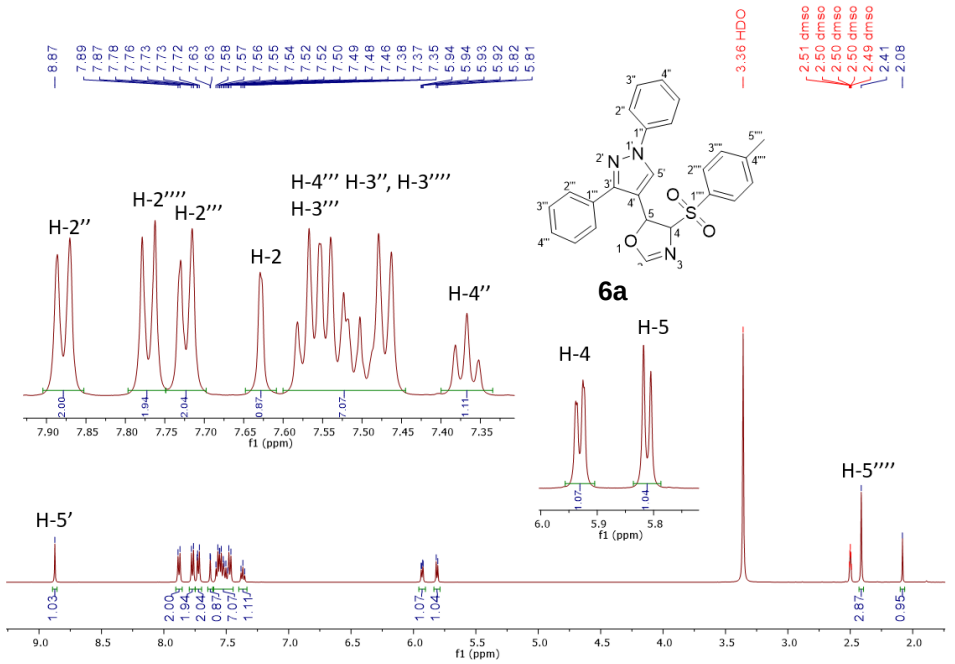


Figure S134. Expansion of ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6a**.

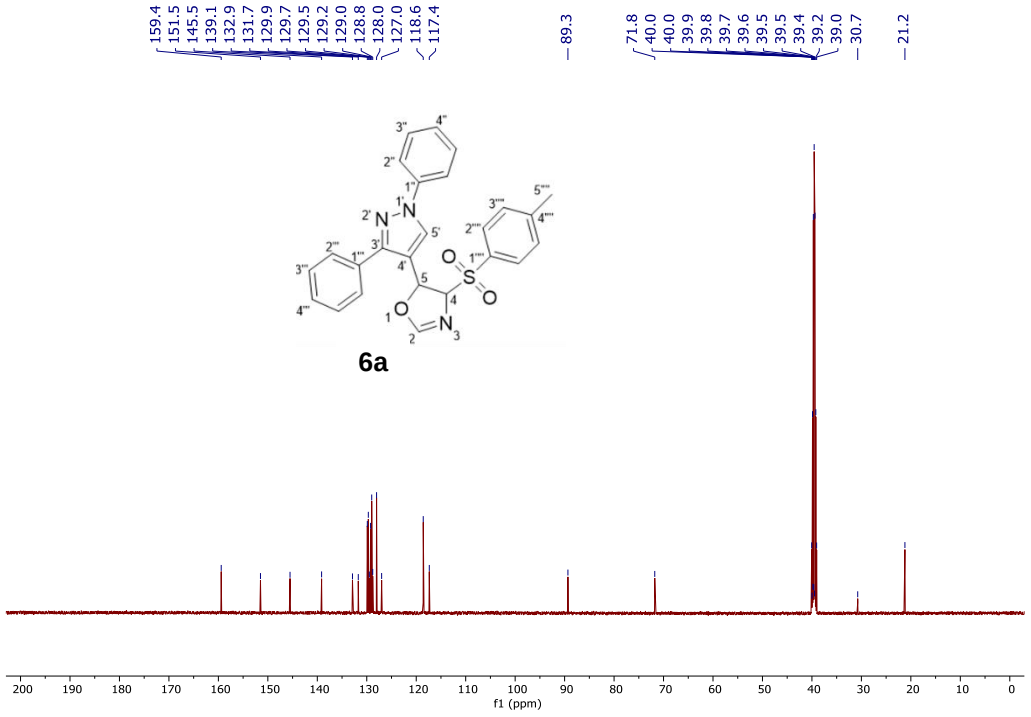


Figure S135. ^{13}C NMR (125 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6a**.

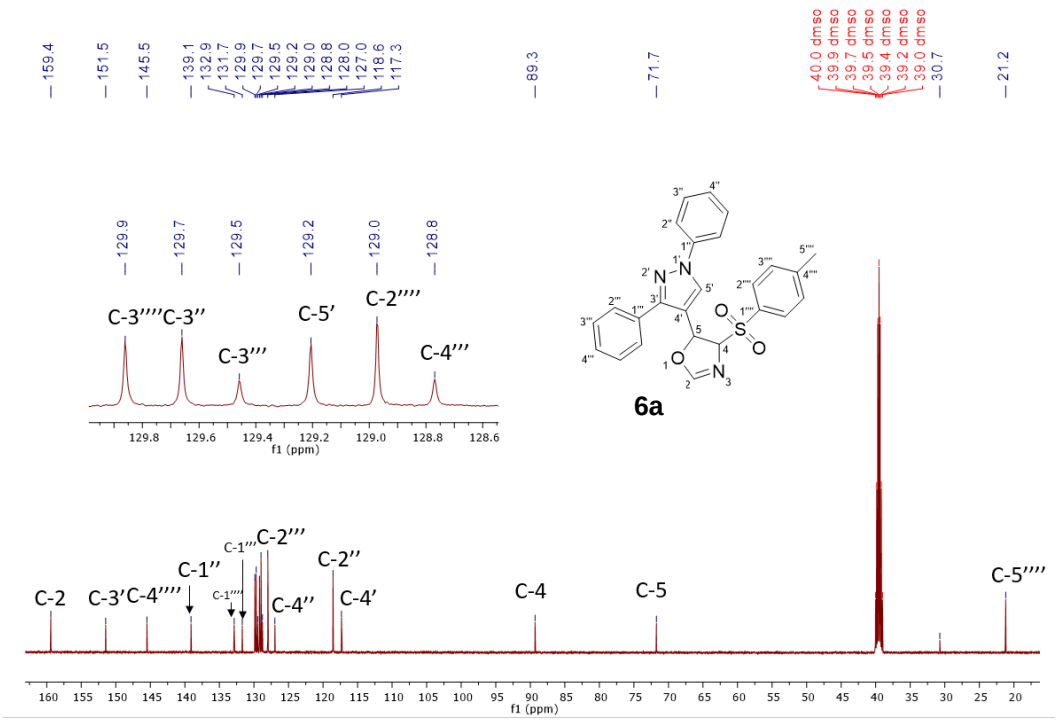


Figure S136. Expansion of ^{13}C NMR (125 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6a**.

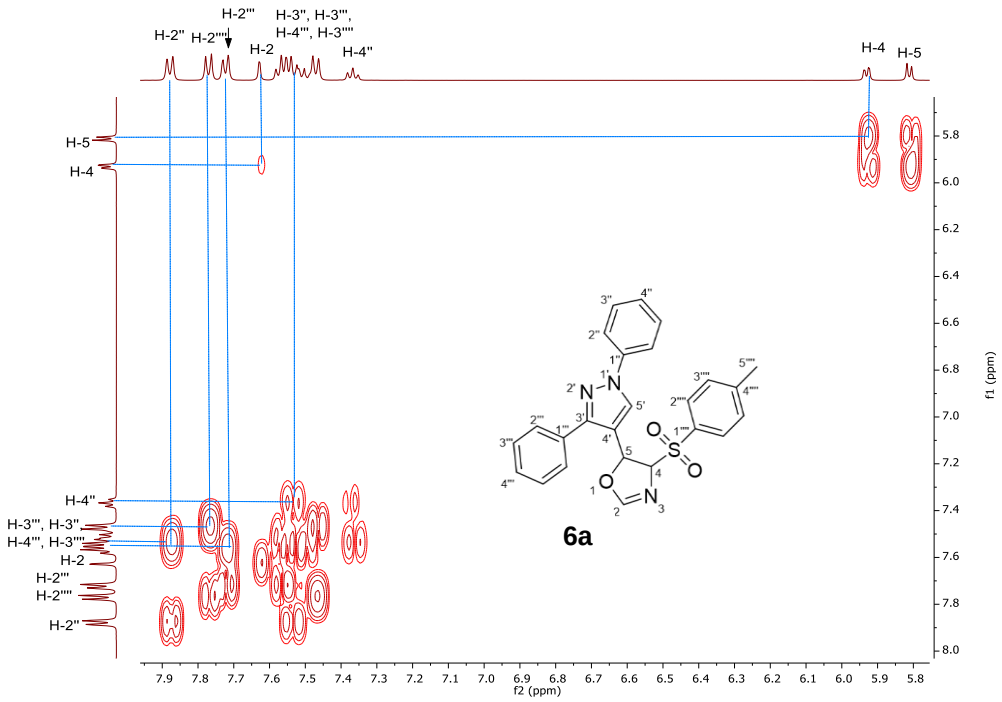


Figure S137. COSY experiment of (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6a**.

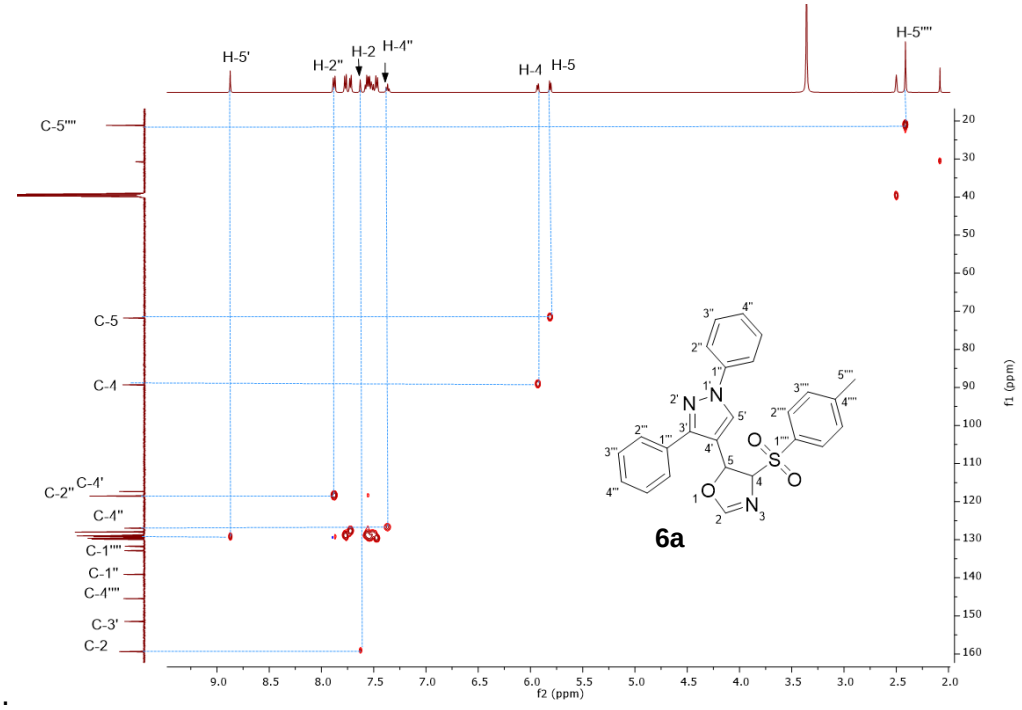


Figure S138. HSQC experiment of (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6a**.

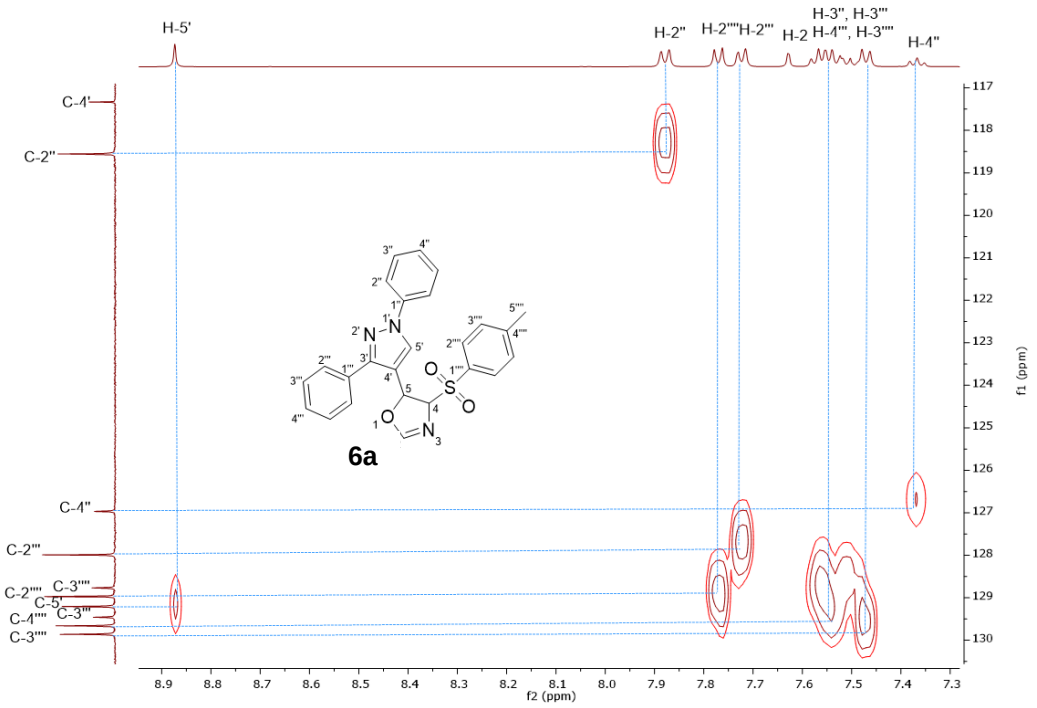


Figure S139. Expansion of HSQC experiment of (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6a**.

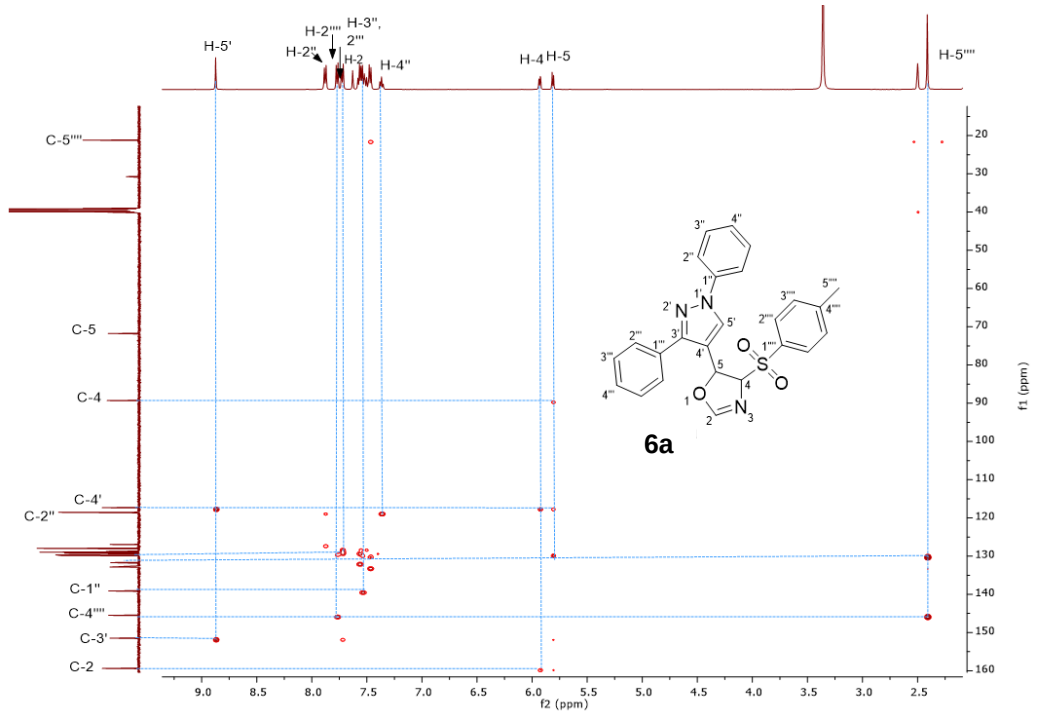


Figure S140. HMBC experiment of (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6a**.

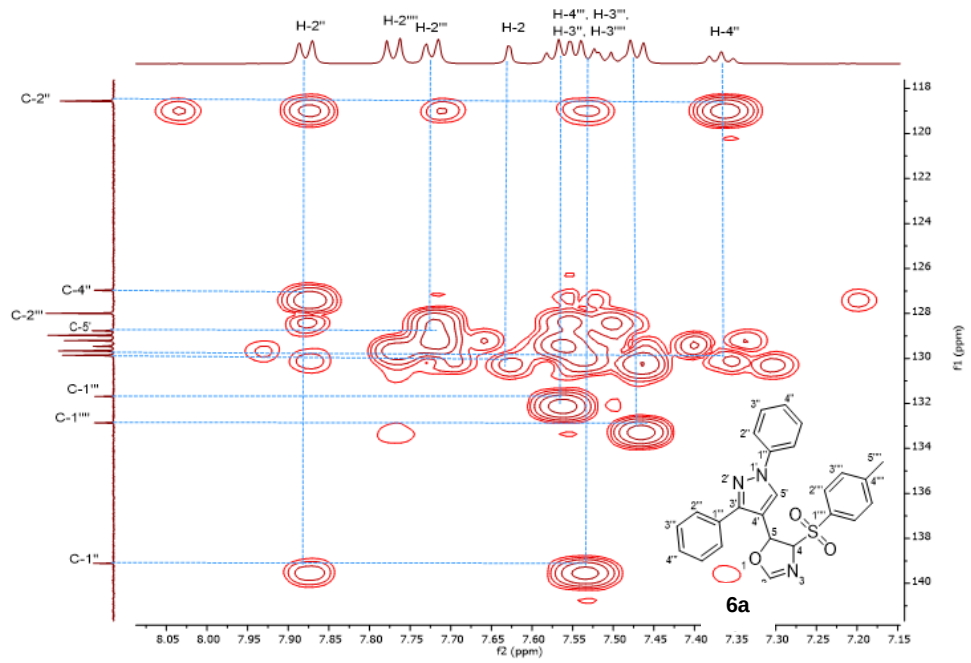
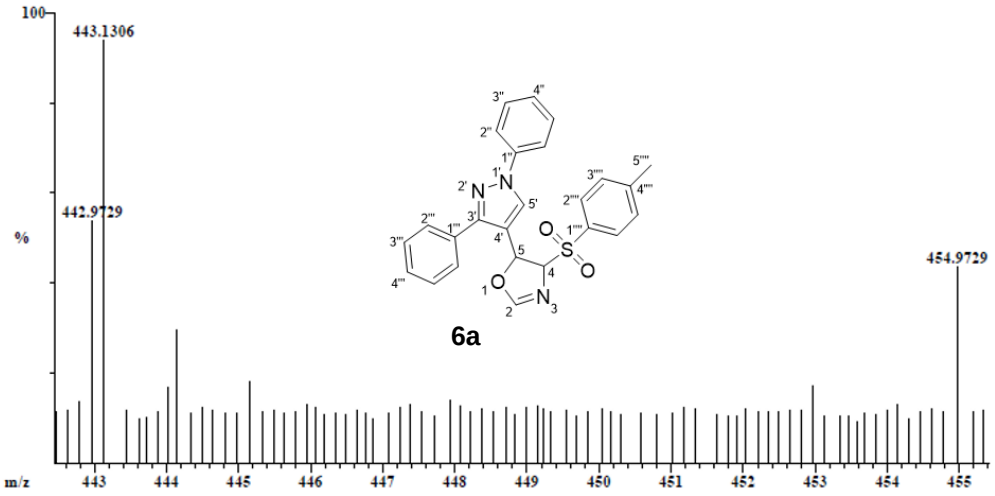


Figure S141. Expansion of HMBC experiment of (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6a**.



Selected Isotopes : $H_{0-21}C_{0-25}N_{0-3}O_{0-3}S_{0-1}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
443.1306	93.9%	$C_{25}H_{21}N_3O_3S$	443.1304	0.5	17.0

Figure S142. HRMS of (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6a**.

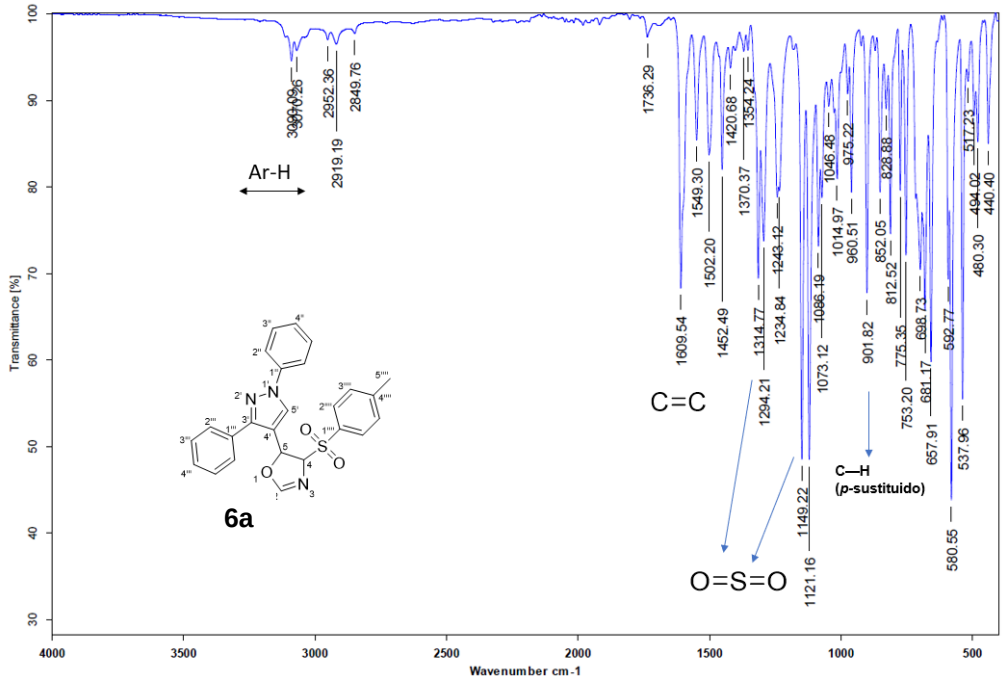


Figure S143. FT-IR of (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6a**.

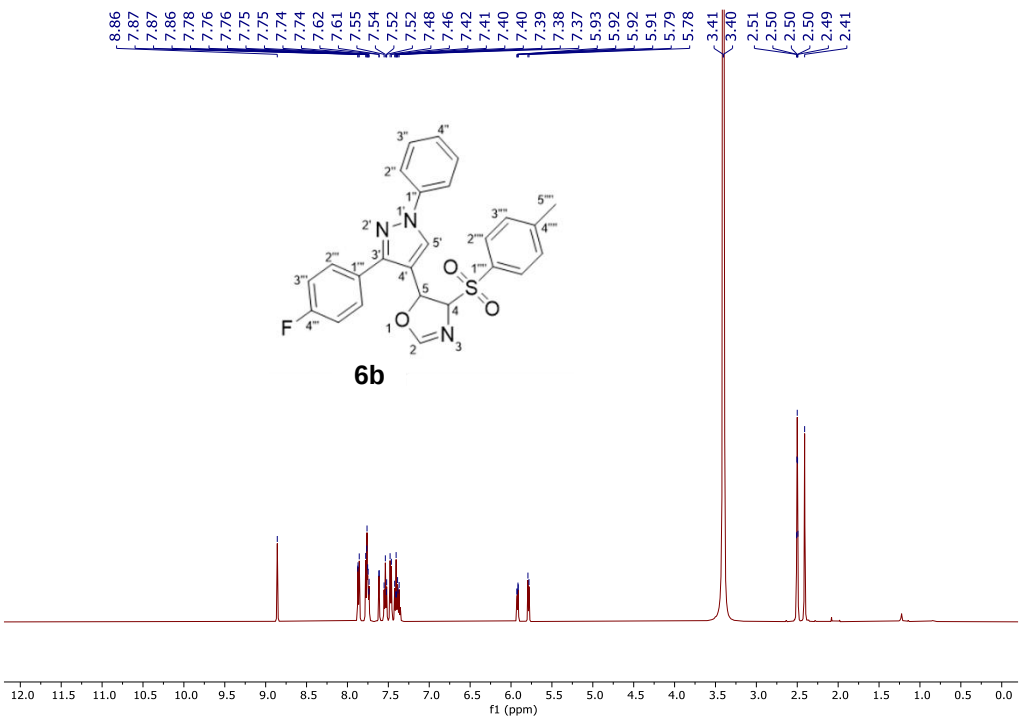


Figure S144. ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6b**.

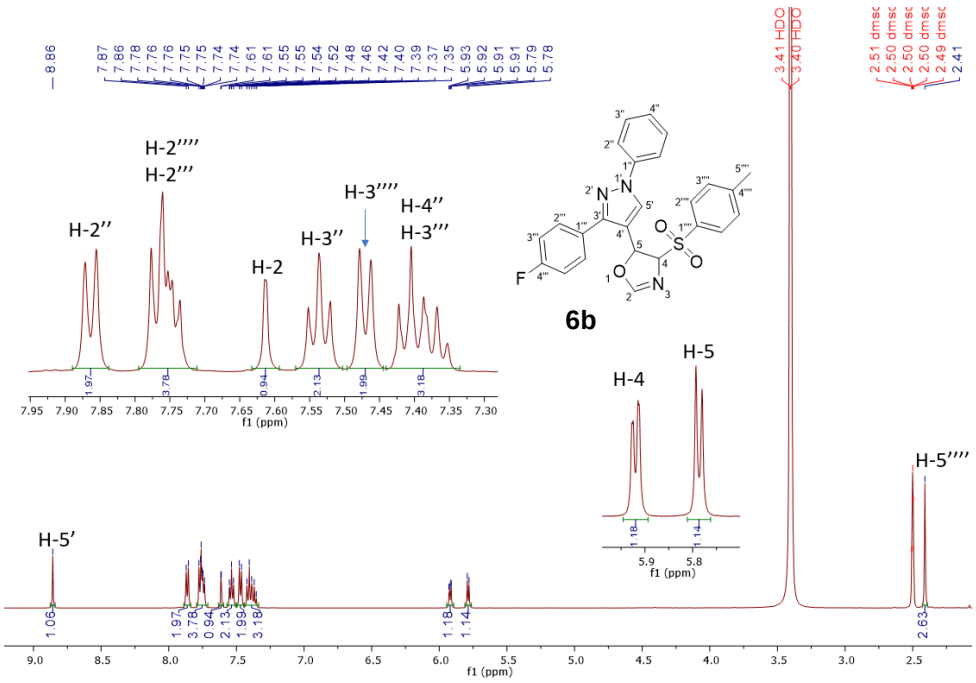


Figure S145. Expansion of ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6b**.

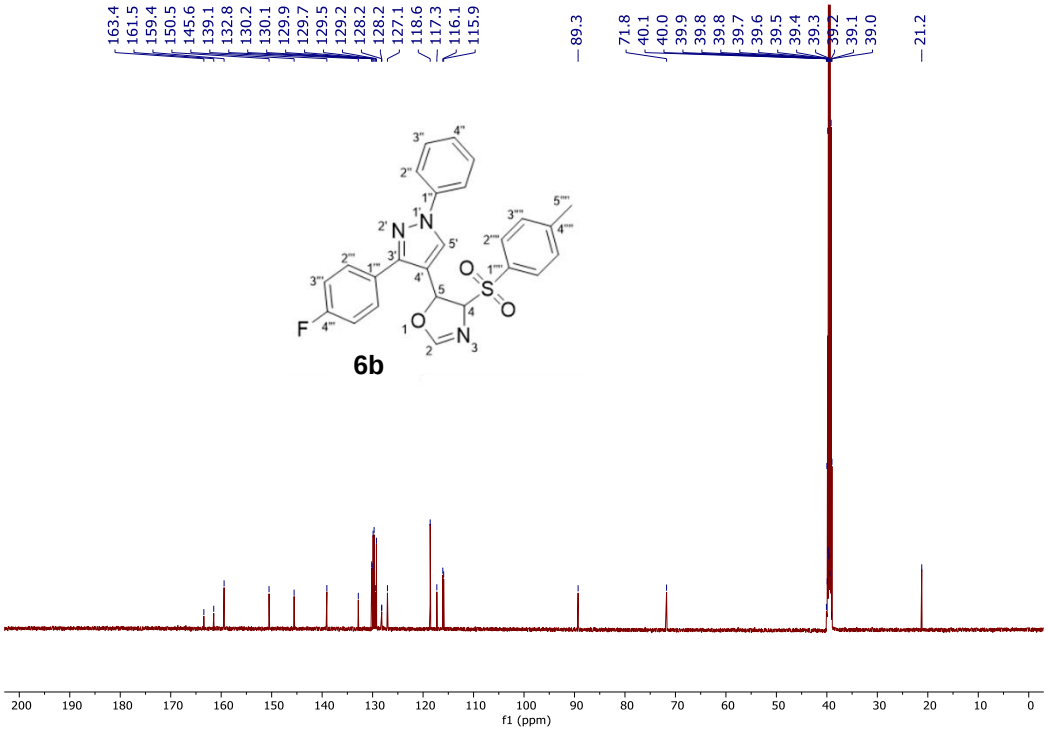


Figure S146. ^{13}C NMR (125 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6b**.

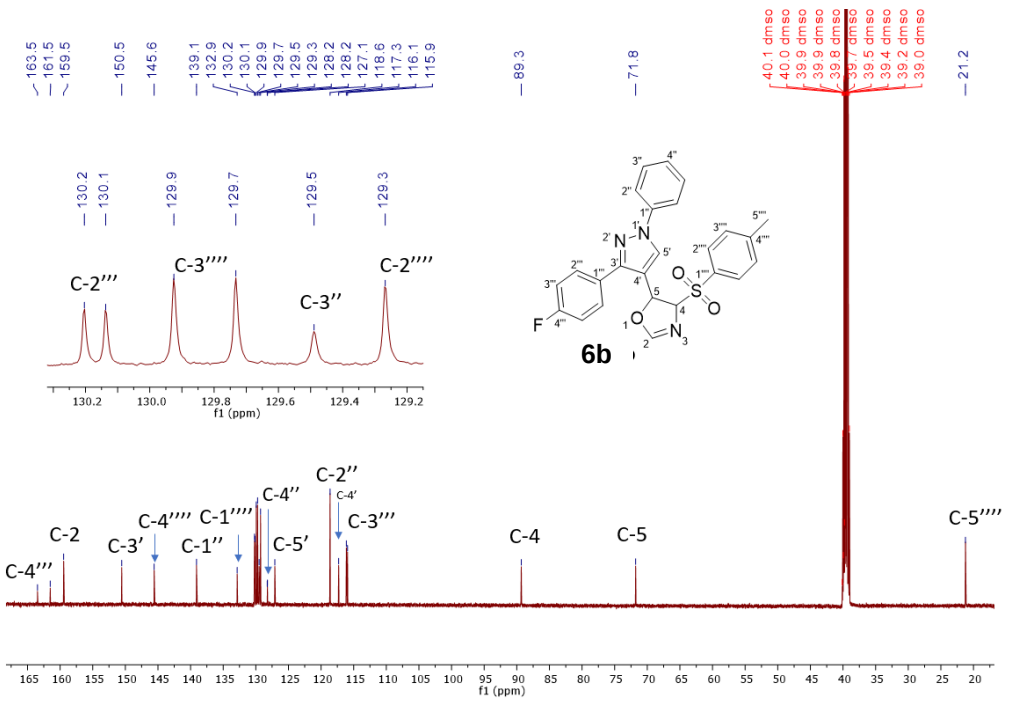


Figure S147. Expansion of ^{13}C NMR (125 MHz, DMSO-d_6) of (4*S**, 5*S**)-5-(3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6b**.

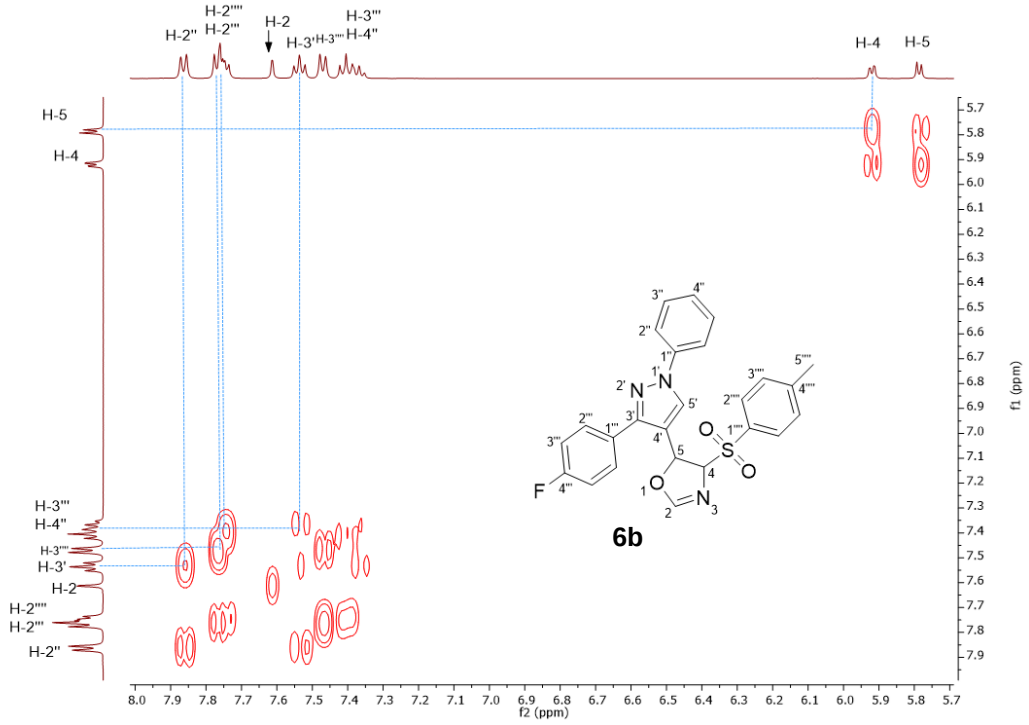


Figure S148. COSY experiment of (4*S**, 5*S**)-5-(3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6b**.

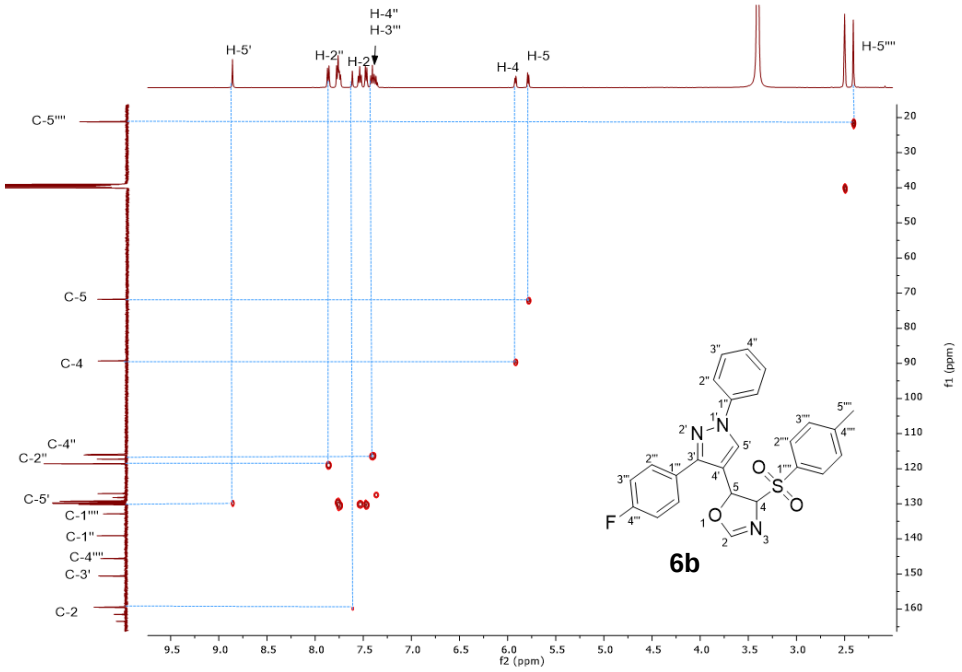


Figure S149. HSQC experiment of (4*S**, 5*S**)-5-(3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6b**.

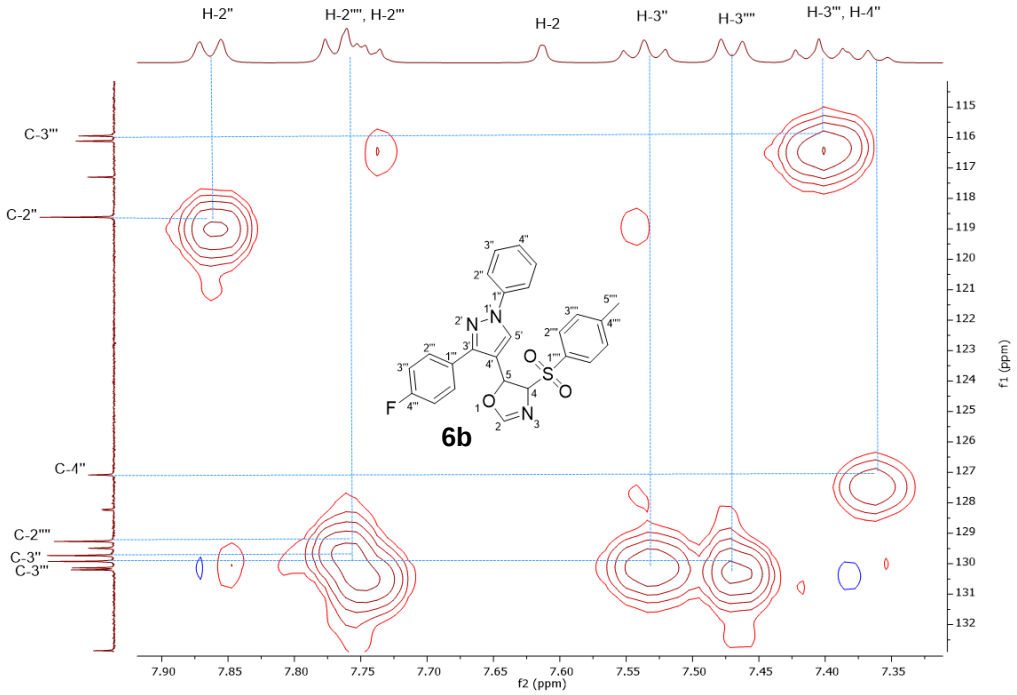


Figure S150. Expansion of HSQC experiment of (4*S**, 5*S**)-5-(3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6b**.

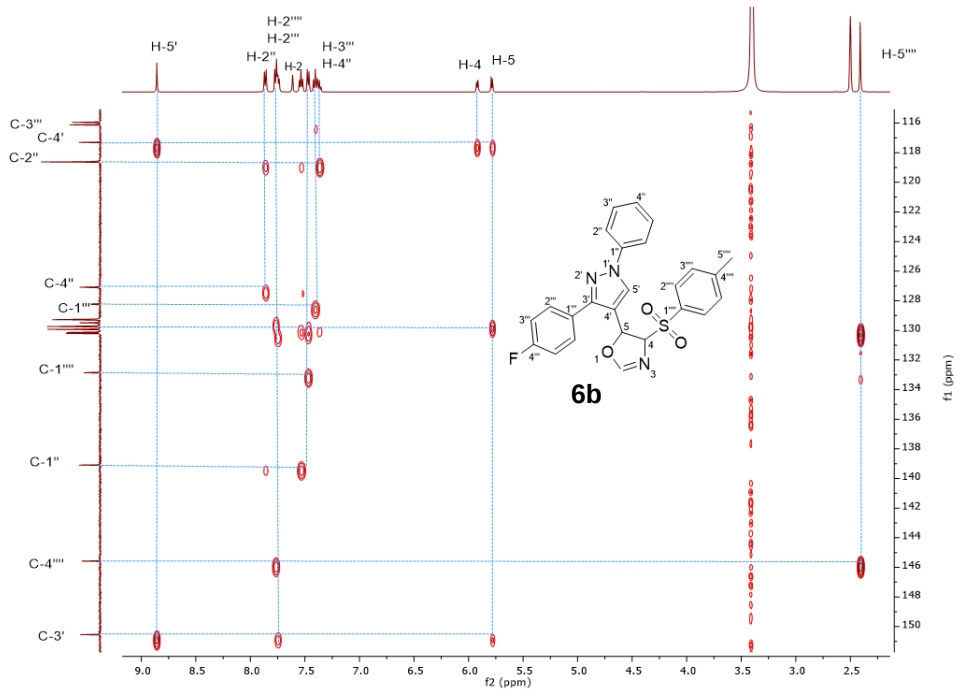


Figure S151. HMBC experiment of (4*S**, 5*S**)-5-(3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6b**.

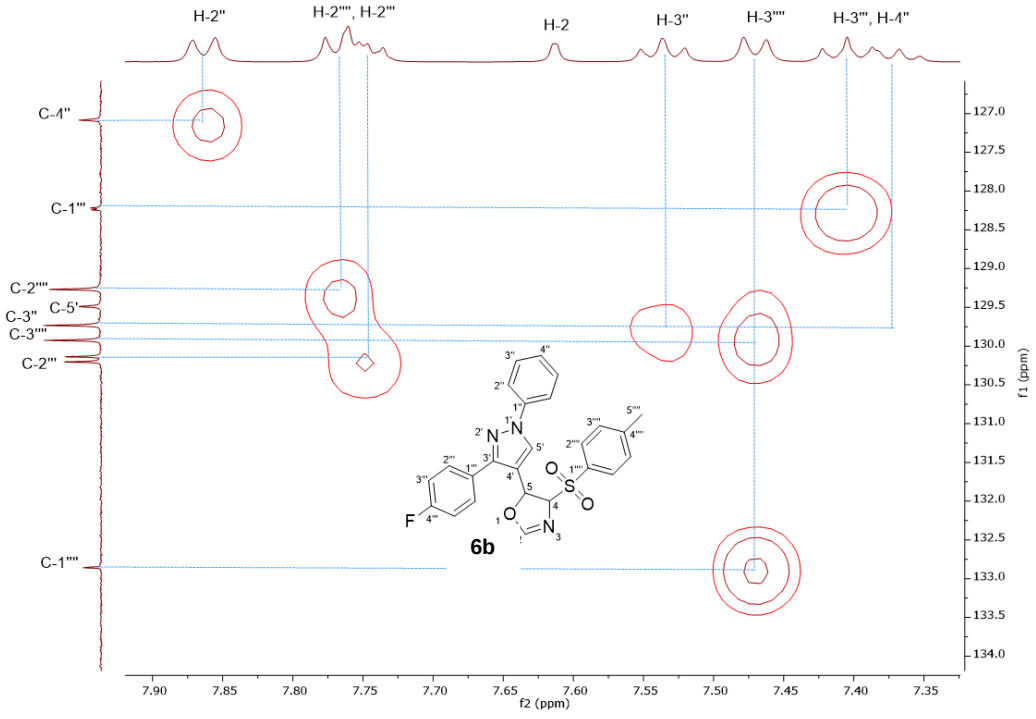


Figure S152. Expansion of HMBC experiment of (4*S**, 5*S**)-5-(3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6b**.

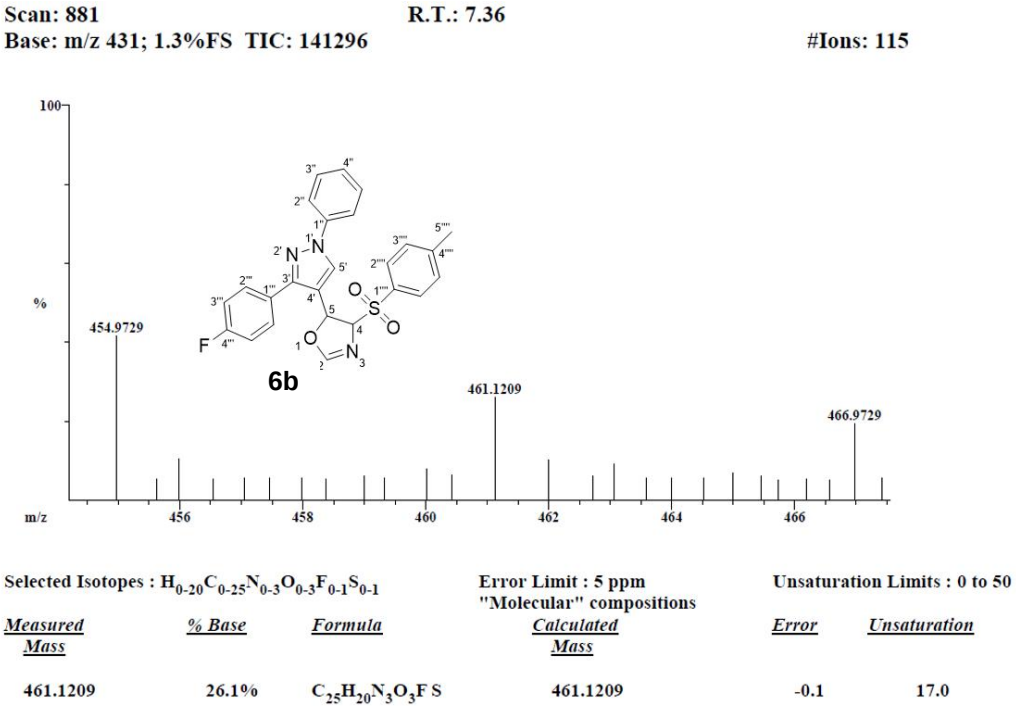


Figure S153. HRMS of (4*S**, 5*S**)-5-(3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6b**.

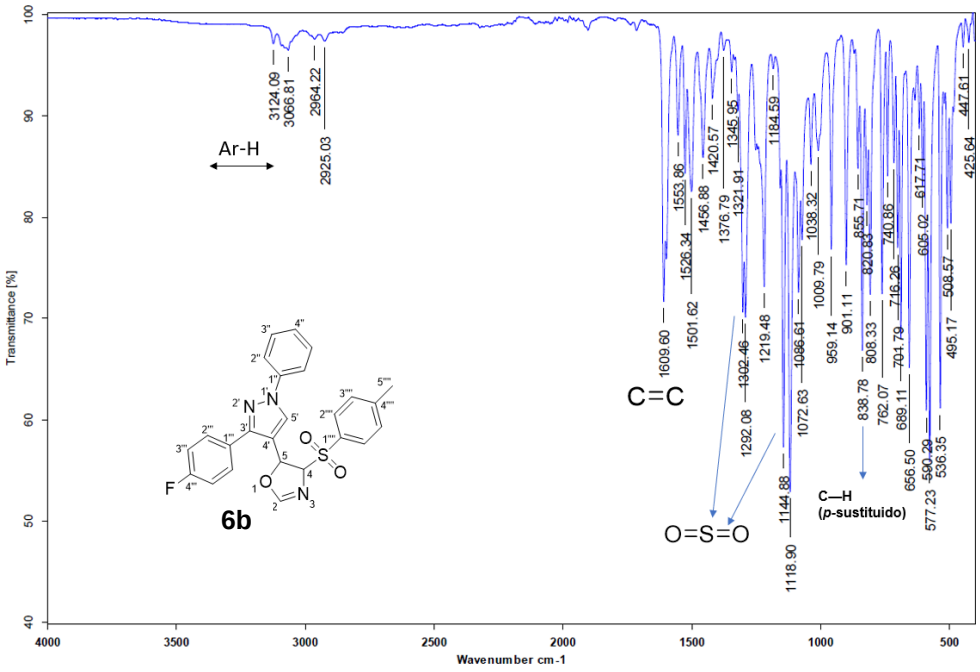


Figure S154. FT-IR of (4*S**, 5*S**)-5-(3-(4-fluorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6b**.

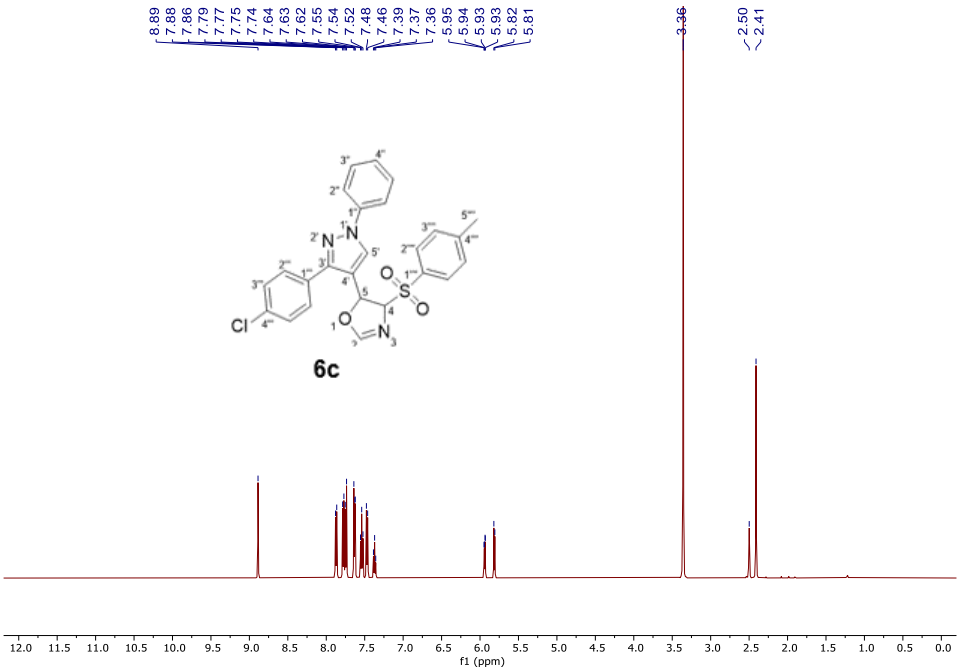


Figure S155. ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6c**.

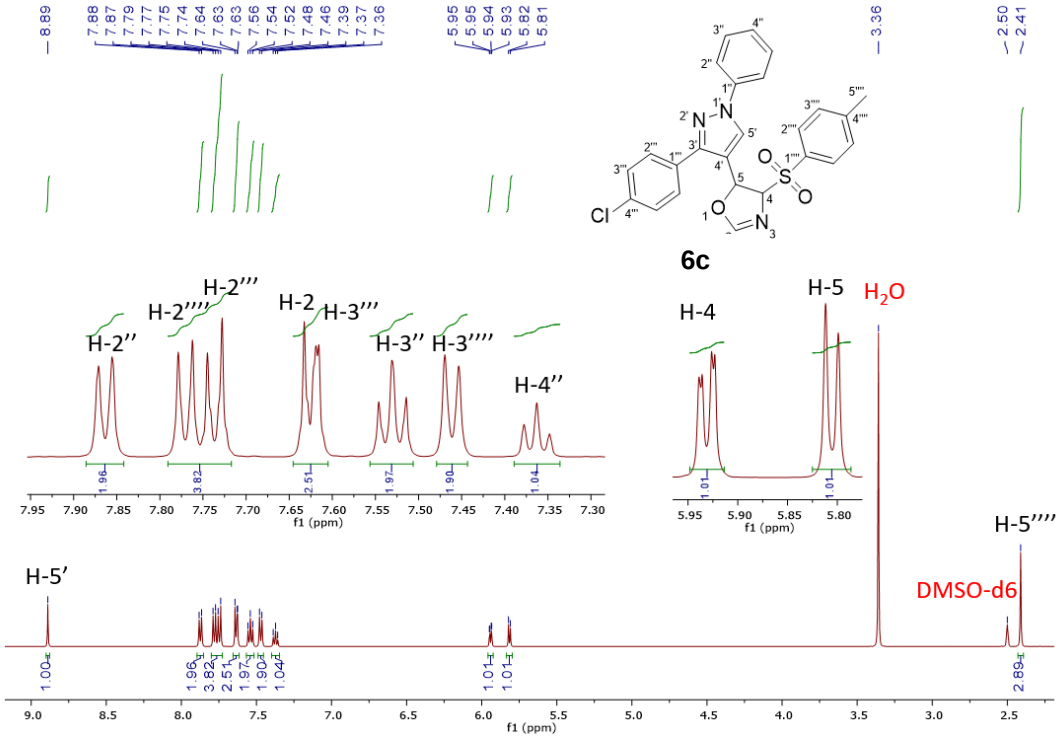


Figure S156. Expansion of ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6c**.

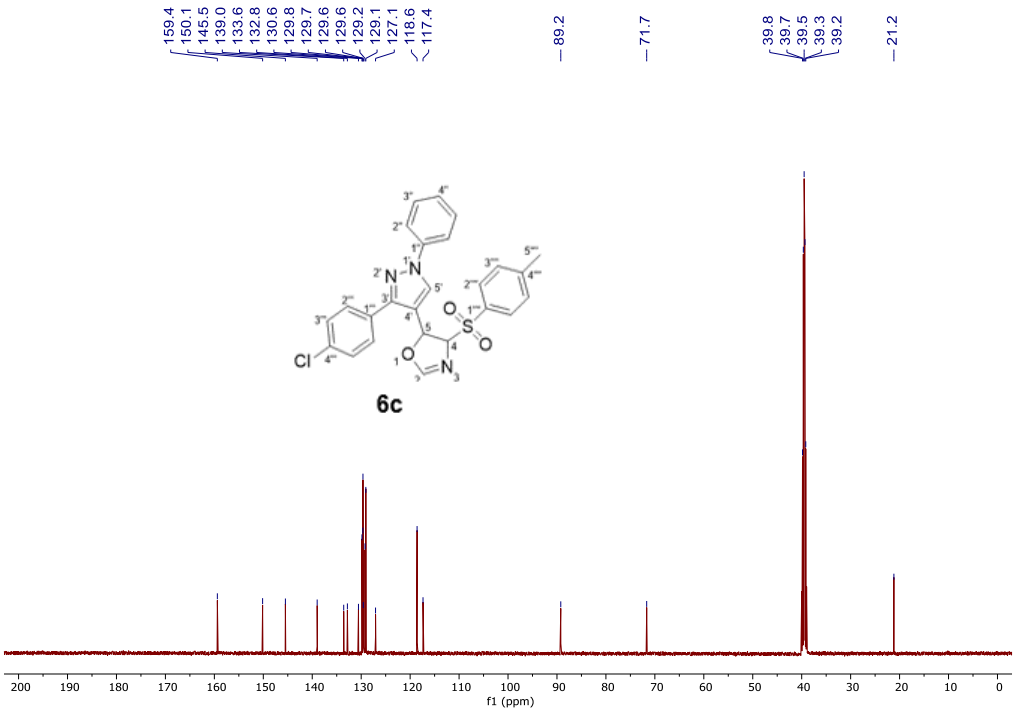


Figure S157. ^{13}C NMR (125 MHz, DMSO-d_6) of (4*S**, 5*S**)-5-(3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydroxazole **6c**.

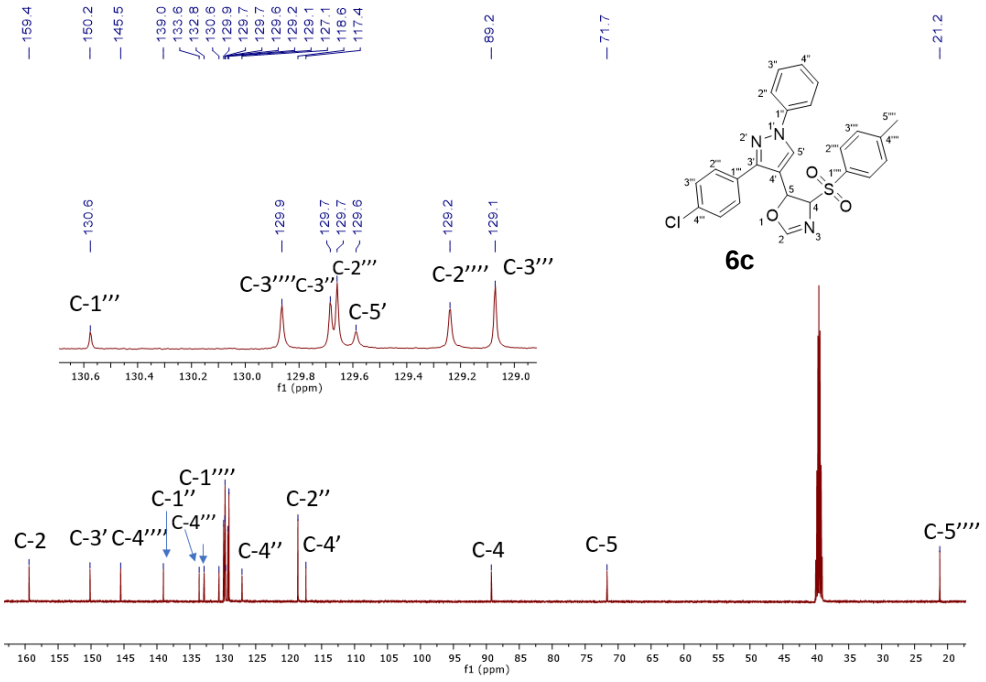


Figure S158. Expansion of ^{13}C NMR (125 MHz, DMSO-d_6) of (4*S**, 5*S**)-5-(3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydroxazole **6c**.

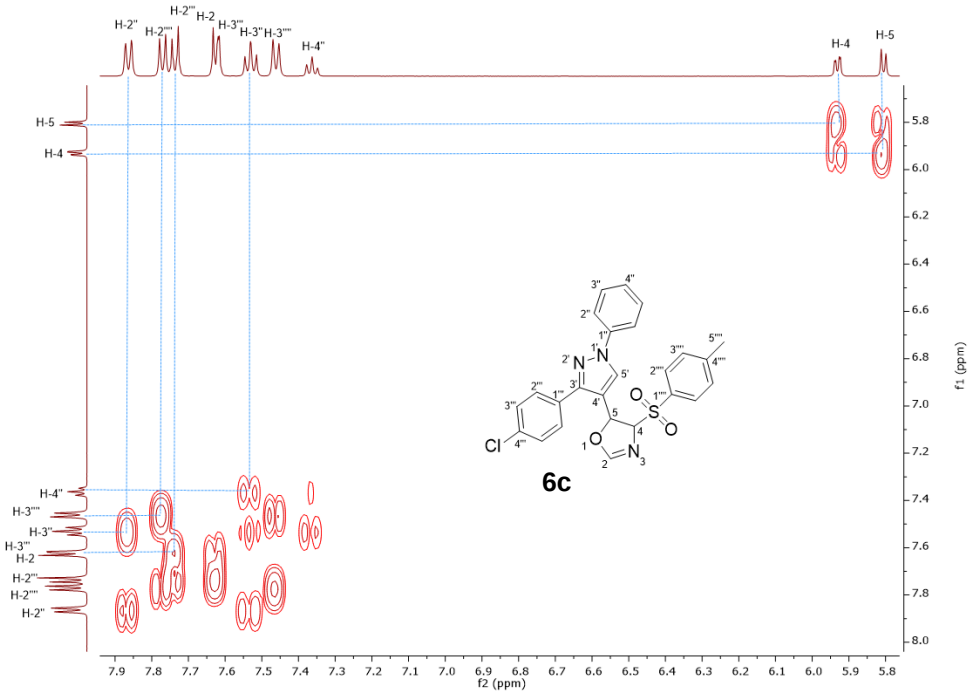


Figure S159. COSY experiment of (4*S**, 5*S**)-5-(3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6c**.

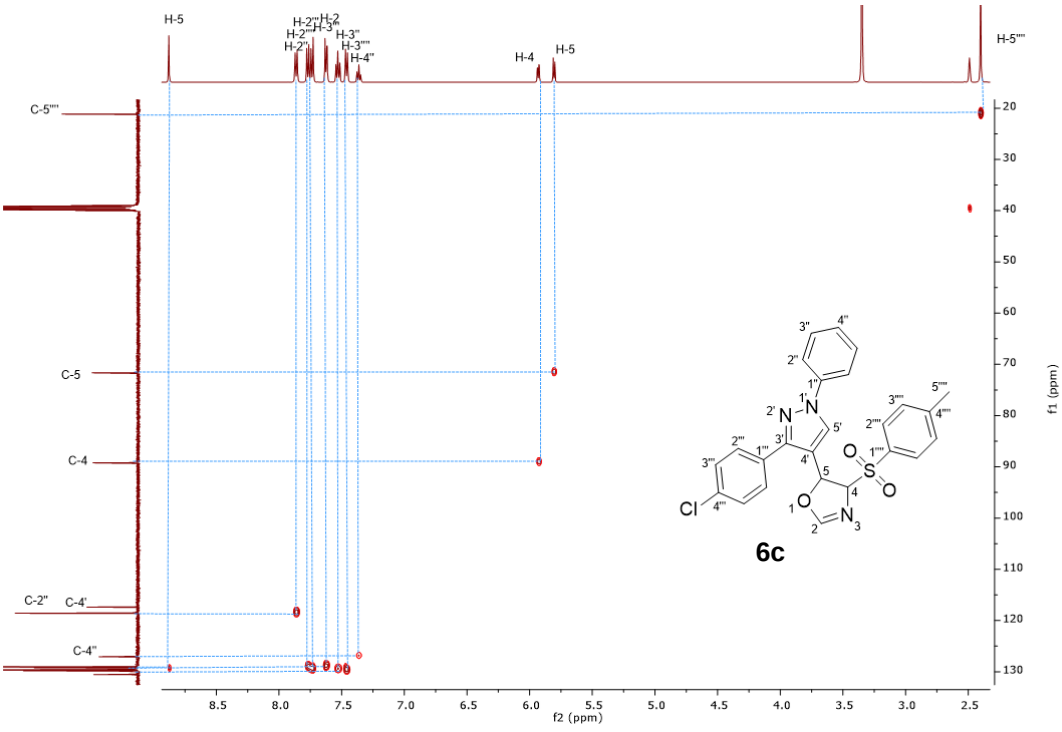


Figure S160. HSQC experiment of (4*S**, 5*S**)-5-(3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6c**.

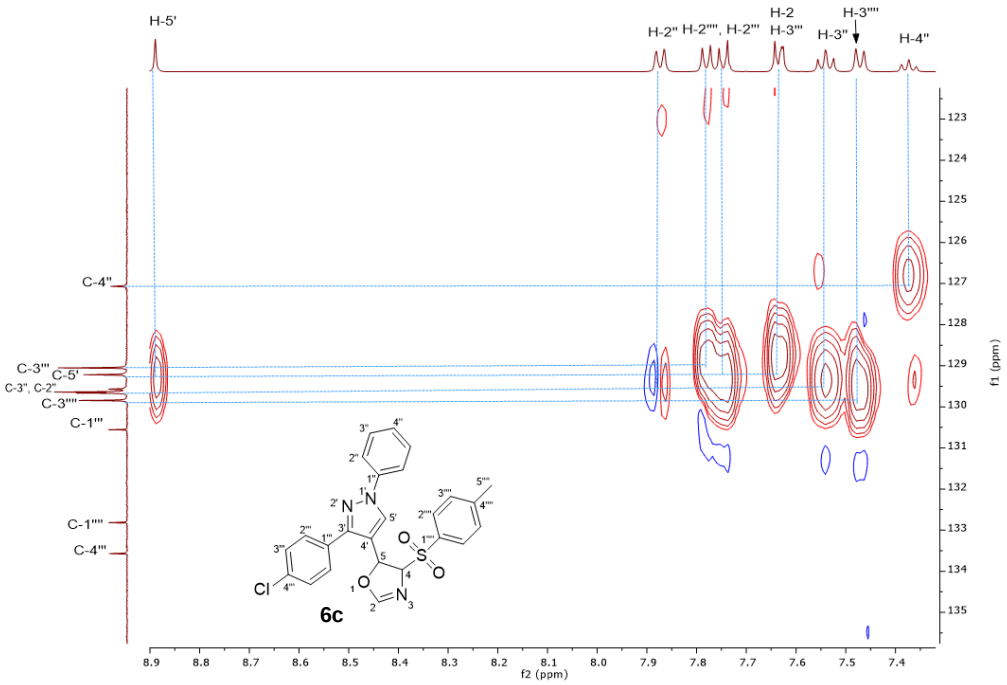


Figure S161. Expansion of HSQC experiment of (4*S**, 5*S**)-5-(3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6c**.

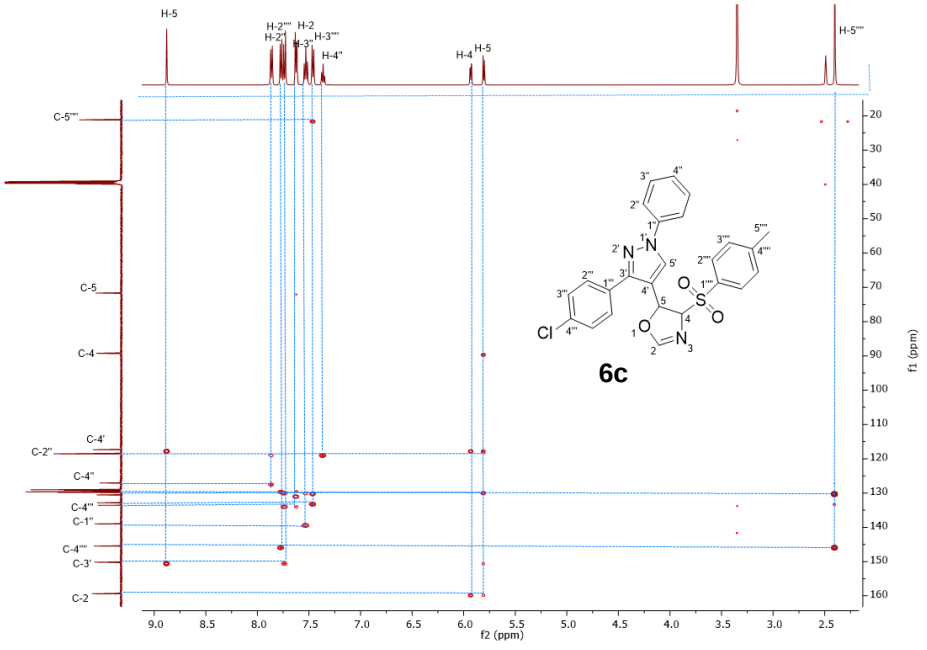


Figure S162. HMBC experiment of (4*S**, 5*S**)-5-(3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6c**.

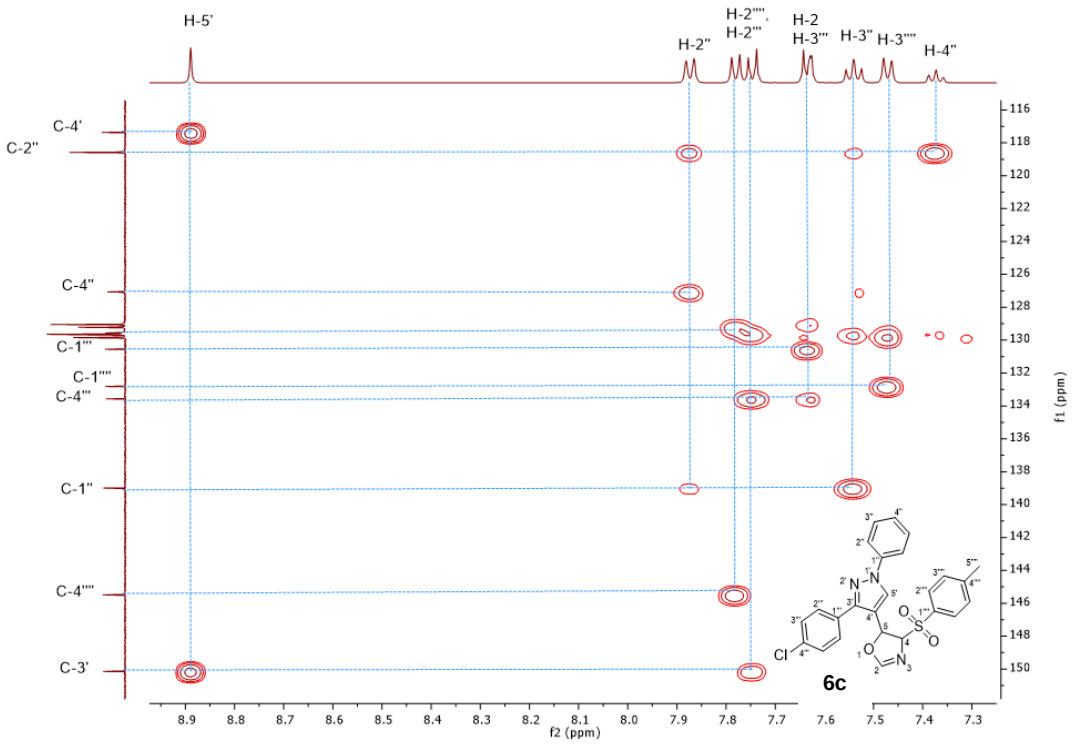
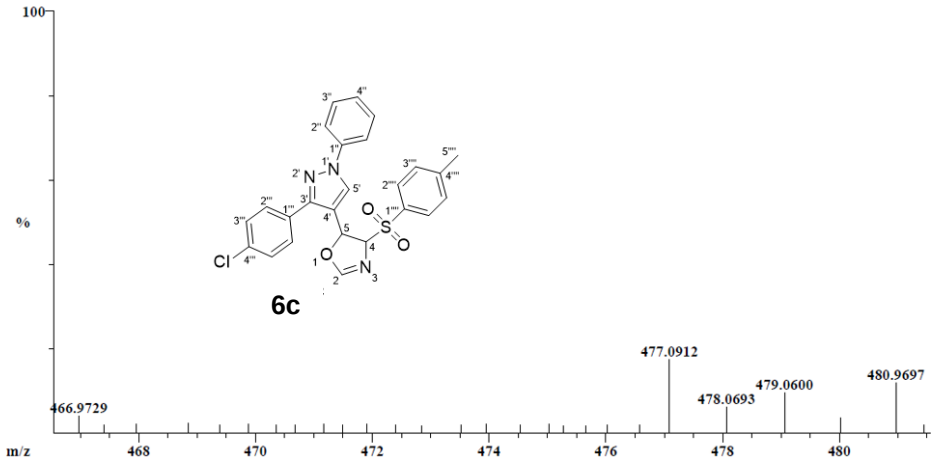


Figure S163. Expansion of HMBC experiment of (4*S**, 5*S**)-5-(3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6c**.



Selected Isotopes : $H_{0-20}C_{0-25}N_{0-3}O_{0-3}Cl_{0-1}S_{0-1}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
477.0912	17.5%	$C_{25}H_{20}N_3O_3ClS$	477.0914	-0.4	17.0

Figure S164. HRMS of (4*S**, 5*S**)-5-(3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6c**.

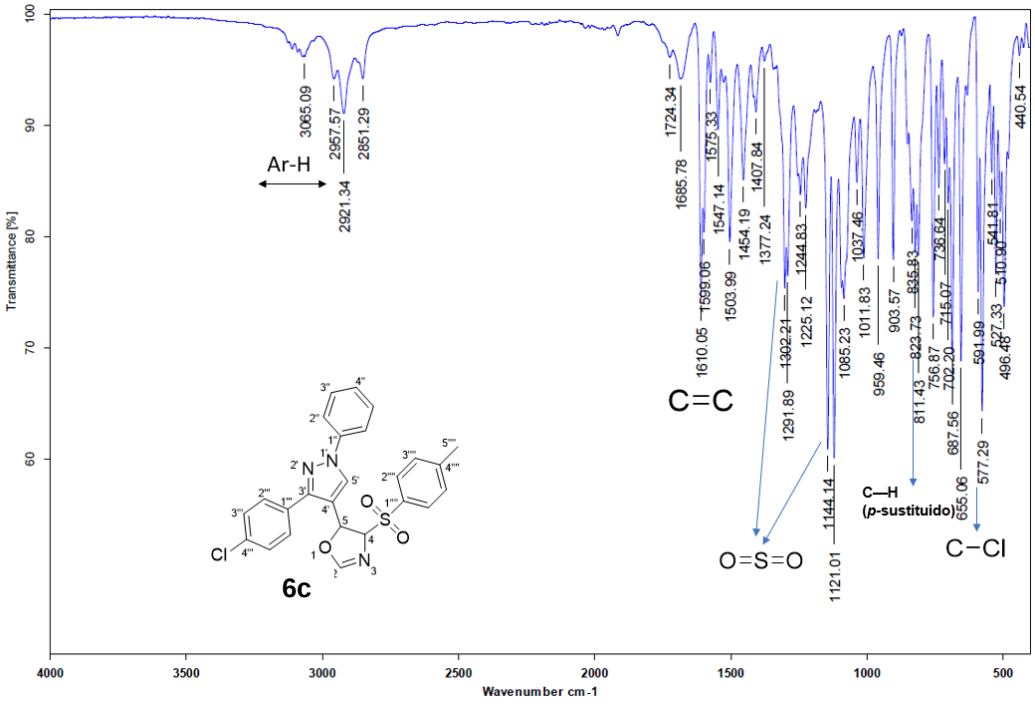


Figure S165. FT-IR of (4*S**, 5*S**)-5-(3-(4-chlorophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6c**.

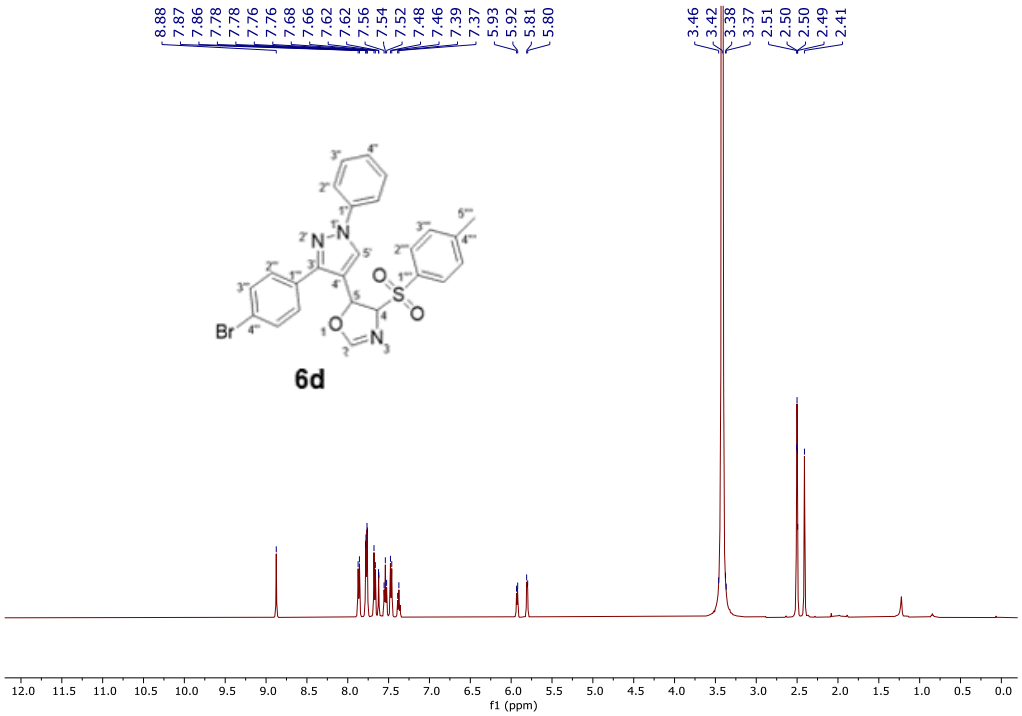


Figure S166. ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-bromophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6d**.

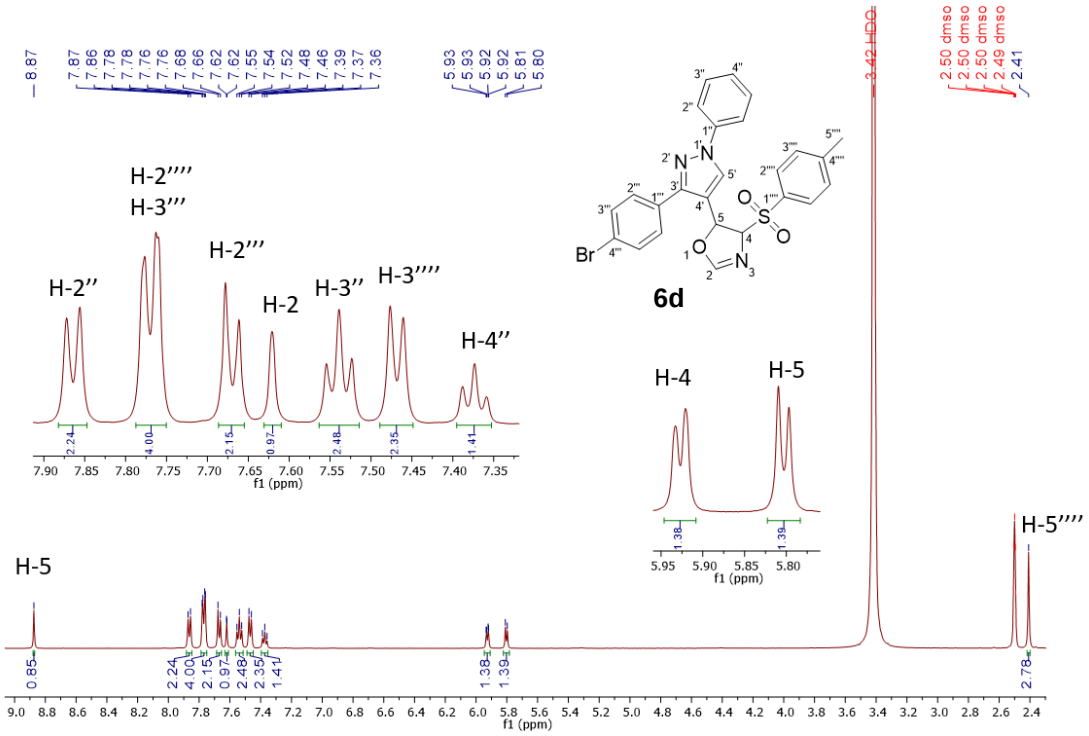


Figure S167. Expansion of ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-bromophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6d**.

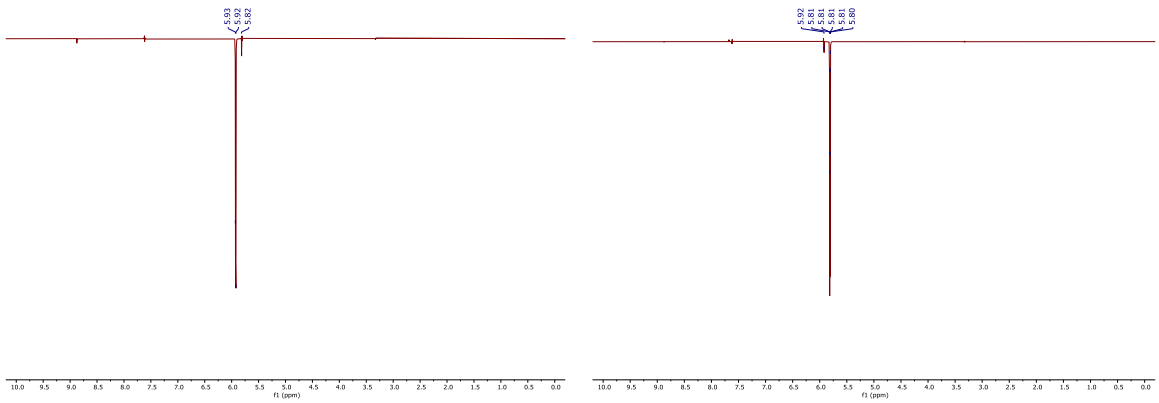


Figure S168. NOESY experiments of (4*S**, 5*S**)-5-(3-(4-bromophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6d** (H-4 and H-5 were irradiated).

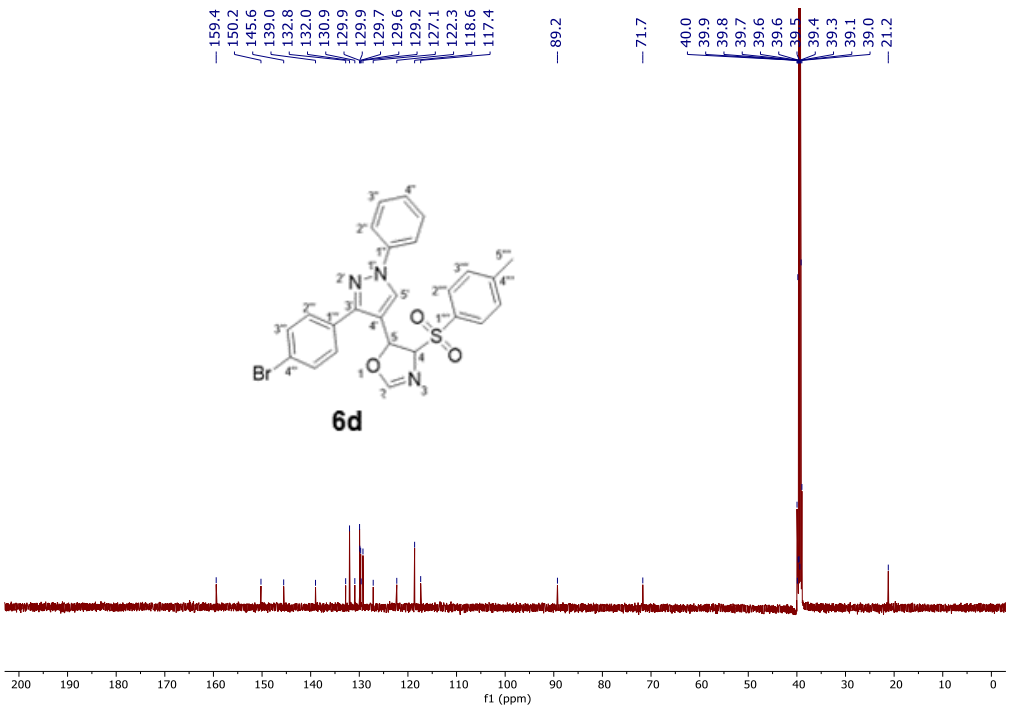


Figure S169. ^{13}C NMR (125 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-bromophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6d**.

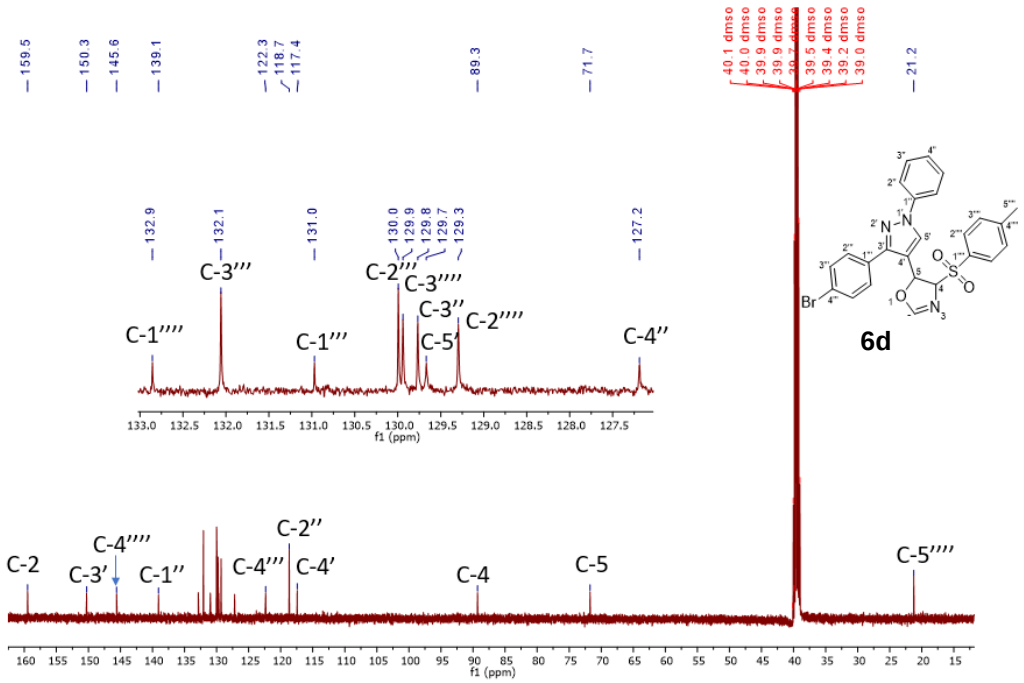


Figure S170. Expansion of ^{13}C NMR (125 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-bromophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6d**.

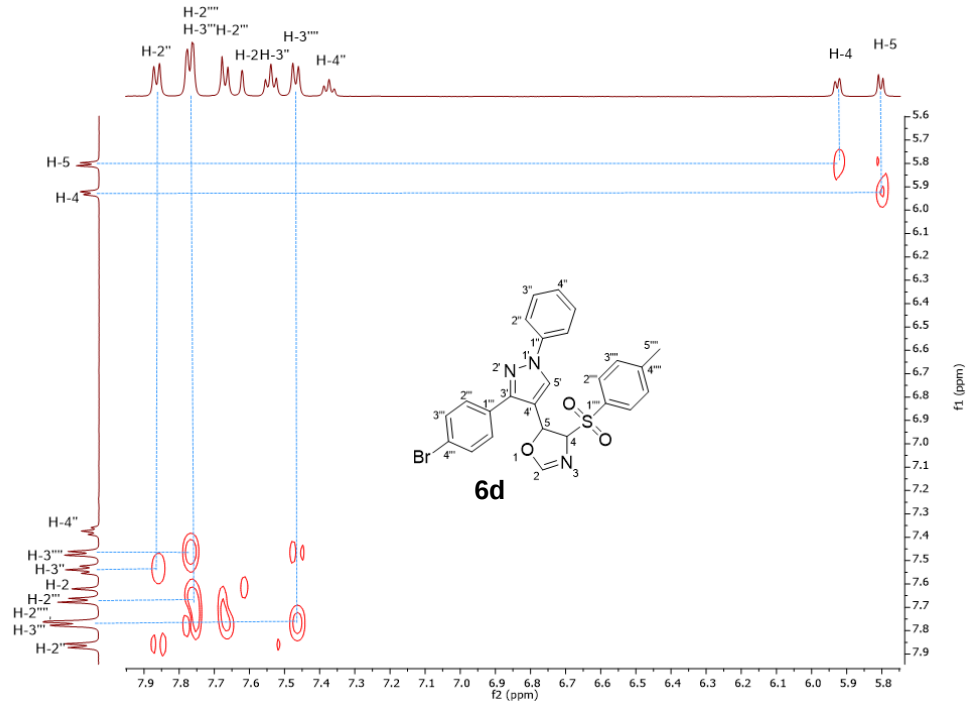


Figure S171. COSY experiment of (4*S**, 5*S**)-5-(3-(4-bromophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6d**.

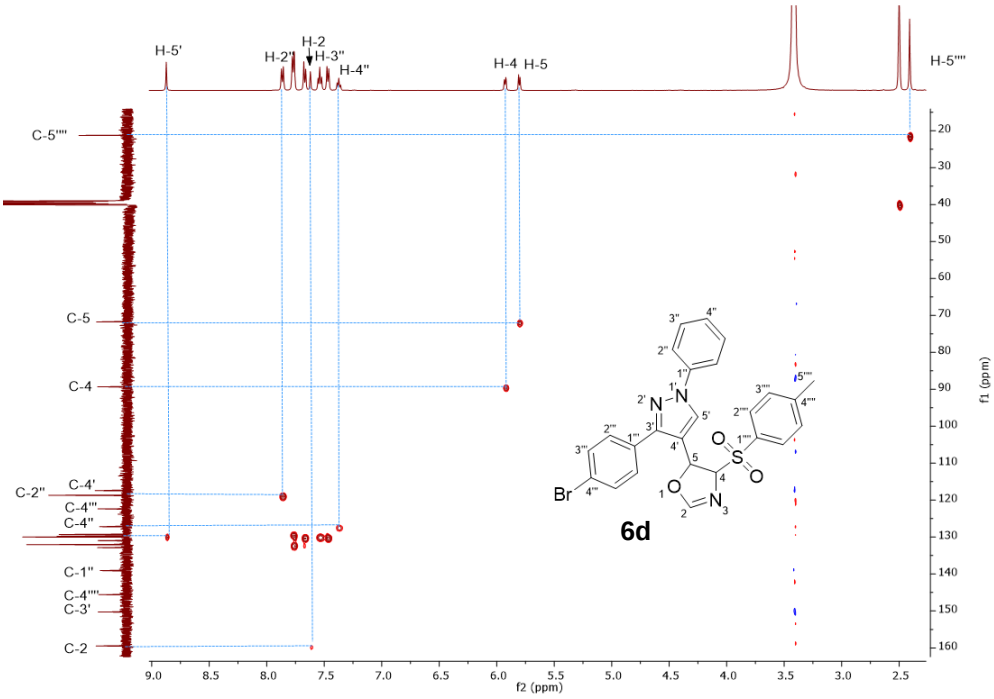


Figure S172. HSQC experiment of (4*S**, 5*S**)-5-(3-(4-bromophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6d**.

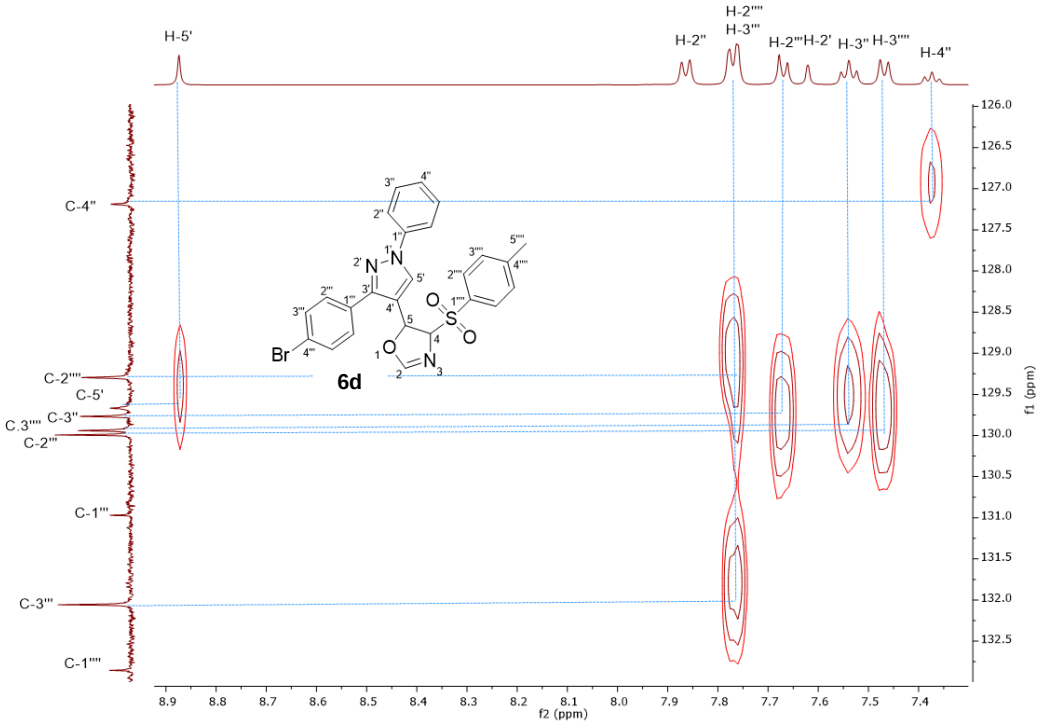


Figure S173. Expansion of HSQC experiment of (4*S**, 5*S**)-5-(3-(4-bromophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6d**.

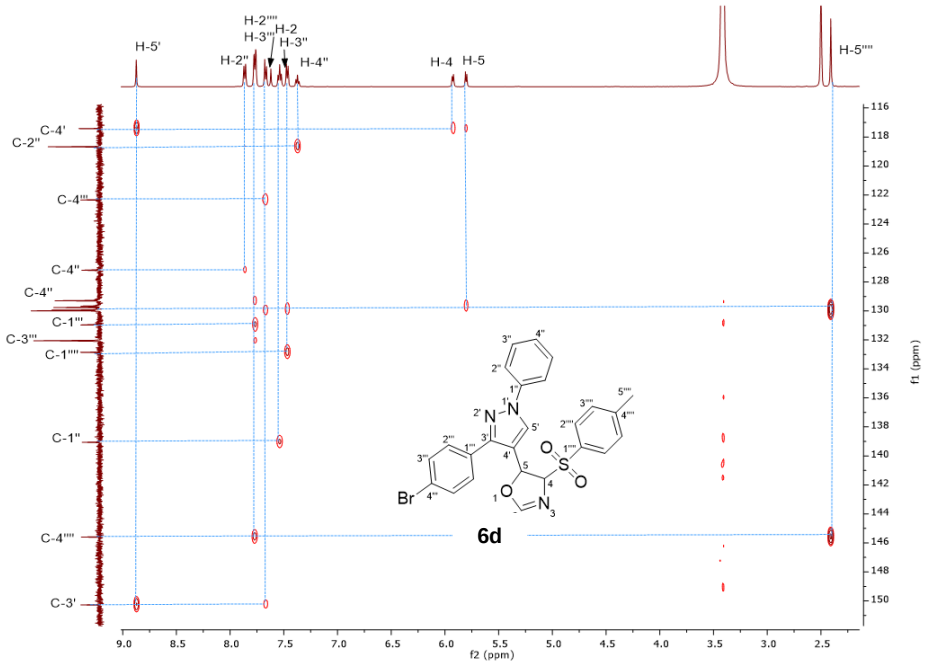


Figure S174. HMBC experiment of (4*S**, 5*S**)-5-(3-(4-bromophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6d**.

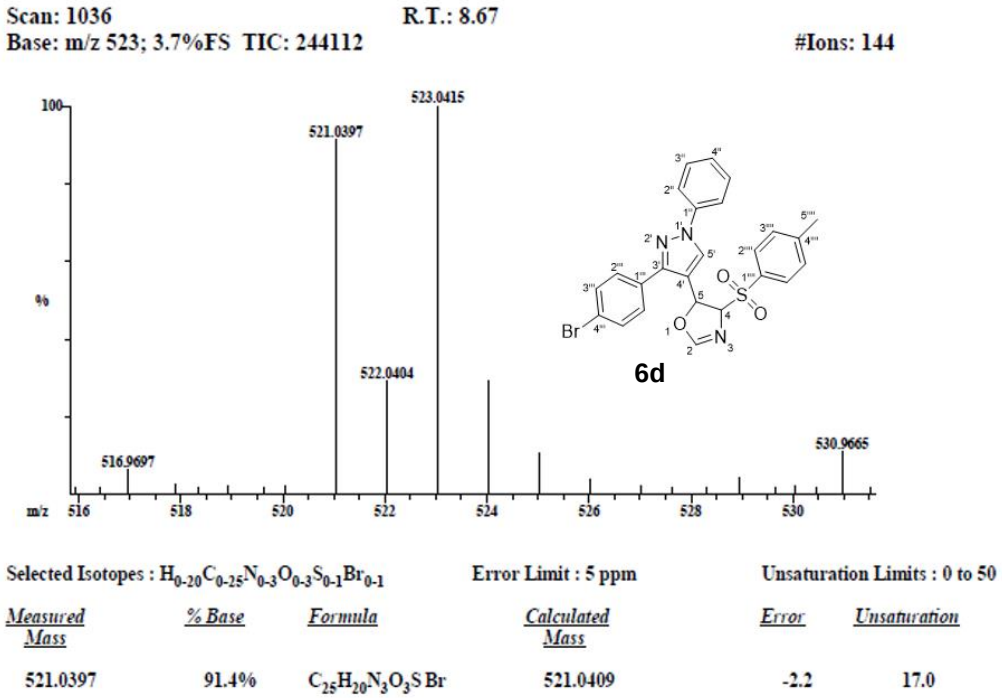


Figure S175. HRMS of (4*S**, 5*S**)-5-(3-(4-bromophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6d**.

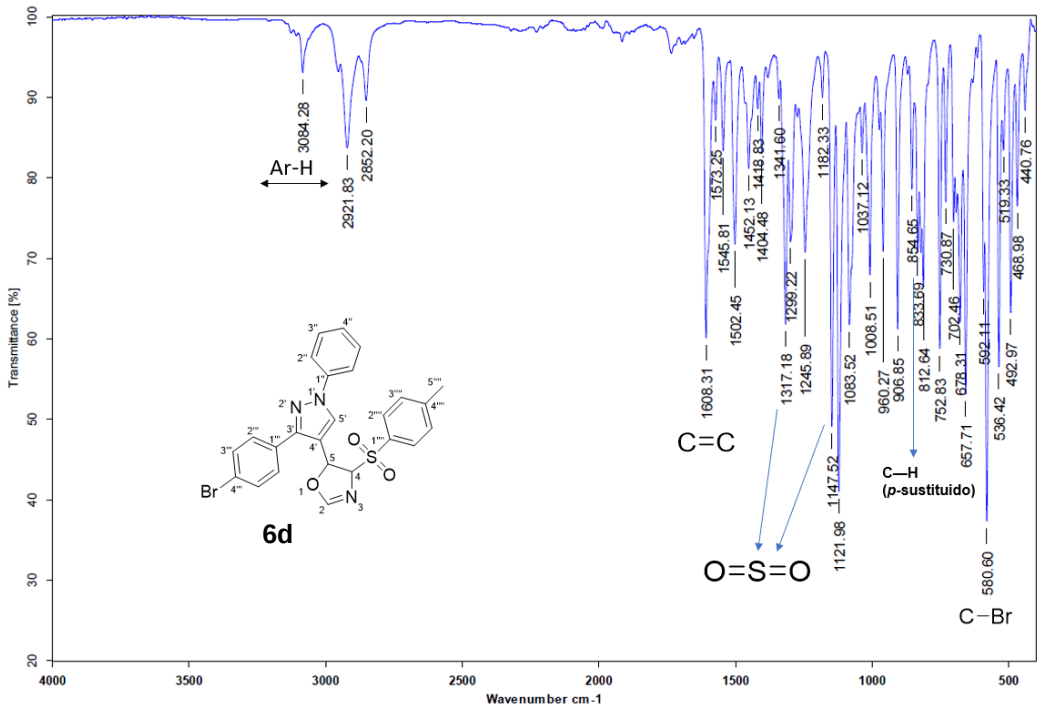


Figure S176. FT-IR of (4*S**, 5*S**)-5-(3-(4-bromophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6d**.

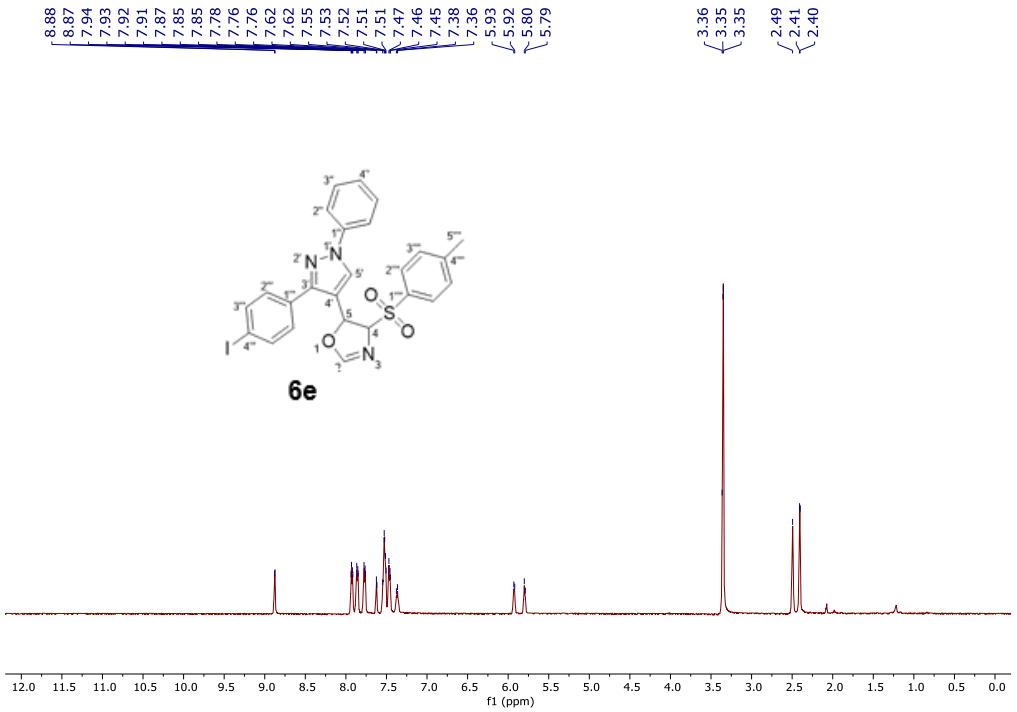


Figure S177. ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-iodophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6e**.

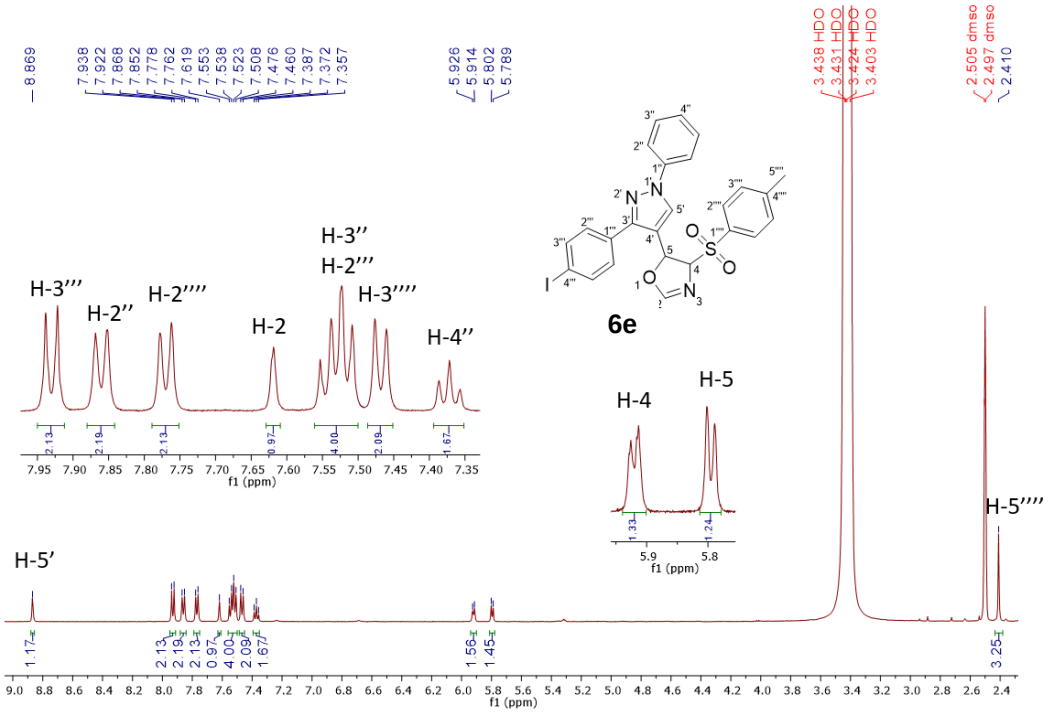


Figure S178. Expansion of ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-iodophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6e**.

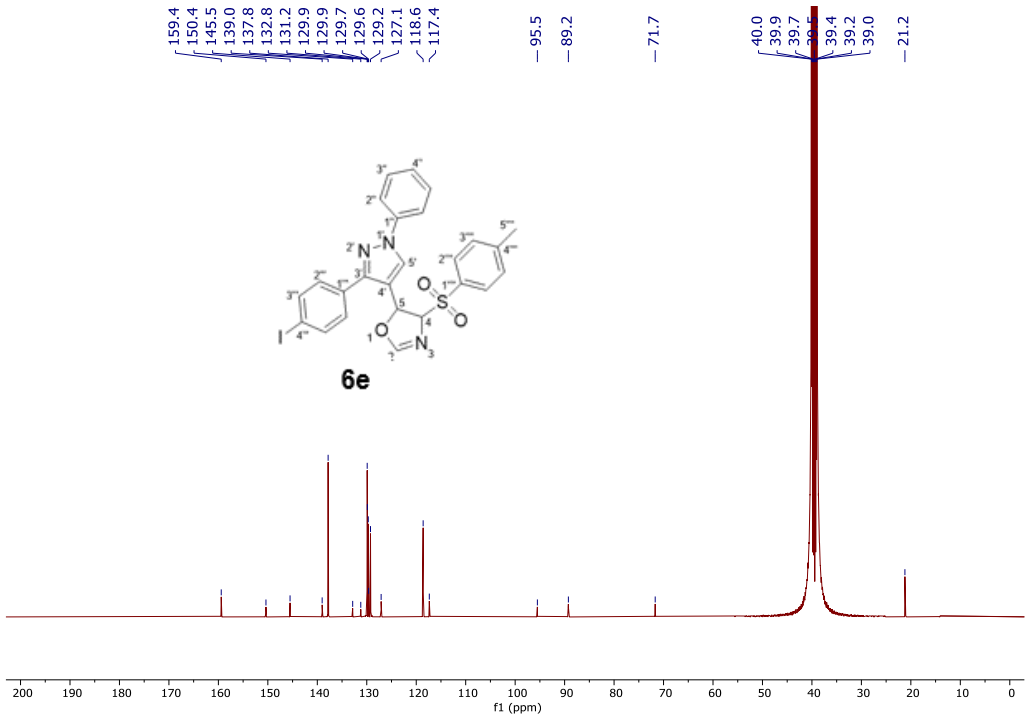


Figure S179. ^{13}C NMR (125 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-iodophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6e**.

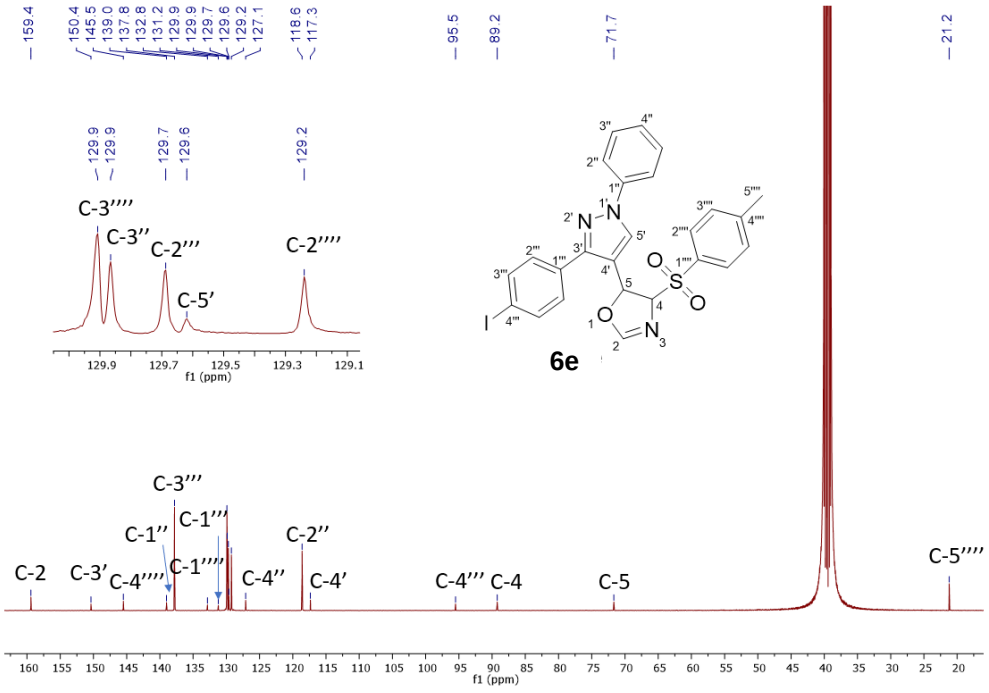


Figure S180. Expansion of ^{13}C NMR (125 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-iodophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6e**.

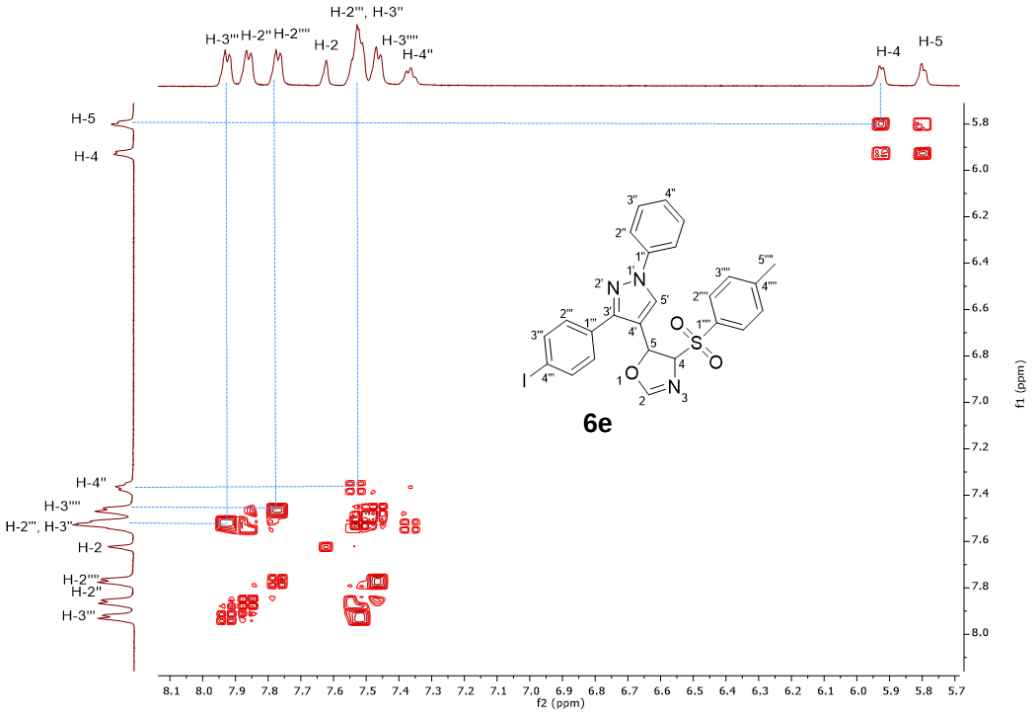


Figure S181. COSY experiment of (4*S**, 5*S**)-5-(3-(4-iodophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6e**.

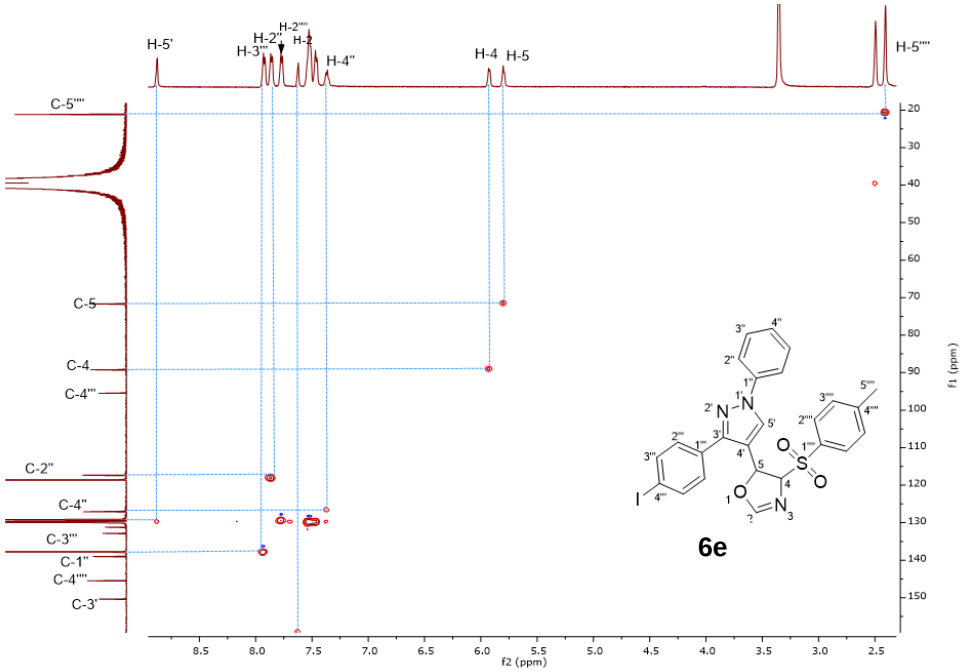


Figure S182. HSQC experiment of (4*S**, 5*S**)-5-(3-(4-iodophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6e**.

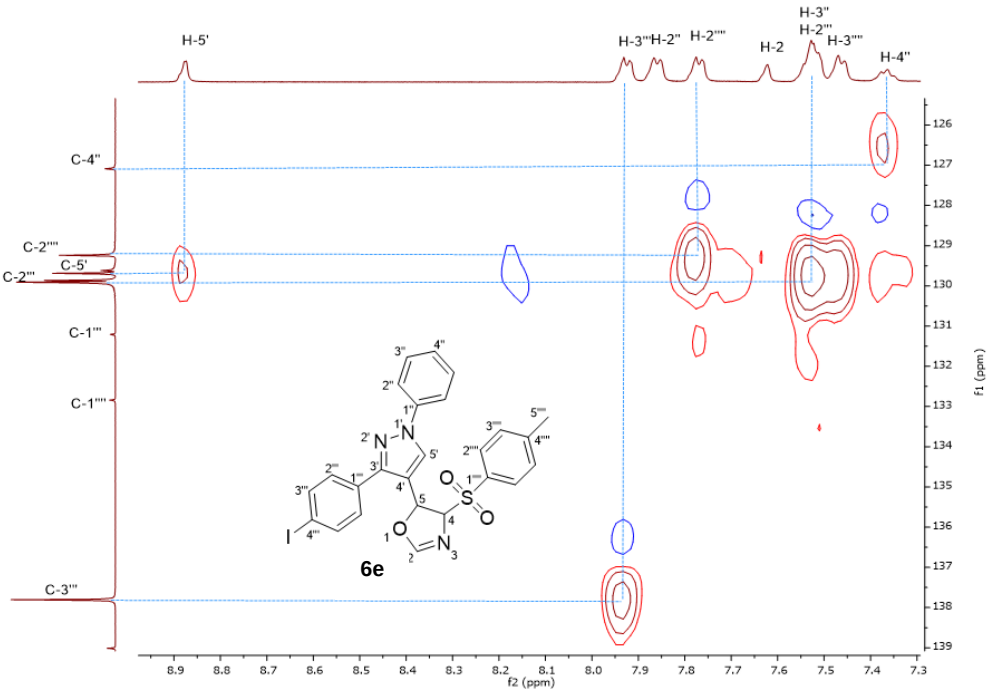


Figure S183. Expansion of HSQC experiment of (4*S**, 5*S**)-5-(3-(4-iodophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6e**.

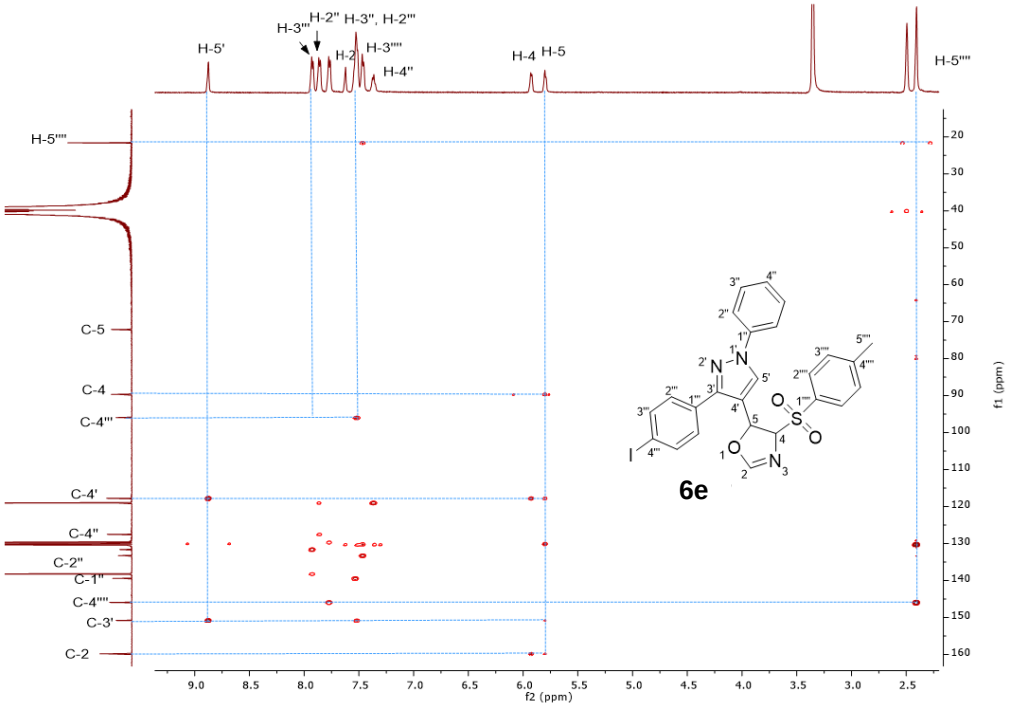


Figure S184. HMBC experiment of (4*S**, 5*S**)-5-(3-(4-iodophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6e**.

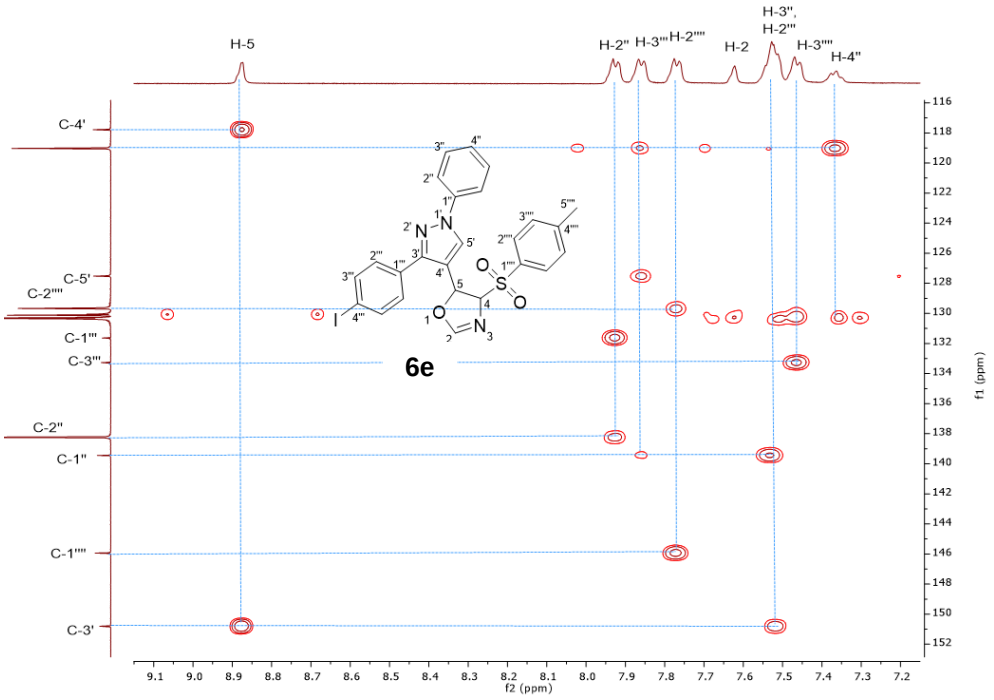
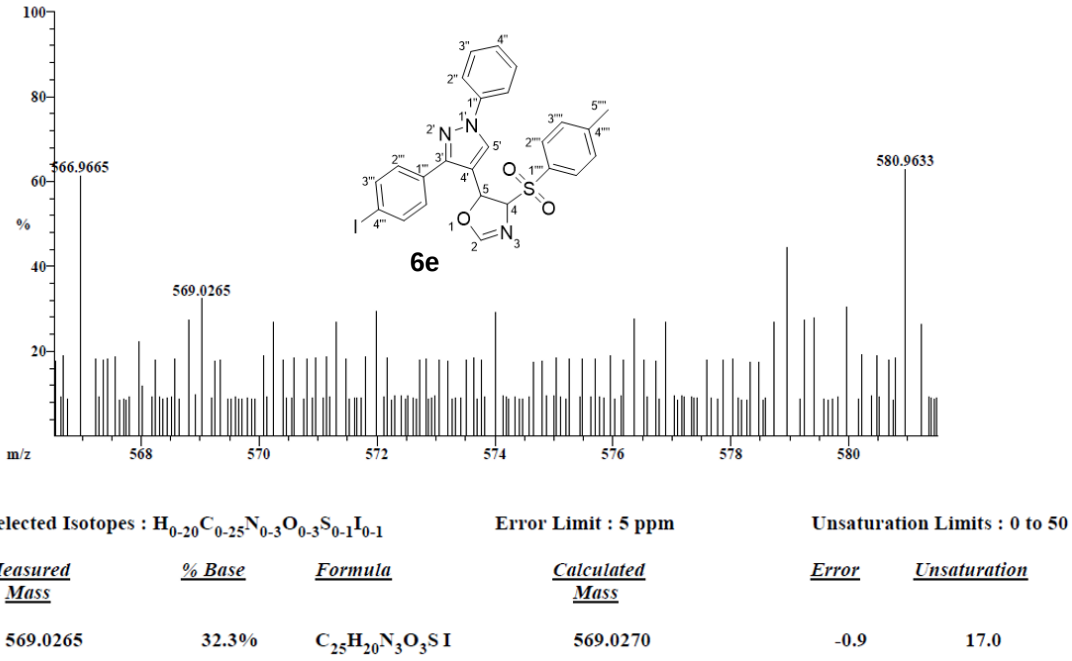


Figure S185. Expansion of HMBC experiment of (4*S**, 5*S**)-5-(3-(4-iodophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6e**.



Selected Isotopes : $H_{0-20}C_{0-25}N_{0-3}O_{0-3}S_{0-1}I_{0-1}$ **Error Limit : 5 ppm** **Unsaturation Limits : 0 to 50**

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
569.0265	32.3%	$C_{25}H_{20}N_3O_3SI$	569.0270	-0.9	17.0

Figure S186. HRMS of (4*S**, 5*S**)-5-(3-(4-iodophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6e**.

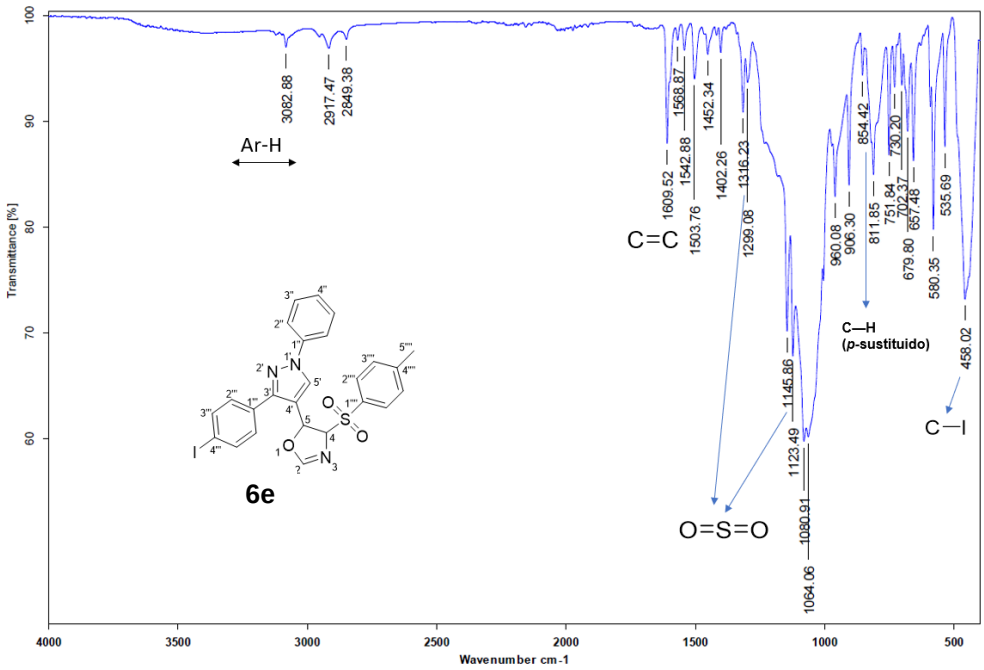


Figure S187. FT-IR of (4*S**, 5*S**)-5-(3-(4-iodophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6e**.

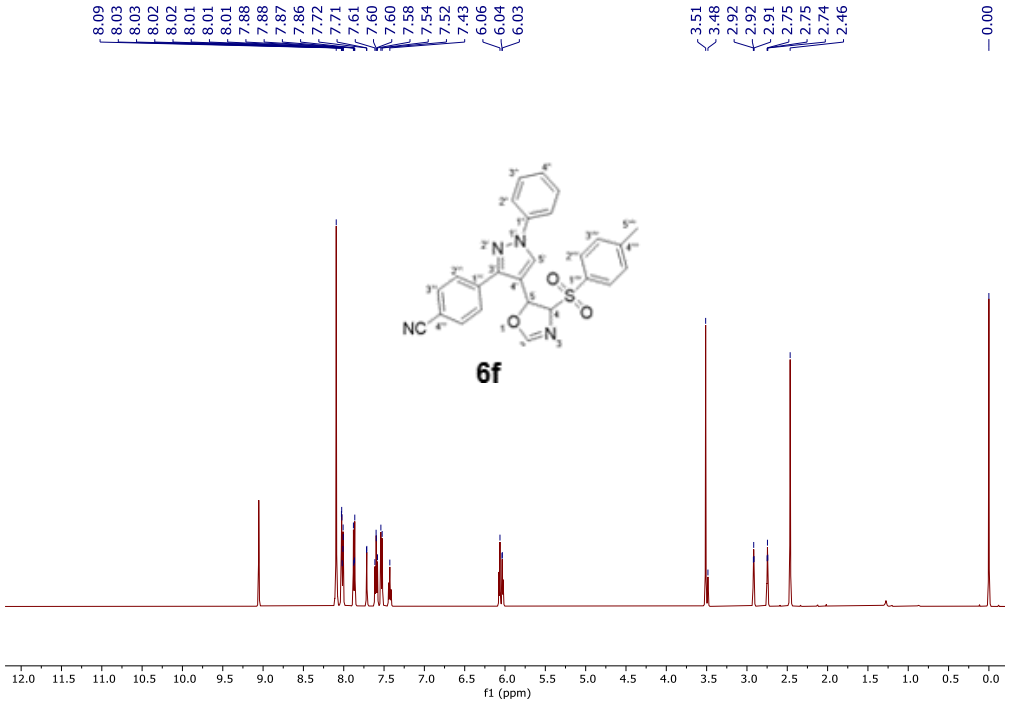


Figure S188. ^{1}H NMR (500 MHz, DMF-d$_7$) of (4*S**, 5*S**)-4-(1-phenyl-4-(4-tosyl-4,5-dihydrooxazol-5-yl)-1*H*-pyrazol-3-yl)benzonitrile **6f**.

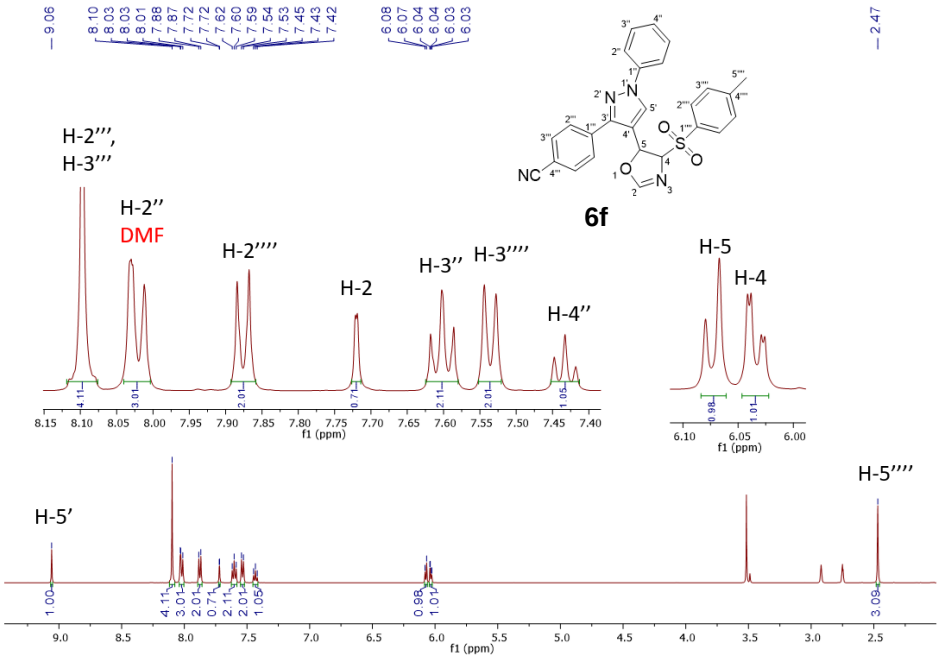


Figure S189. Expansion of ^{1}H NMR (500 MHz, DMF-d_7) of (4*S**, 5*S**)-4-(1-phenyl-4-(4-tosyl-4,5-dihydrooxazol-5-yl)-1*H*-pyrazol-3-yl)benzonitrile **6f**.

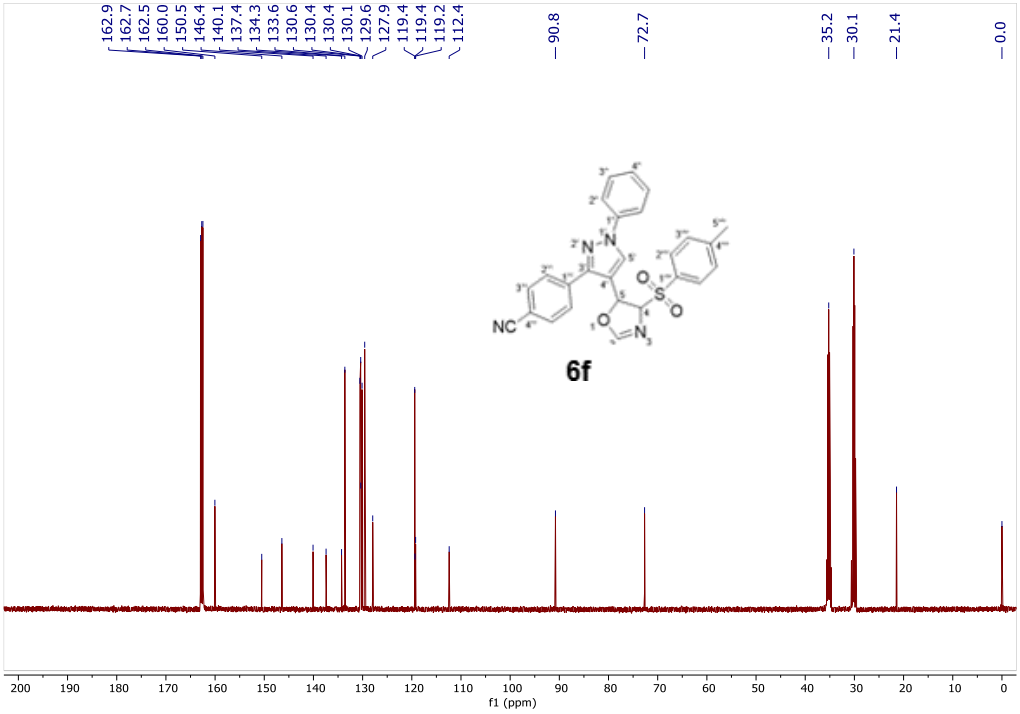


Figure S190. ^{13}C NMR (125 MHz, DMF-d_7) of (4*S**, 5*S**)-4-(1-phenyl-4-(4-tosyl-4,5-dihydrooxazol-5-yl)-1*H*-pyrazol-3-yl)benzonitrile **6f**.

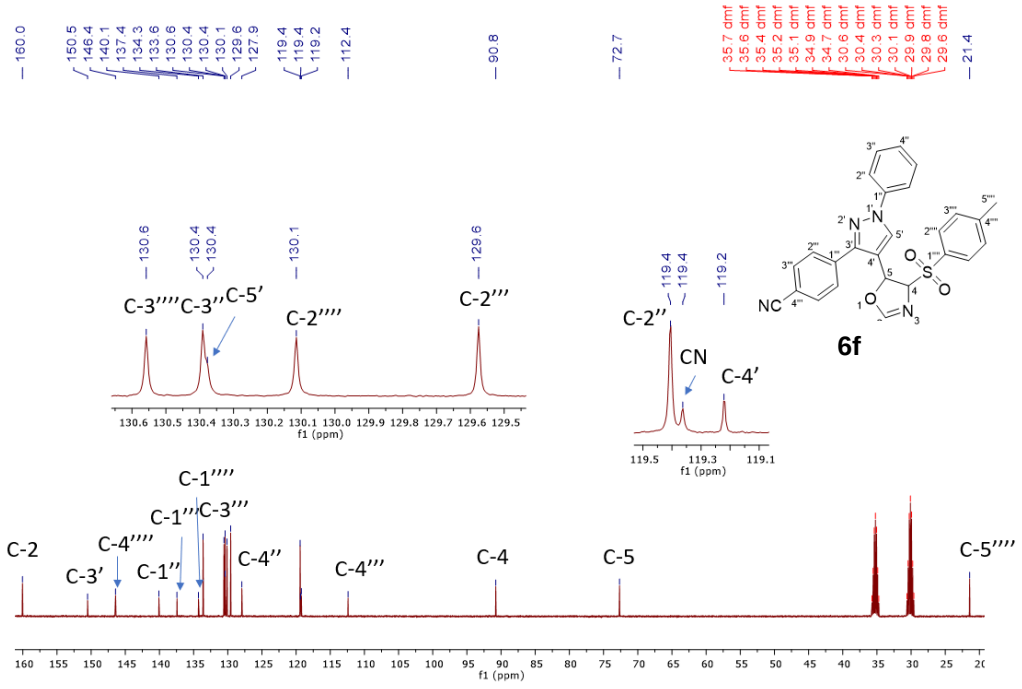


Figure S191. Expansion of ^{13}C NMR (125 MHz, DMF-d$_7$) of (4*S**, 5*S**)-4-(1-phenyl-4-(4-tosyl-4,5-dihydrooxazol-5-yl)-1*H*-pyrazol-3-yl)benzonitrile **6f**.

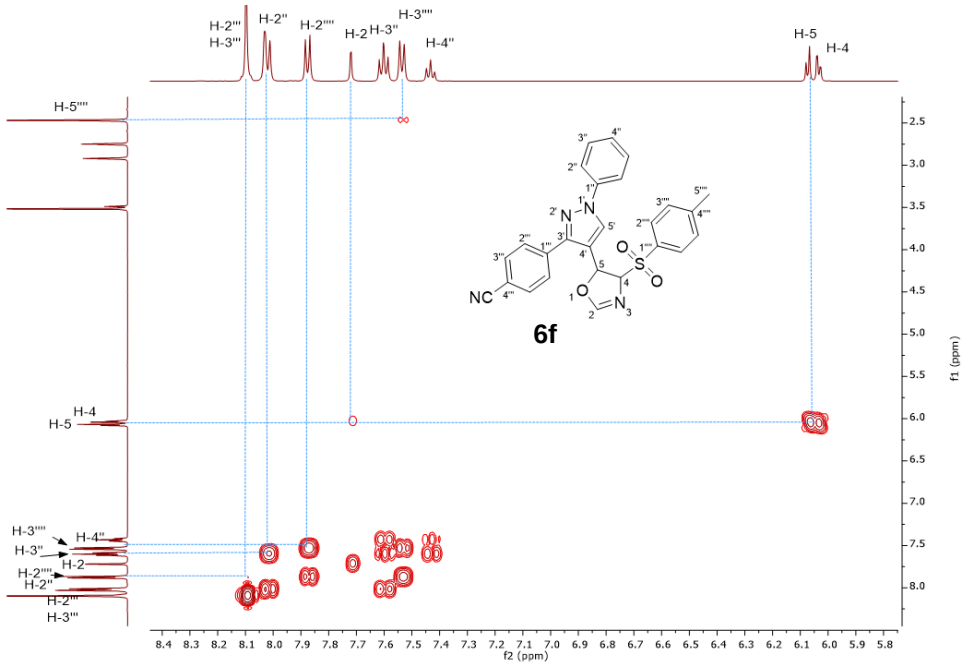


Figure S192. COSY experiment of (4*S**, 5*S**)-4-(1-phenyl-4-(4-tosyl-4,5-dihydrooxazol-5-yl)-1*H*-pyrazol-3-yl)benzonitrile **6f**.

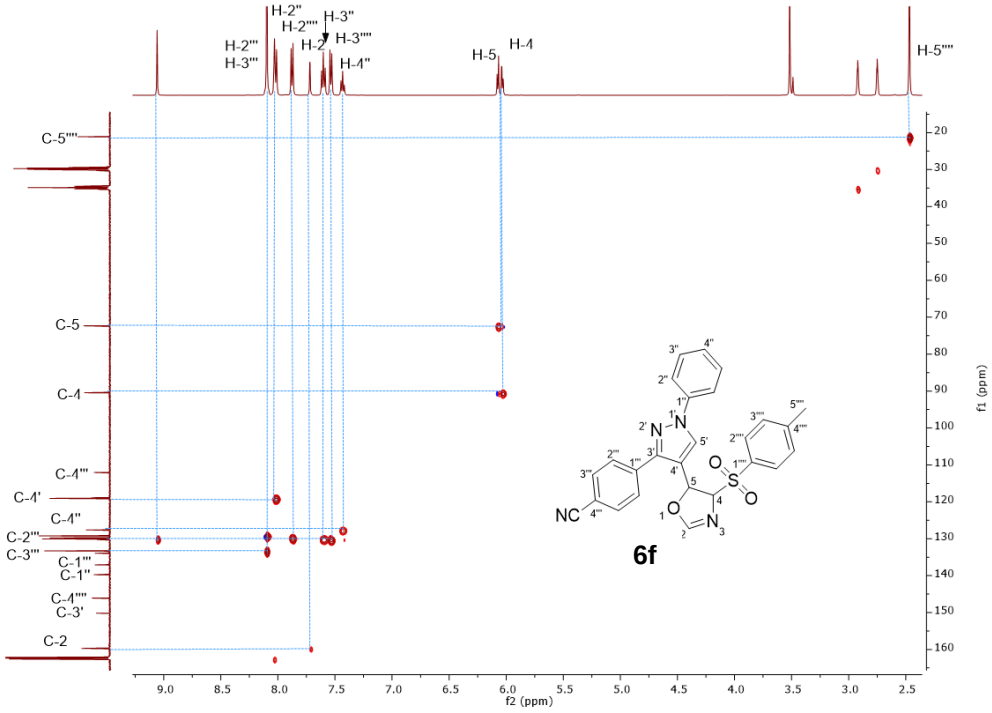


Figure S193. HSQC experiment of (4*S**, 5*S**)-4-(1-phenyl-4-(4-tosyl-4,5-dihydrooxazol-5-yl)-1*H*-pyrazol-3-yl)benzonitrile **6f**.

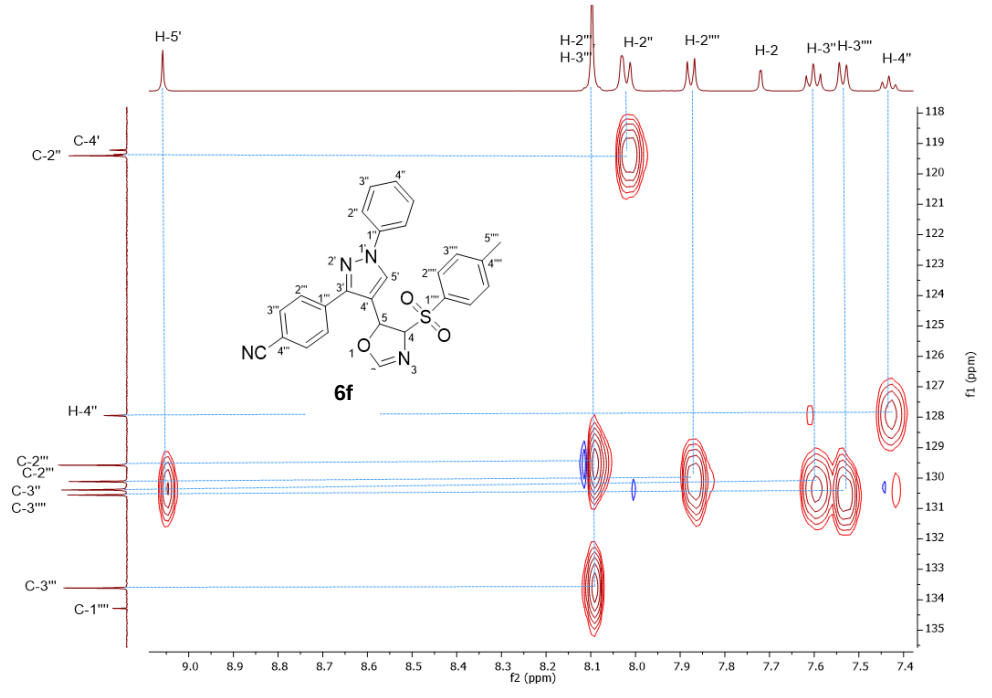


Figure S194. Expansion of HSQC experiment of (4*S**, 5*S**)-4-(1-phenyl-4-(4-tosyl-4,5-dihydrooxazol-5-yl)-1*H*-pyrazol-3-yl)benzonitrile **6f**.

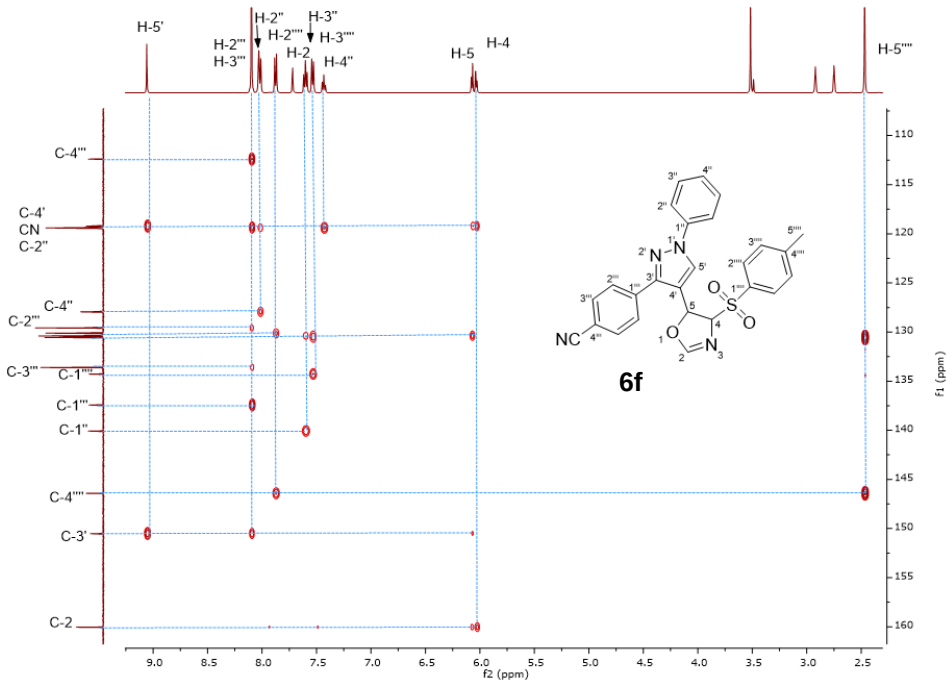
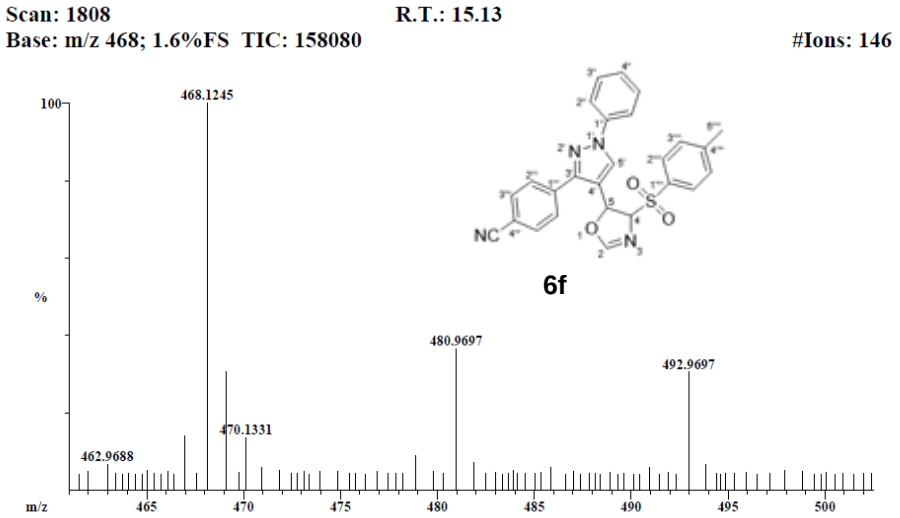


Figure S195. HMBC experiment of (4*S**, 5*S**)-4-(1-phenyl-4-(4-tosyl-4,5-dihydrooxazol-5-yl)-1*H*-pyrazol-3-yl)benzonitrile **6f**.



Selected Isotopes : $C_{0-26}H_{0-20}N_{0-4}O_{0-3}S_{0-1}$ Error Limit : 5 ppm Unsaturation Limits : 0 to 50

Measured Mass	*% Base*	*Formula*	*Calculated Mass*	*Error*	*Unsaturation*
468.1245	100.0%	$C_{26}H_{20}N_4O_3S$	468.1256	-2.4	19.0

Figure S196. HRMS of (4*S**, 5*S**)-4-(1-phenyl-4-(4-tosyl-4,5-dihydrooxazol-5-yl)-1*H*-pyrazol-3-yl)benzonitrile **6f**.

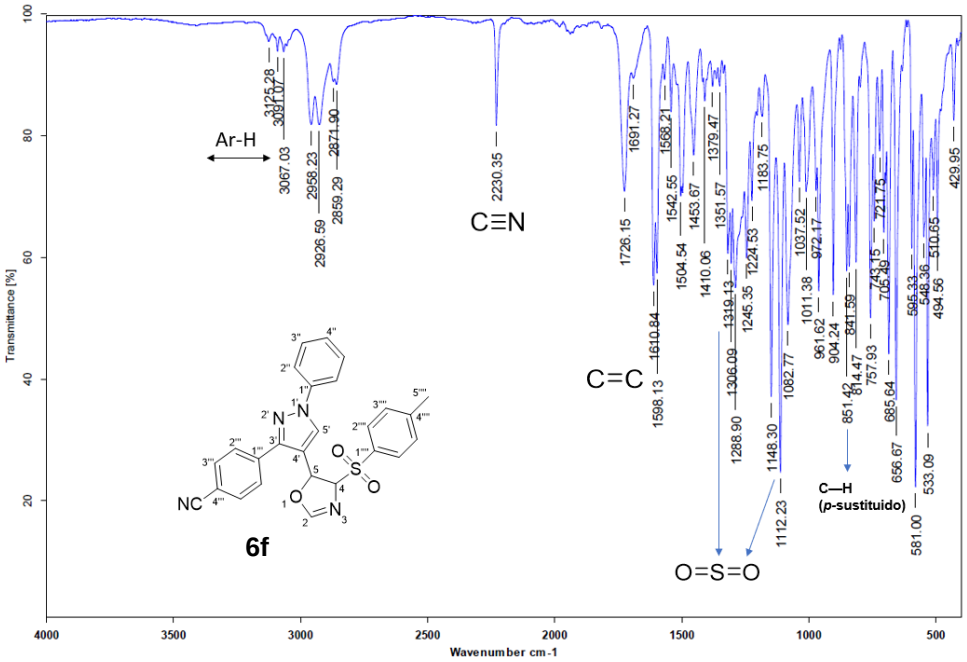


Figure S197. FT-IR of (4*S**, 5*S**)-4-(1-phenyl-4-(4-tosyl-4,5-dihydrooxazol-5-yl)-1*H*-pyrazol-3-yl)benzonitrile **6f**.

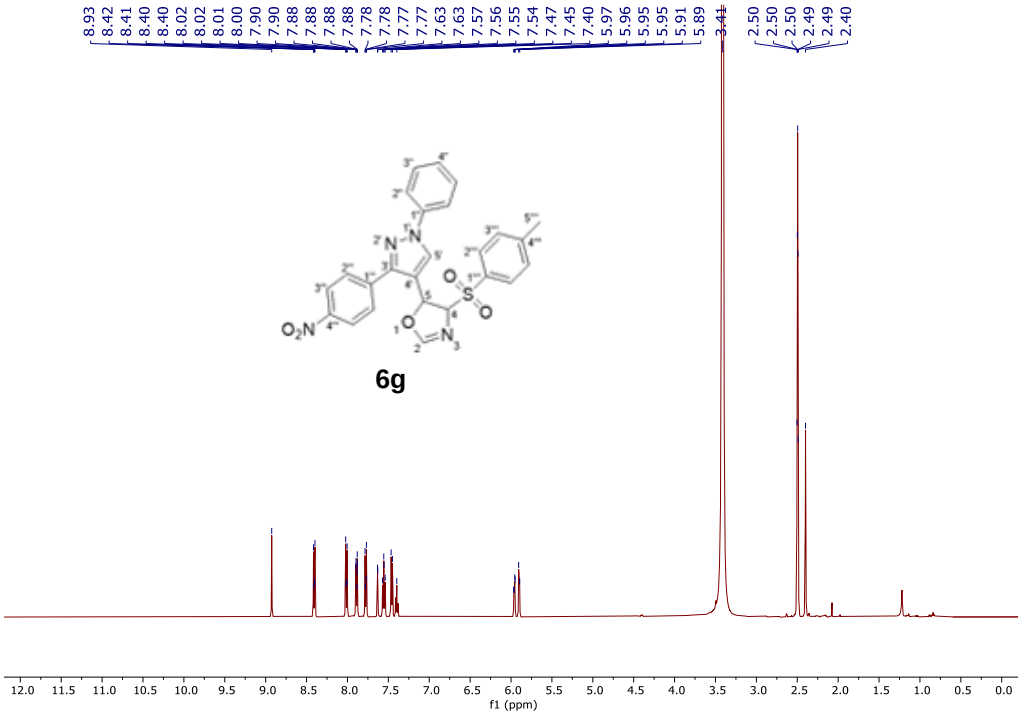


Figure S198. ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6g**.

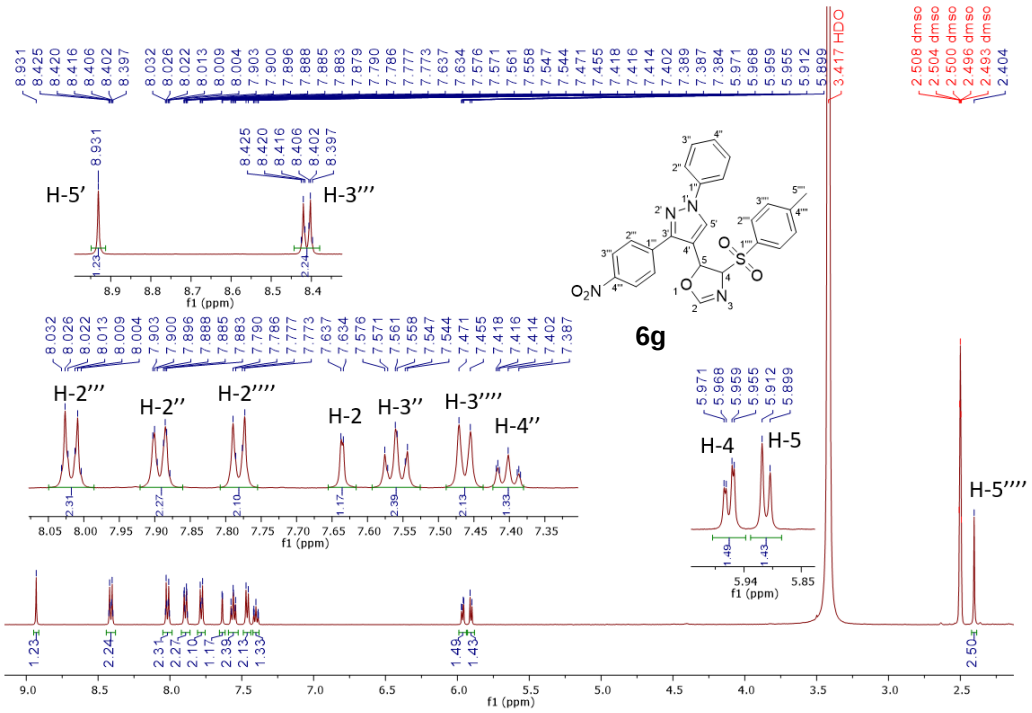


Figure S199. Expansion of ^{1}H NMR (500 MHz, DMSO-d_6) of (4*S**, 5*S**)-5-(3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6g**.

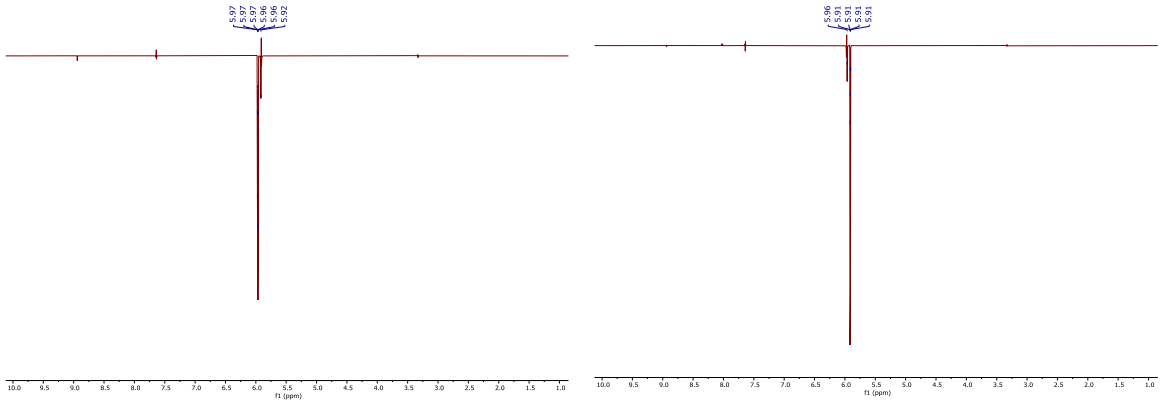


Figure S200. NOESY1D experiment of (4*S**, 5*S**)-5-(3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6g** (H-4 and H-5 were irradiated).

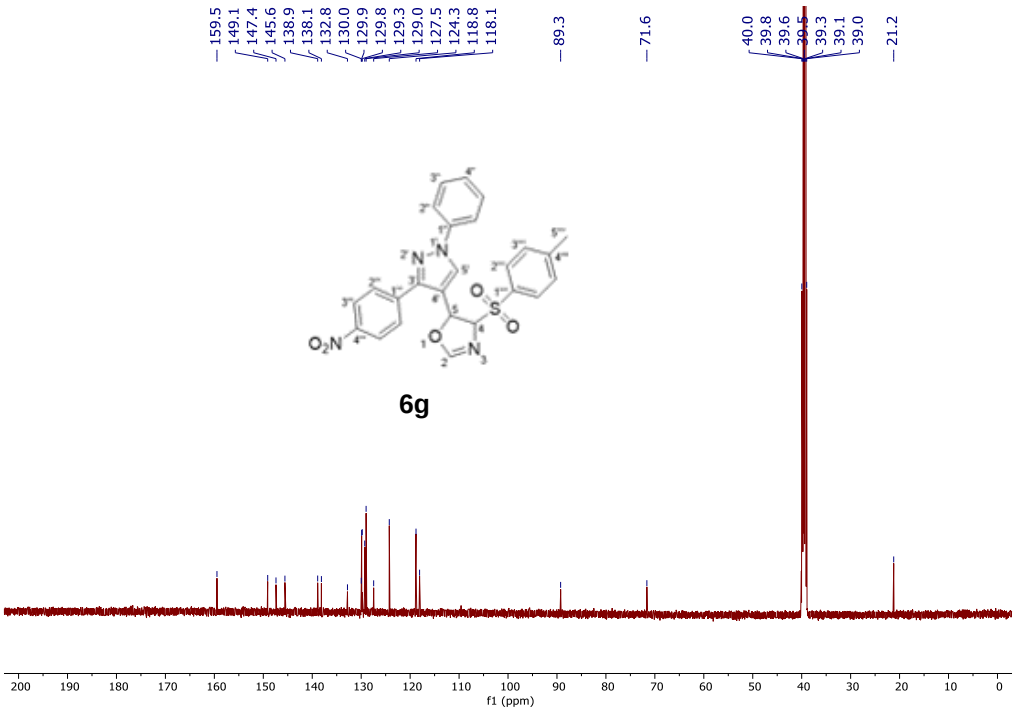


Figure S201. ^{13}C NMR (125 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6g**.

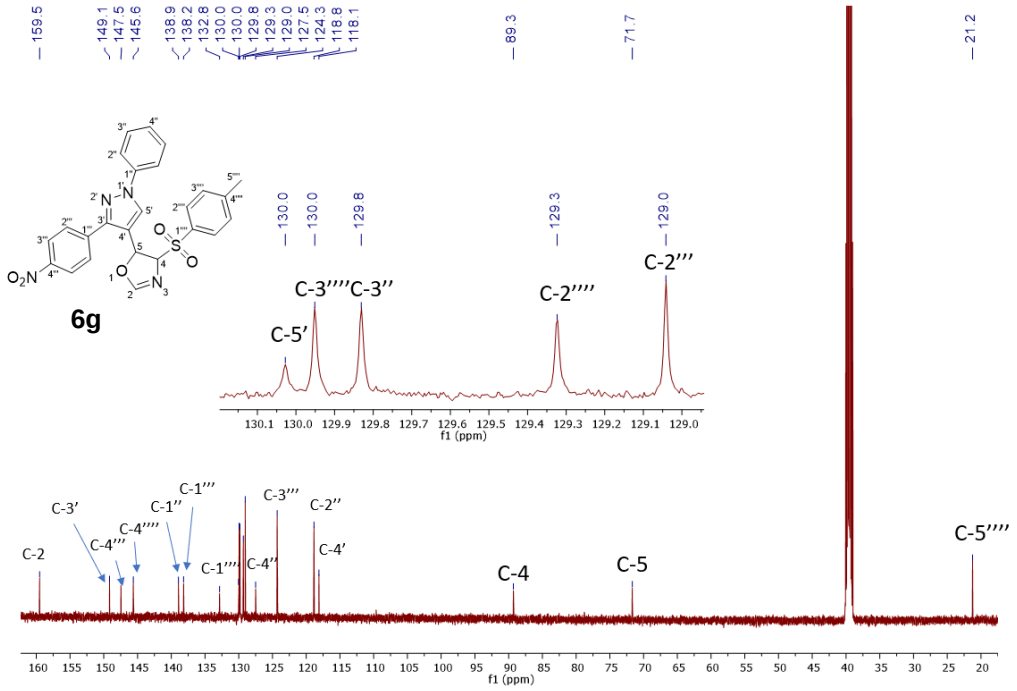


Figure S202. Expansion of ^{13}C NMR (125 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6g**.

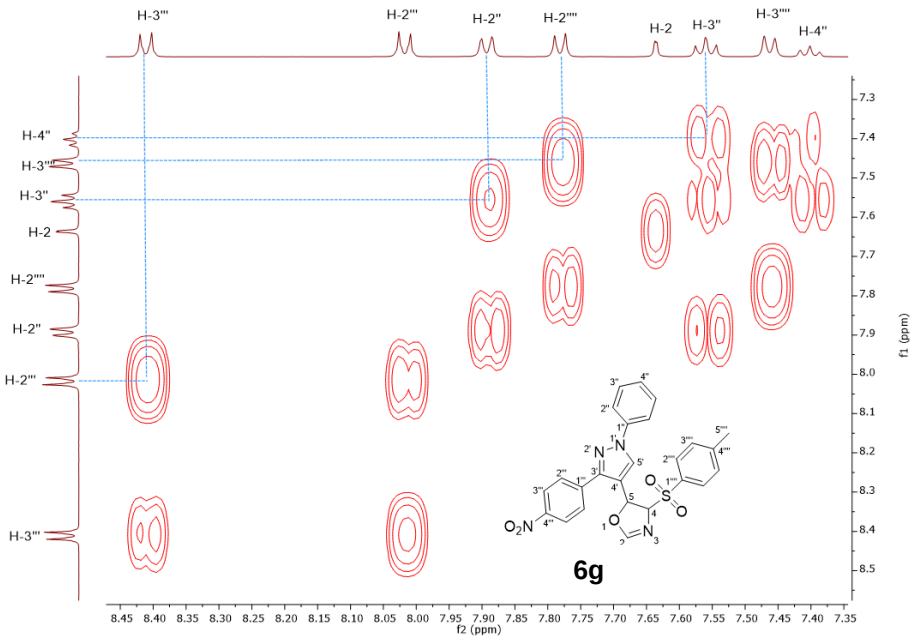


Figure S203. COSY experiment of (4*S**, 5*S**)-5-(3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6g**.

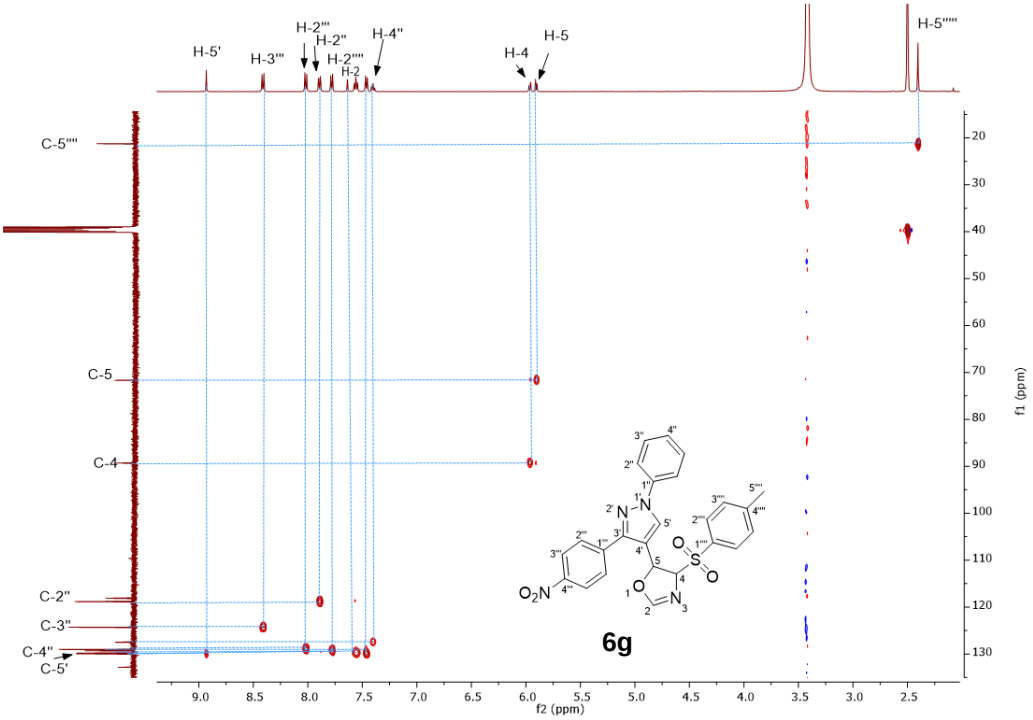


Figure S204. HSQC experiment of (4*S**, 5*S**)-5-(3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6g**.

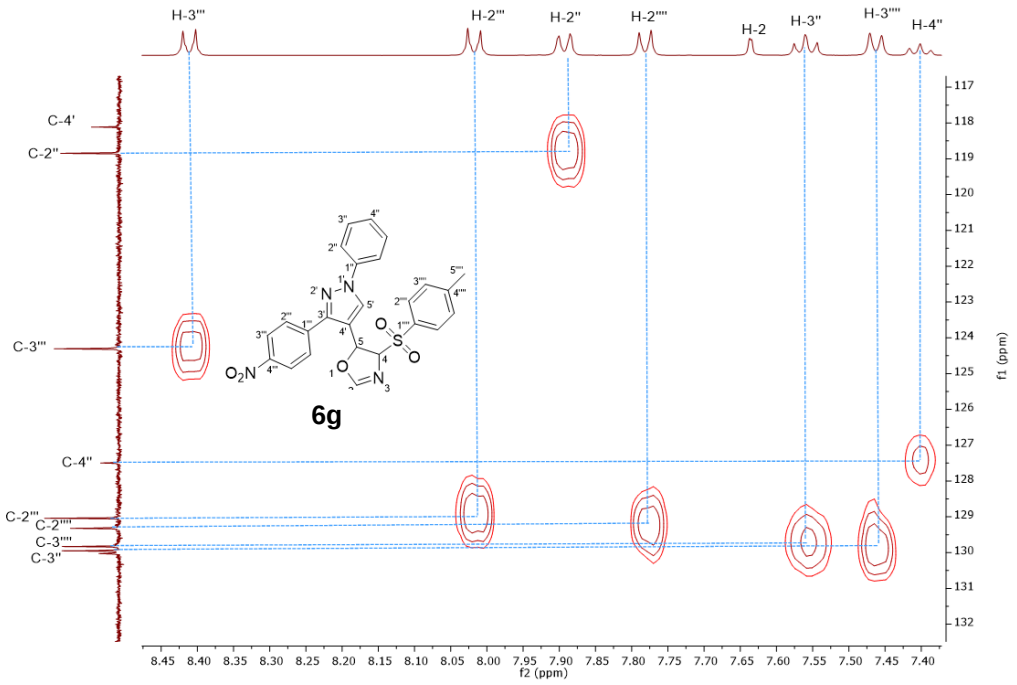


Figure S205. Expansion of HSQC experiment of (4*S**, 5*S**)-5-(3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6g**.

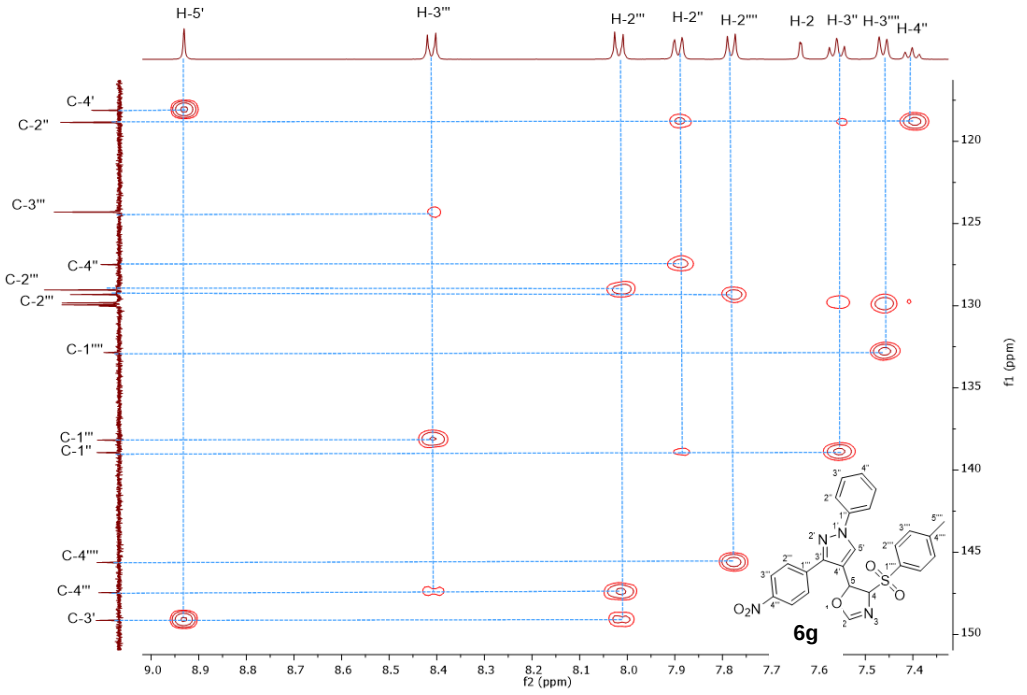


Figure S206. Expansion of HMBC experiment of (4*S**, 5*S**)-5-(3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6g**.

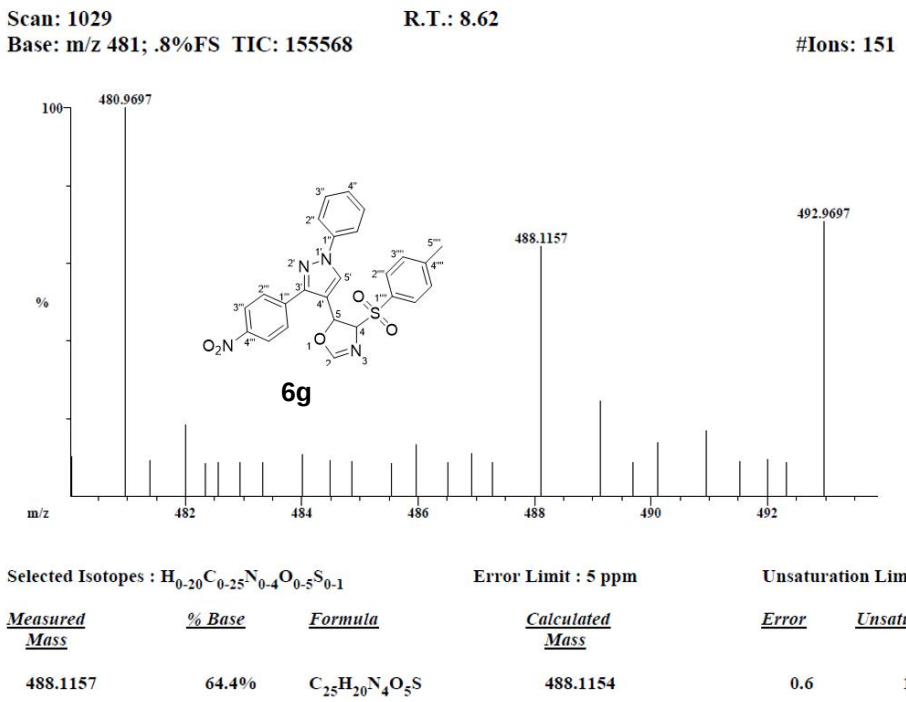


Figure S207. HRMS of (4*S**, 5*S**)-5-(3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6g**.

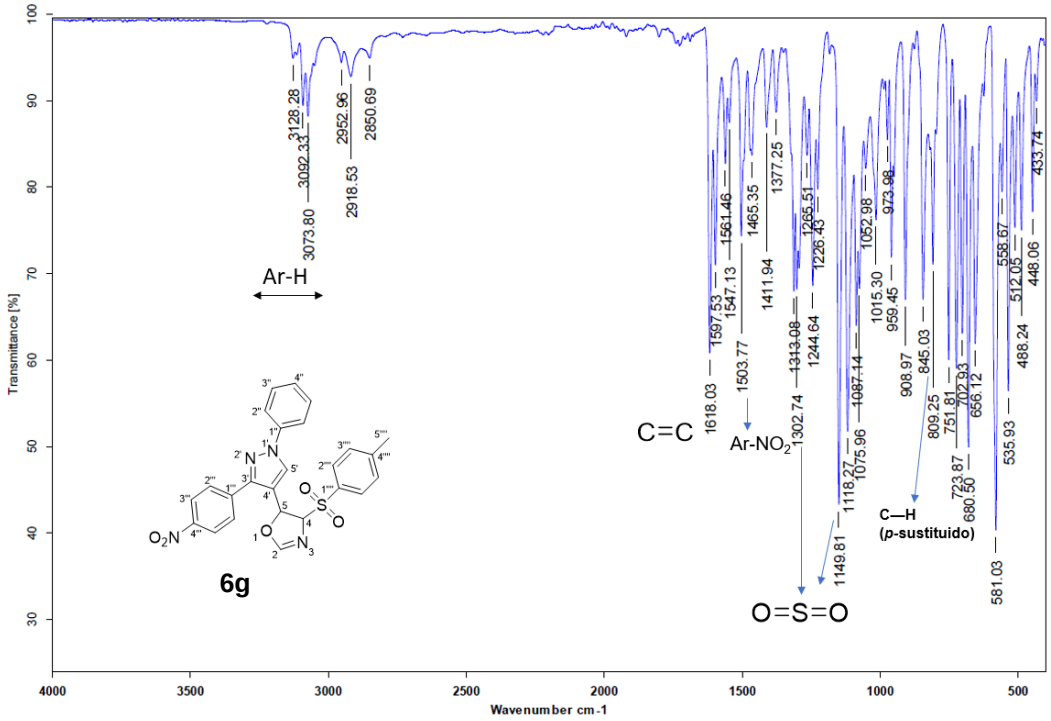


Figure S208. FT-IR of (4*S**, 5*S**)-5-(3-(4-nitrophenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6g**.

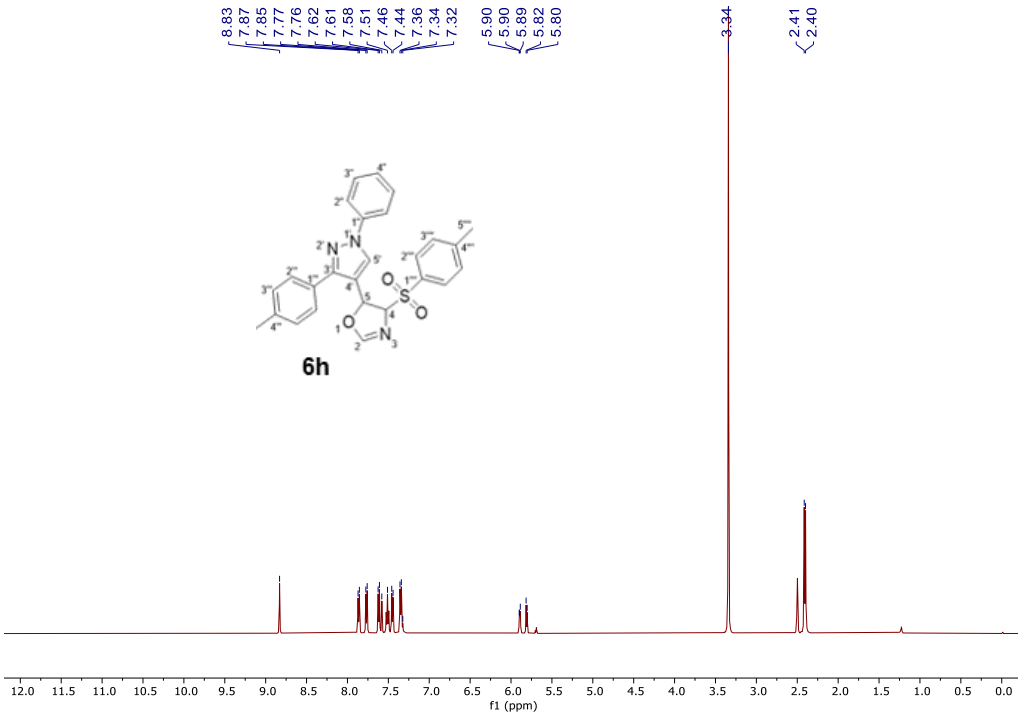


Figure S209. ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(1-phenyl-3-(*p*-tolyl)-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6h**.

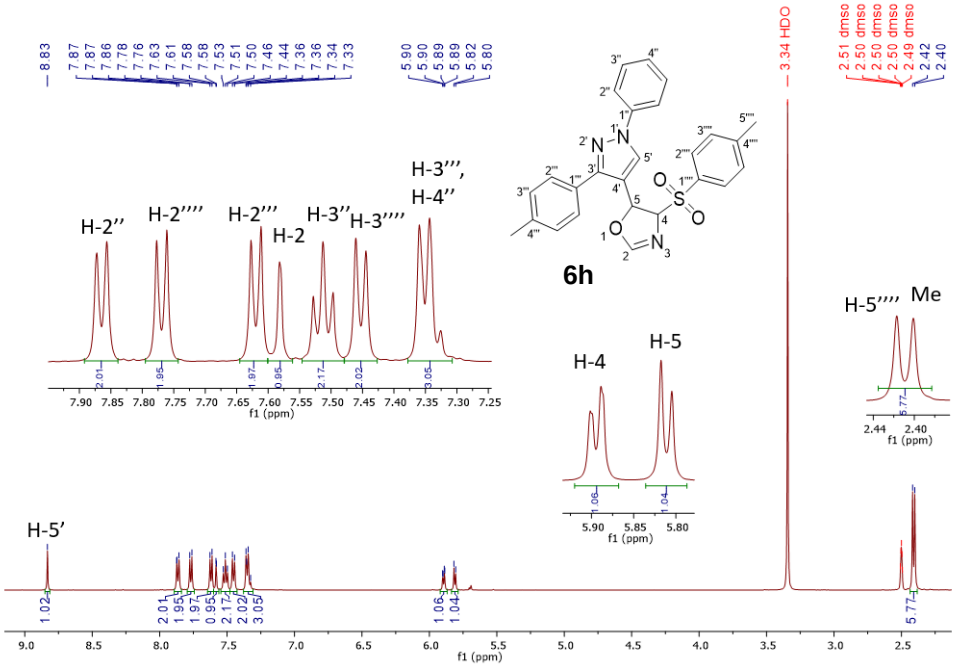


Figure S210. Expansion of ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(1-phenyl-3-(*p*-tolyl)-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6h**.

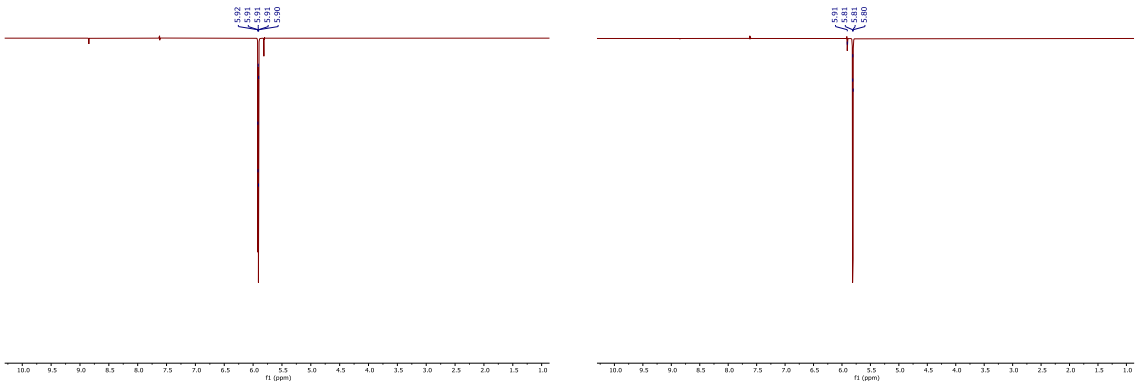


Figure S211. NOESY experiment of (4*S**, 5*S**)-5-(1-phenyl-3-(*p*-tolyl)-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6h** (H-4 and H-5 were irradiated).

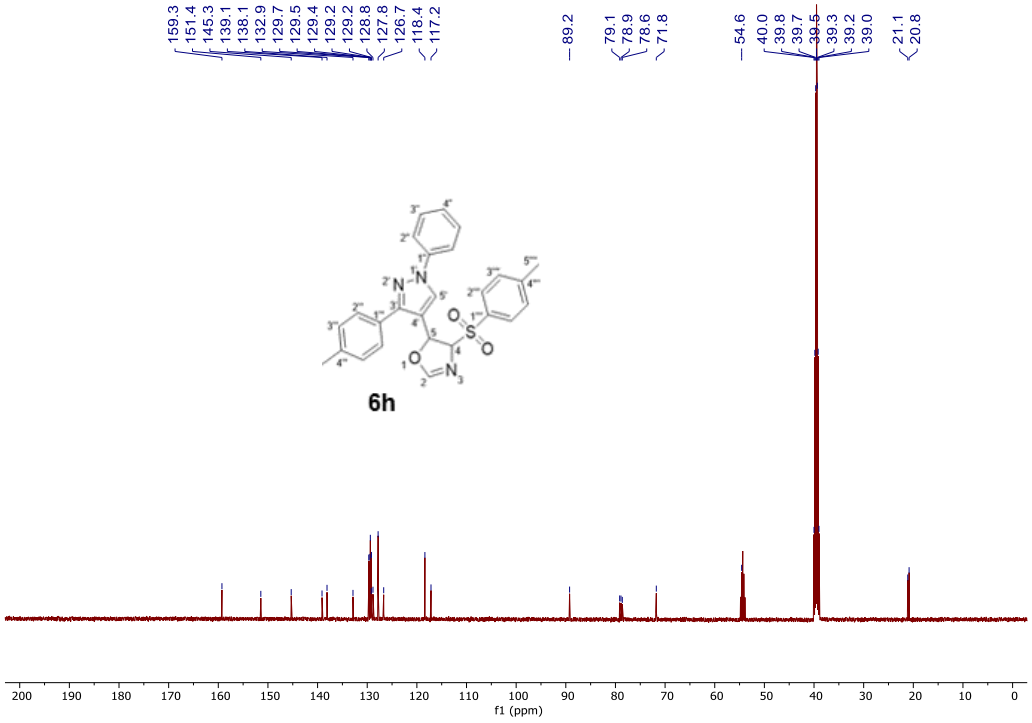


Figure S212. ^{13}C NMR (125 MHz, DMSO-d_6) of (4*S**, 5*S**)-5-(1-phenyl-3-(*p*-tolyl)-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6h**.

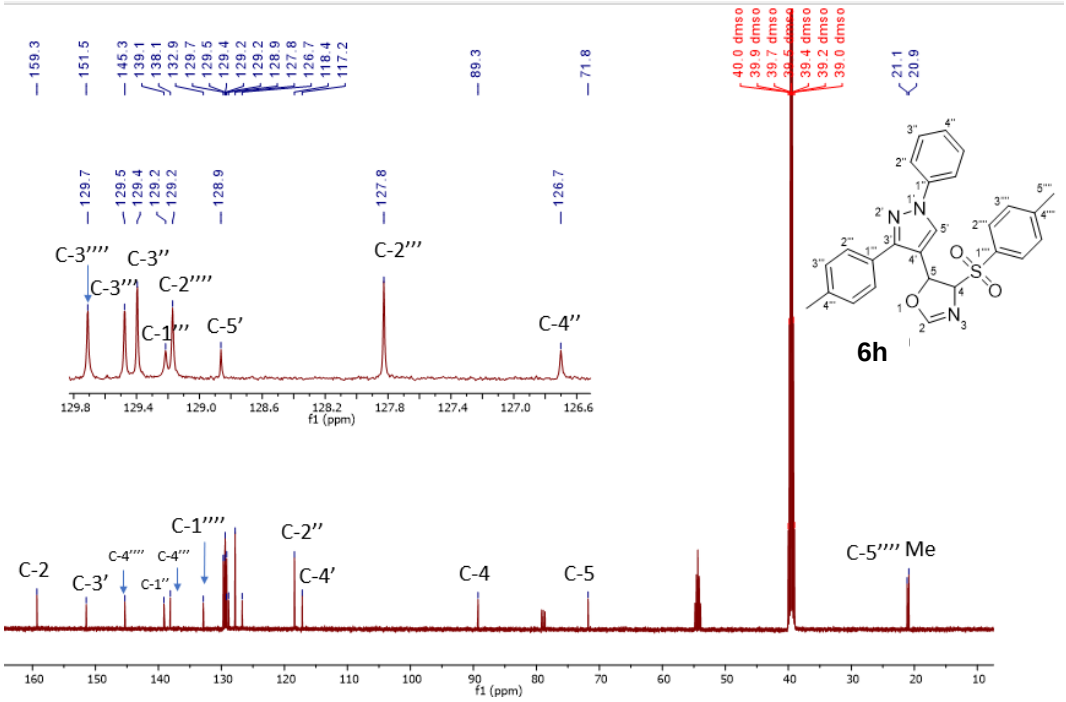


Figure S213. Expansion of ^{13}C NMR (125 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(1-phenyl-3-(*p*-tolyl)-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6h**.

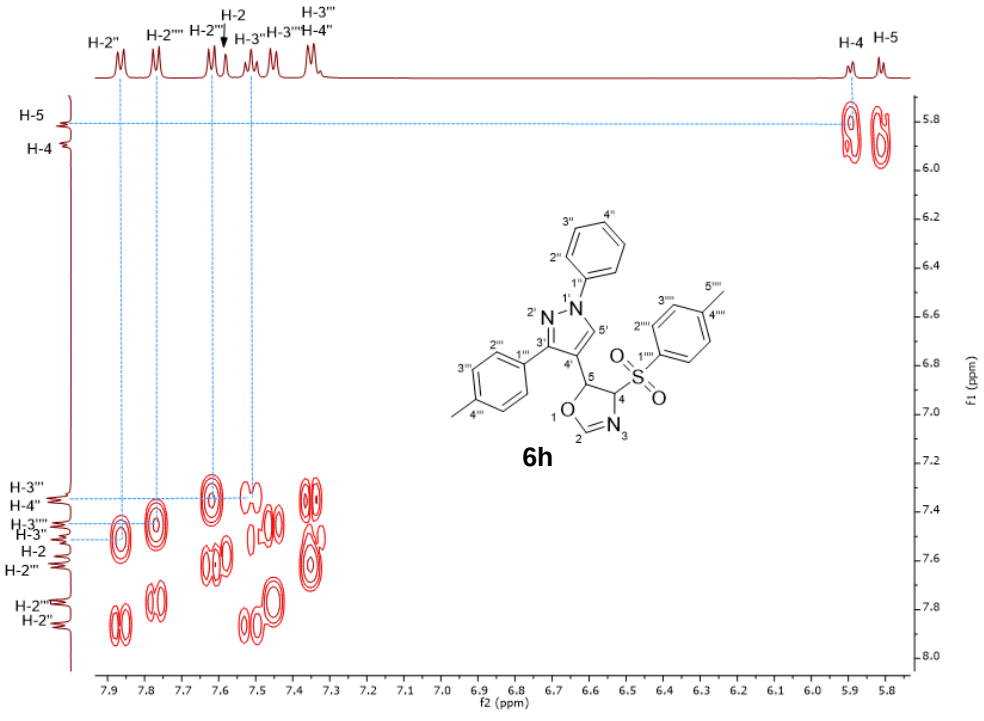


Figure S214. COSY experiment of (4*S**, 5*S**)-5-(1-phenyl-3-(*p*-tolyl)-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6h**.

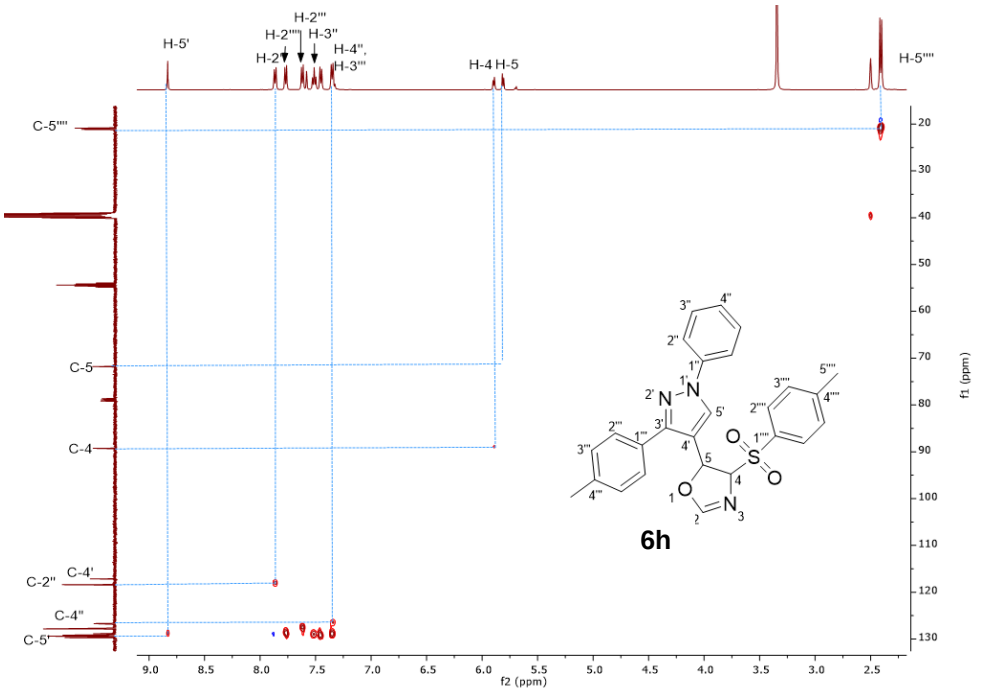


Figure S215. HSQC experiment of (4*S**, 5*S**)-5-(1-phenyl-3-(*p*-tolyl)-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6h**.

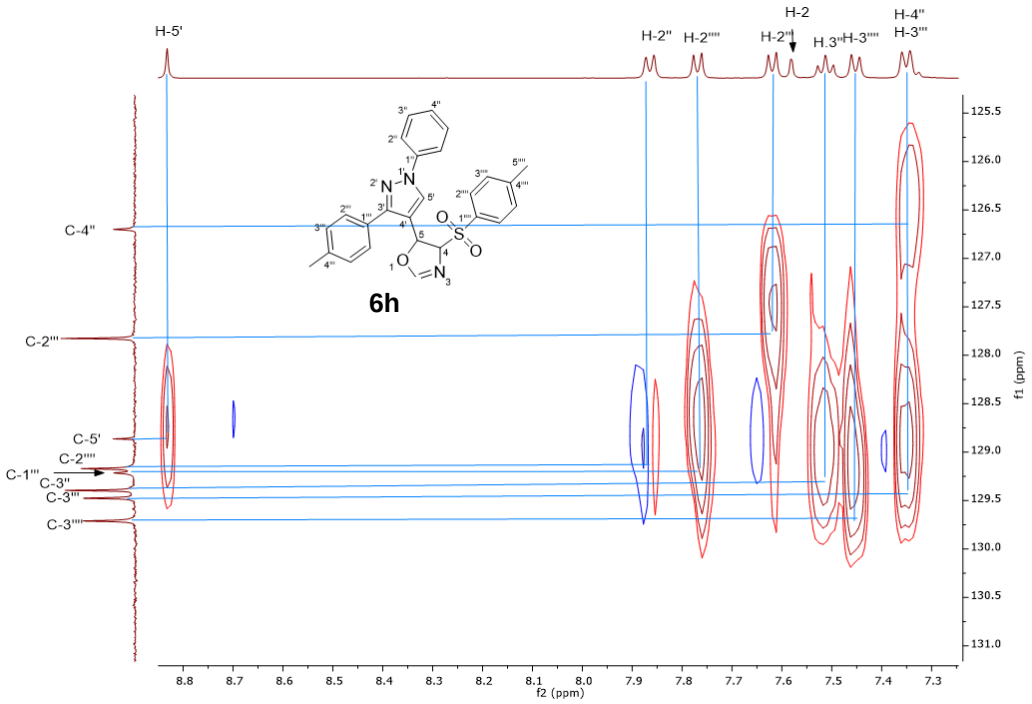


Figure S216. Expansion of HSQC experiment of (4*S**, 5*S**)-5-(1-phenyl-3-(*p*-tolyl)-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6h**.

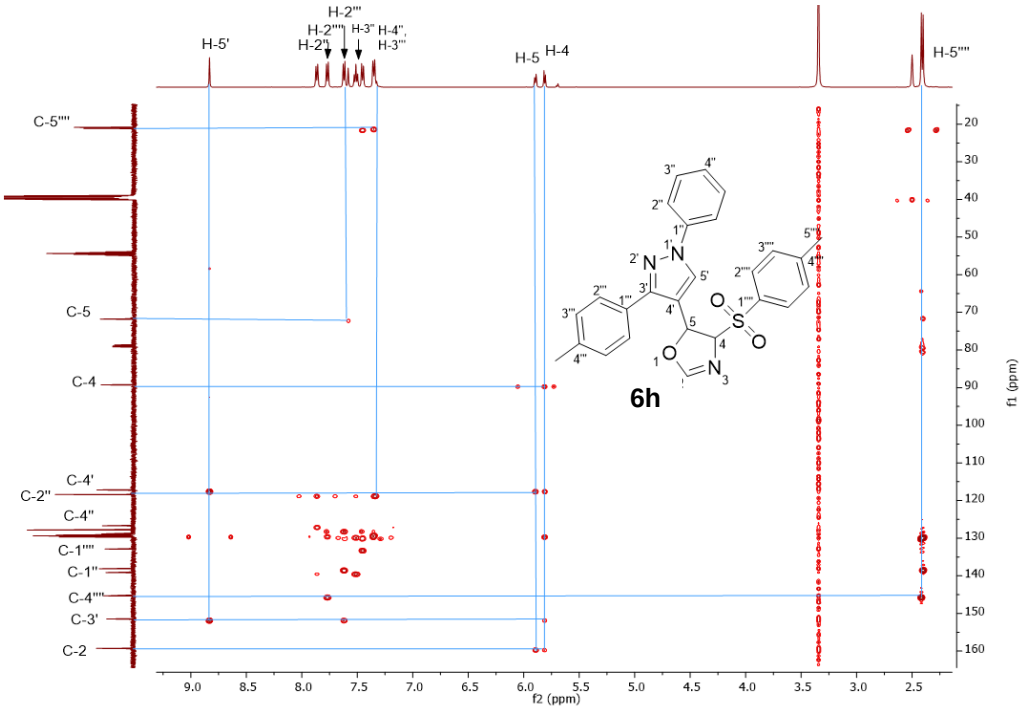


Figure S217. HMBC experiment of (4*S**, 5*S**)-5-(1-phenyl-3-(*p*-tolyl)-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6h**.

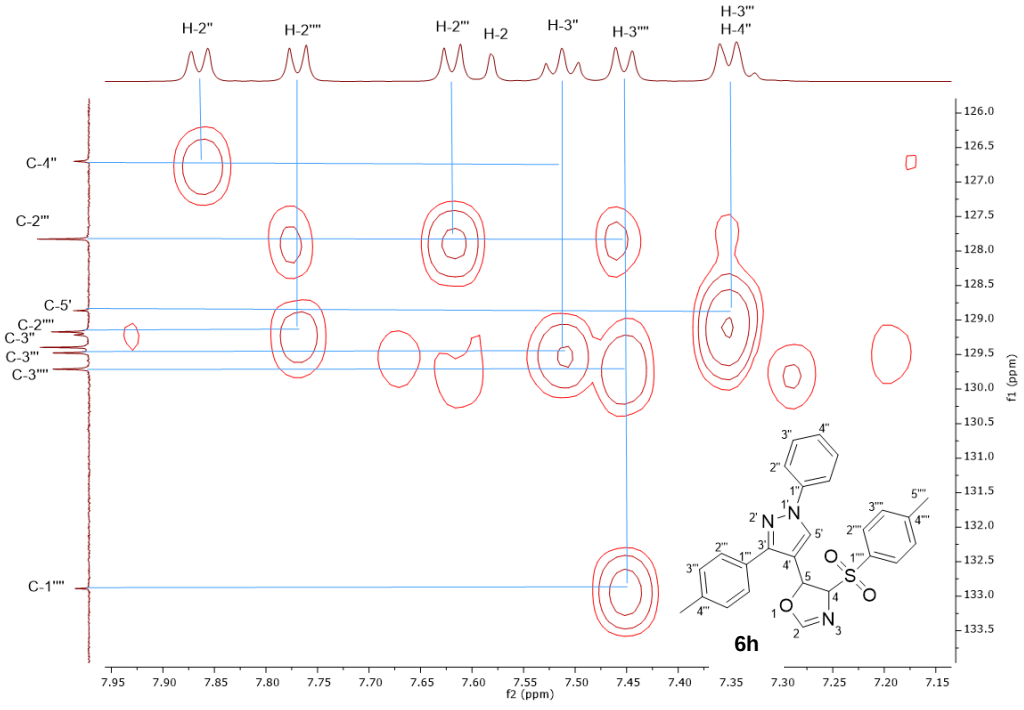


Figure S218. Expansion of HMBC experiment of (4*S**, 5*S**)-5-(1-phenyl-3-(*p*-tolyl)-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6h**.

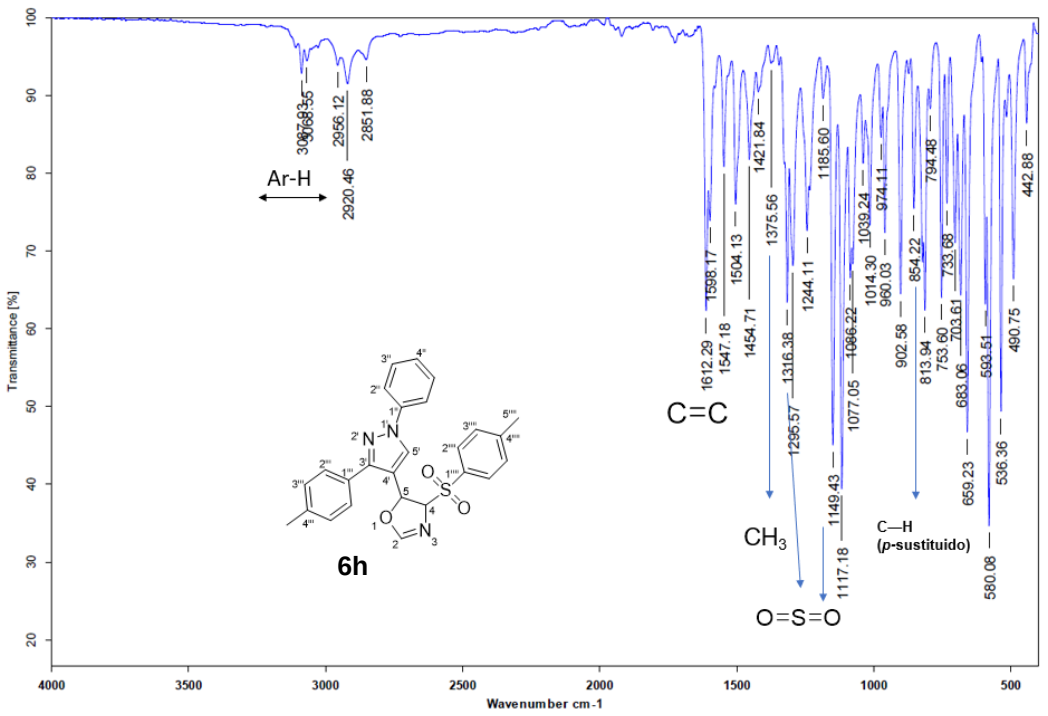


Figure S219. FT-IR of (4*S**, 5*S**)-5-(1-phenyl-3-(*p*-tolyl)-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6h**.

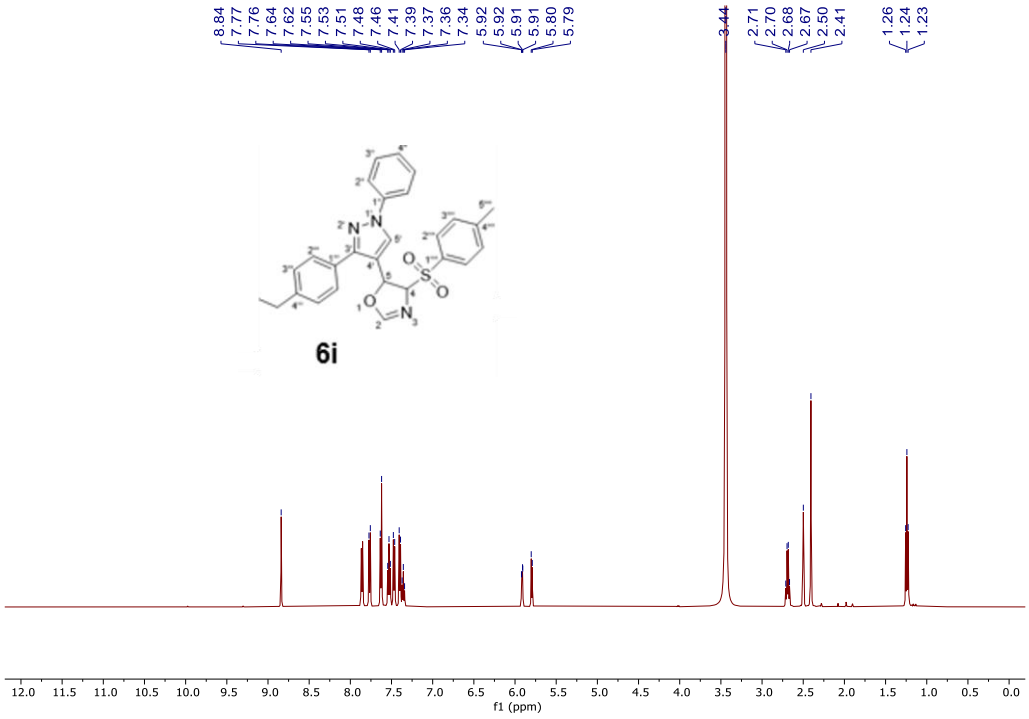


Figure S220. ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6i**.

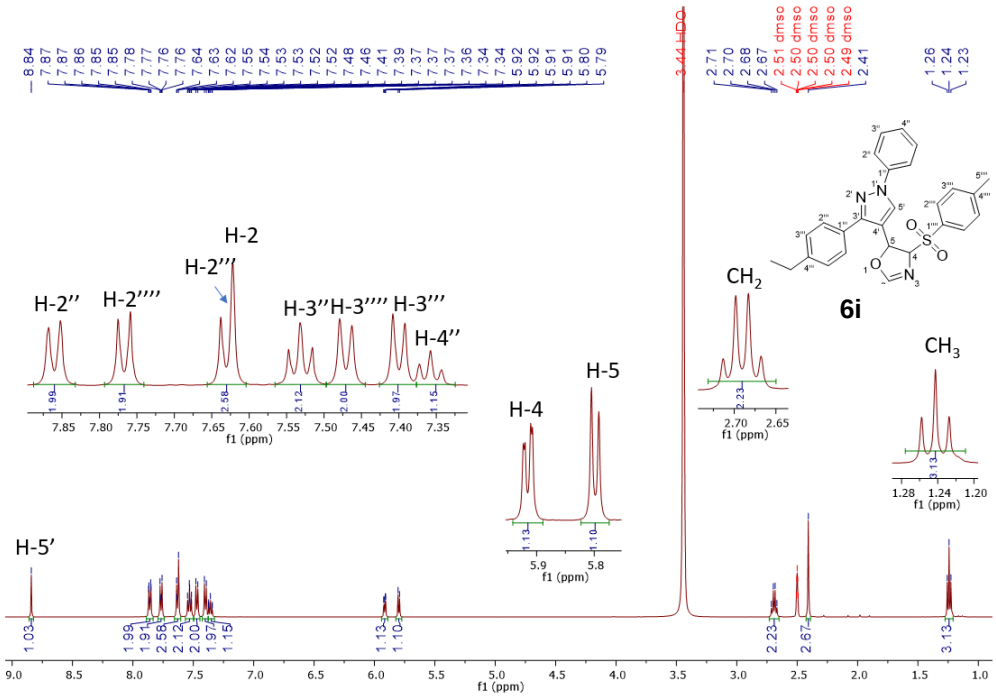


Figure S221. Expansion of ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6i**.

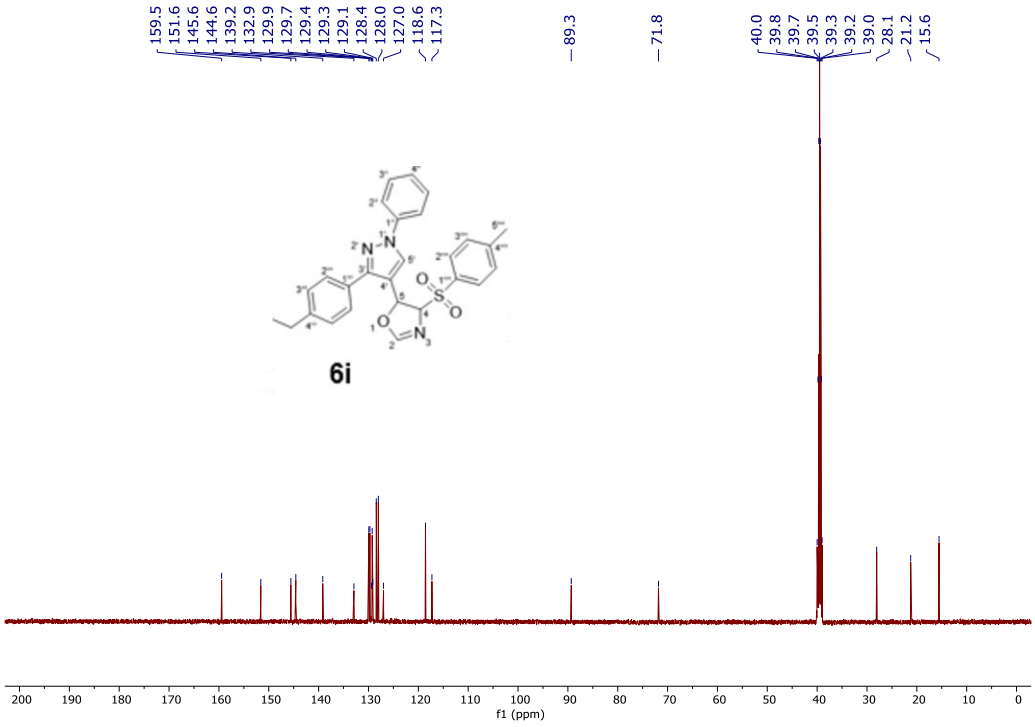


Figure S222. ^{13}C NMR (125 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6i**.

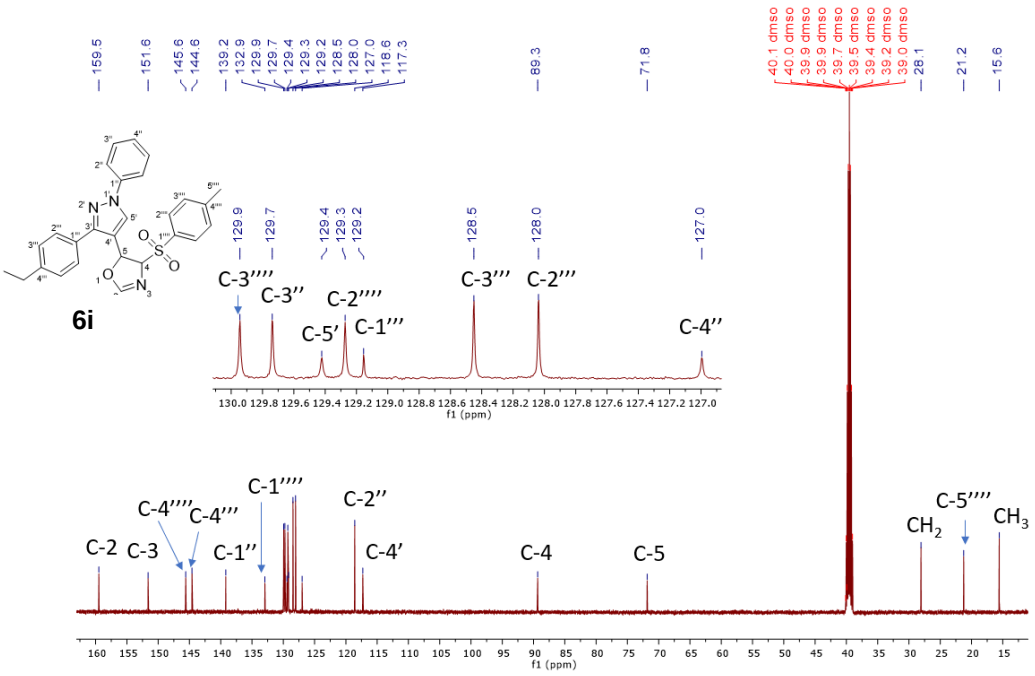


Figure S223. Expansion of ^{13}C NMR (125 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6i**.

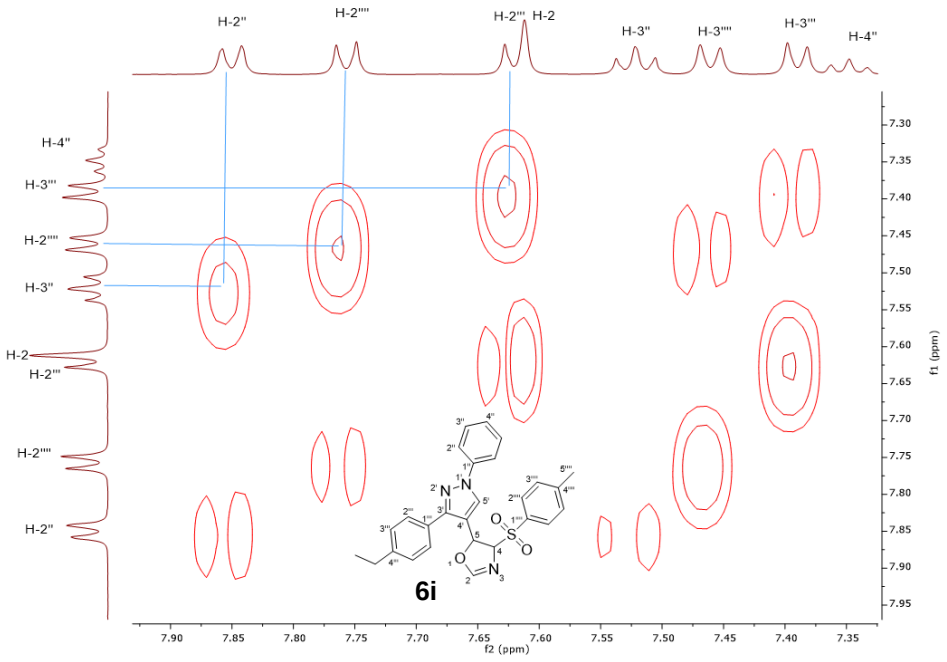


Figure S224. Expansion of COSY experiment of (4*S**, 5*S**)-5-(3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6i**.

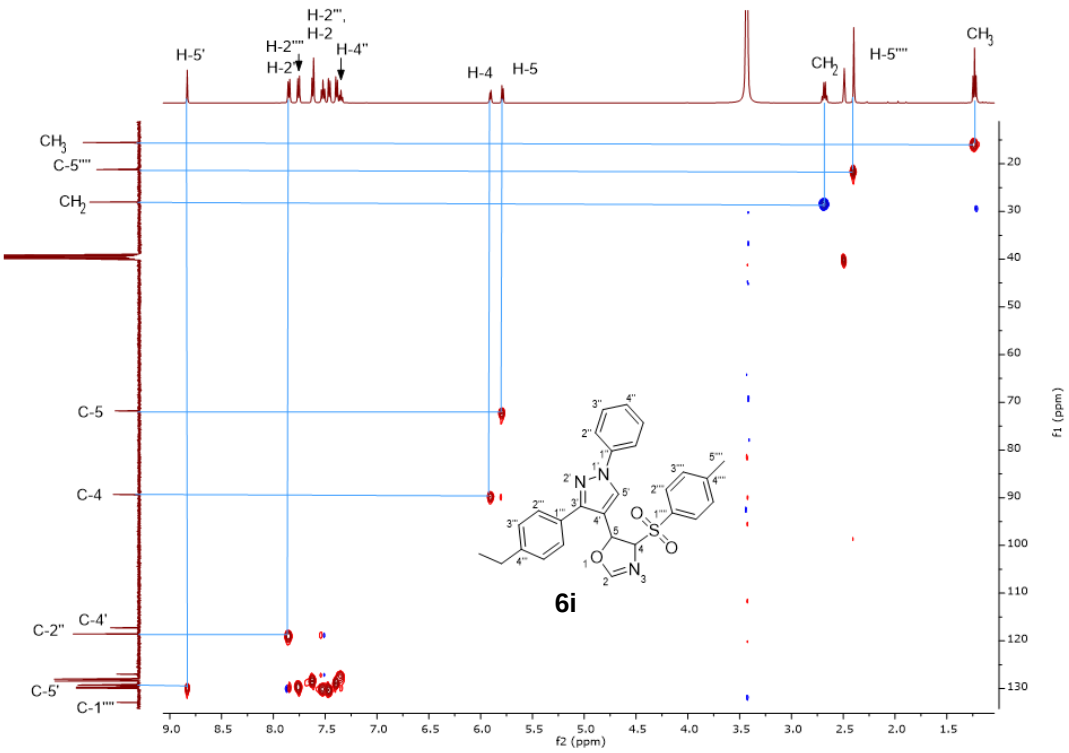


Figure S225. HSQC experiment of (4*S**, 5*S**)-5-(3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6i**.

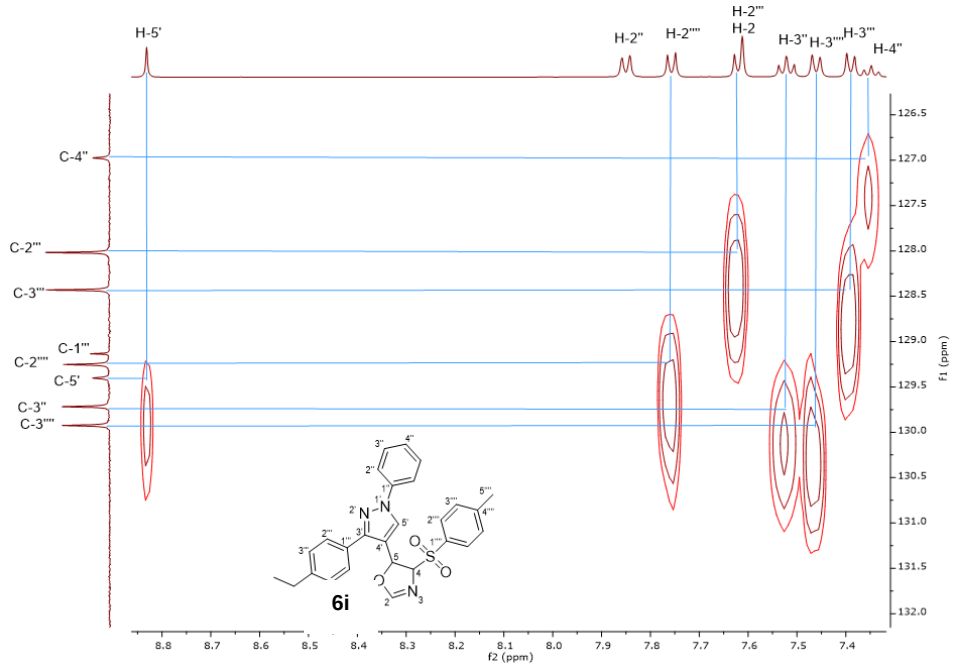


Figure S226. Expansion of HSQC experiment of (4*S**, 5*S**)-5-(3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6i**.

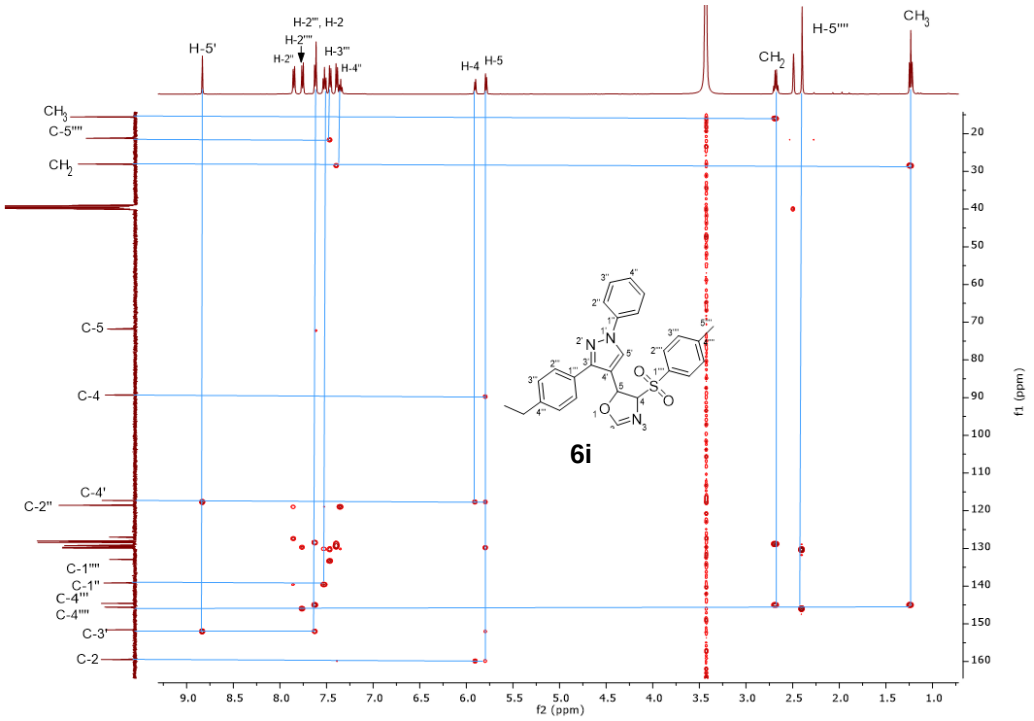


Figure S227. HMBC experiment of (4*S**, 5*S**)-5-(3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6i**.

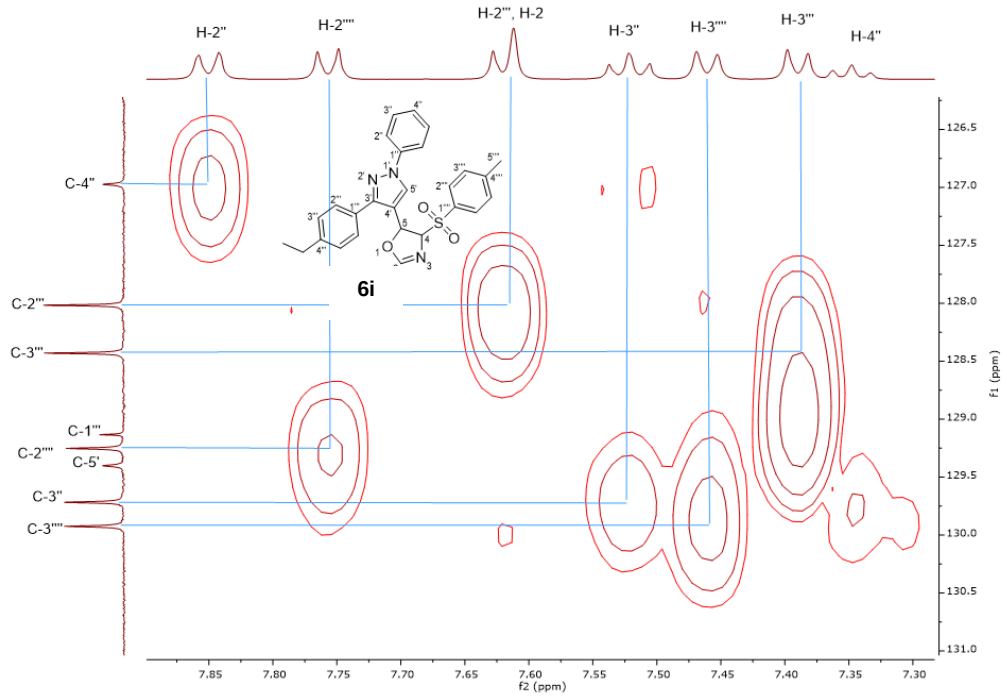


Figure S228. Expansion of HMBC experiment of (4*S**, 5*S**)-5-(3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6i**.

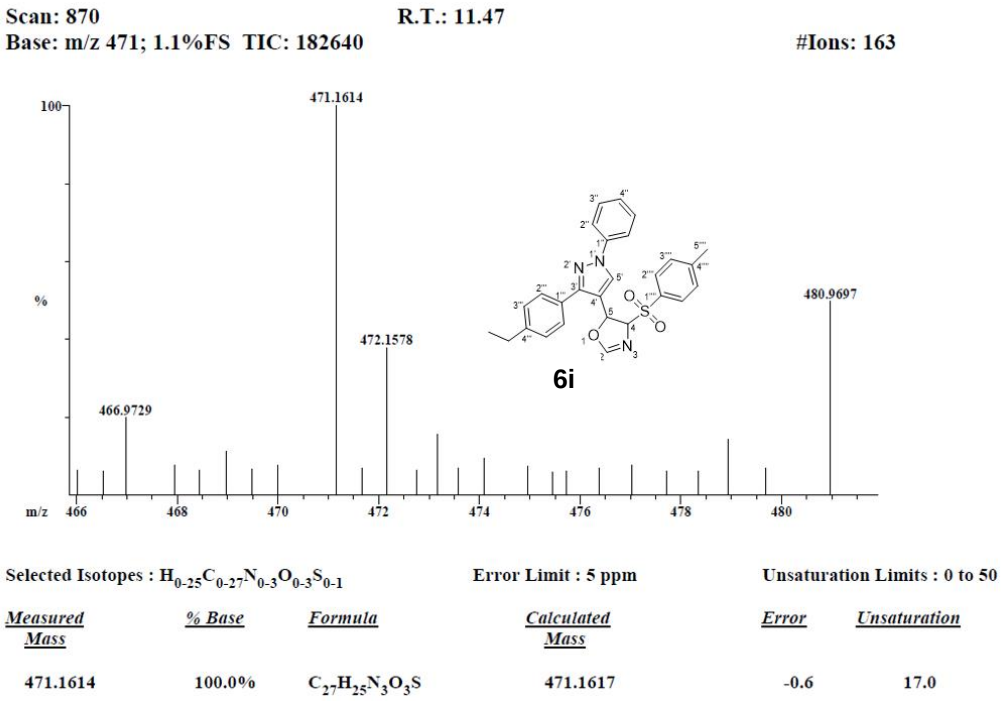


Figure S229. HRMS of (4*S**, 5*S**)-5-(3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6i**.

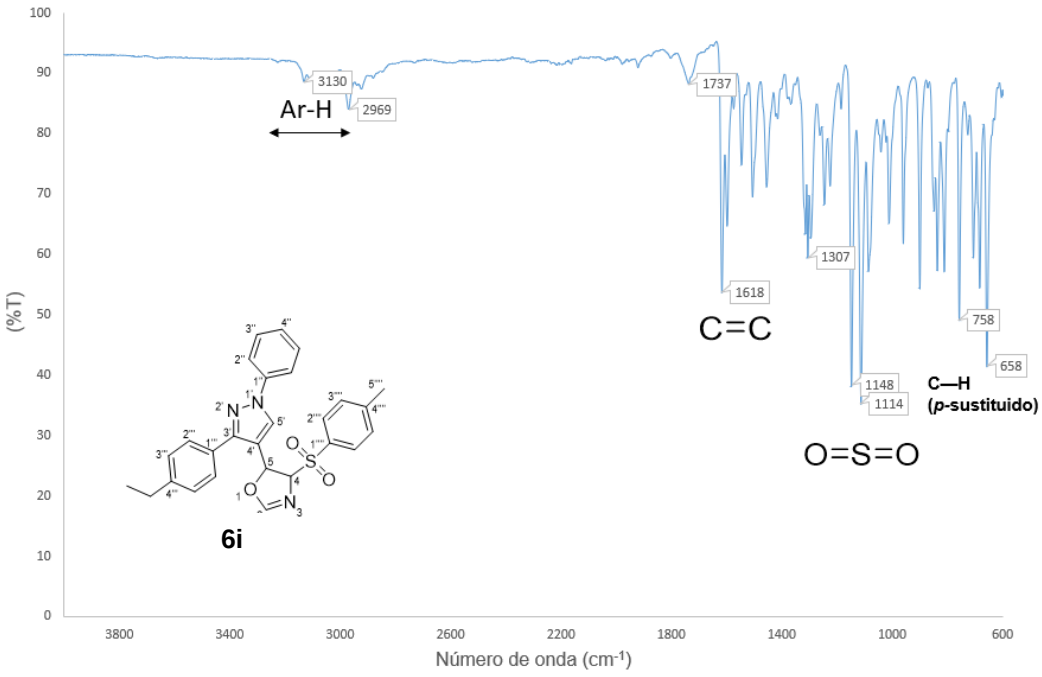


Figure S230. FT-IR of (4*S**, 5*S**)-5-(3-(4-ethylphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6i**.

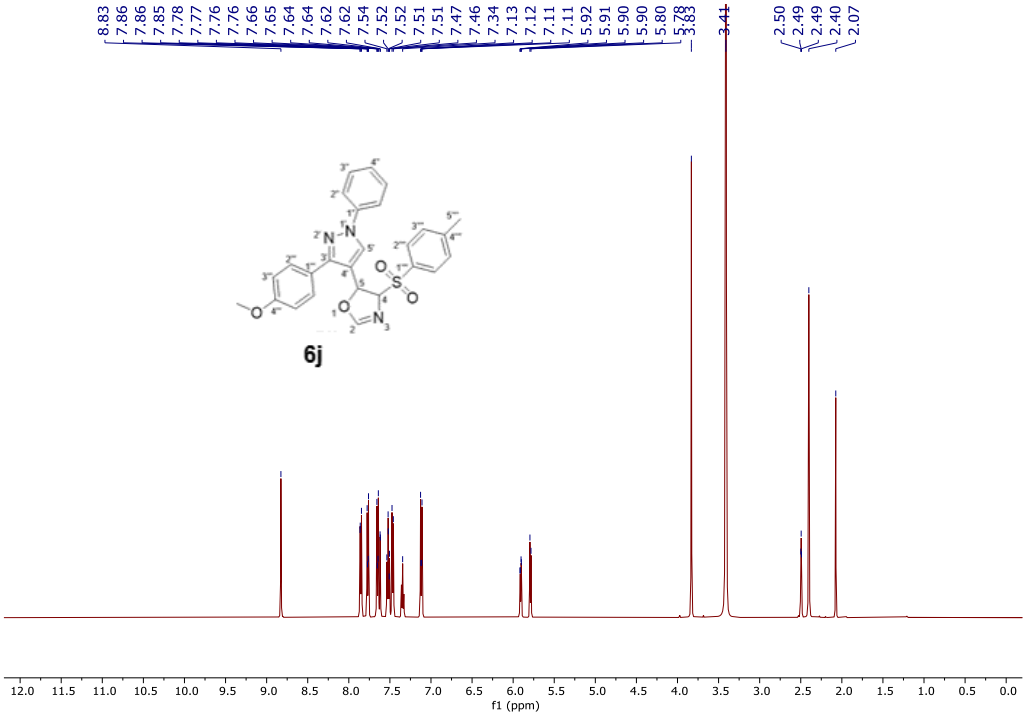


Figure S231. ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6j**.

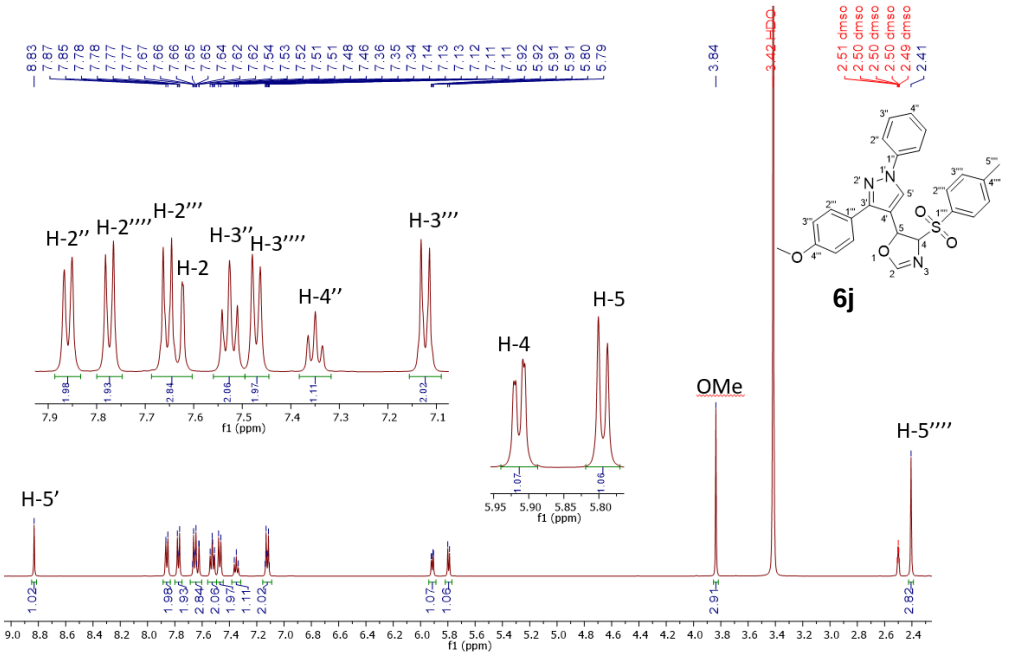


Figure S232. Expansion of ^{1}H NMR (500 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6j**.

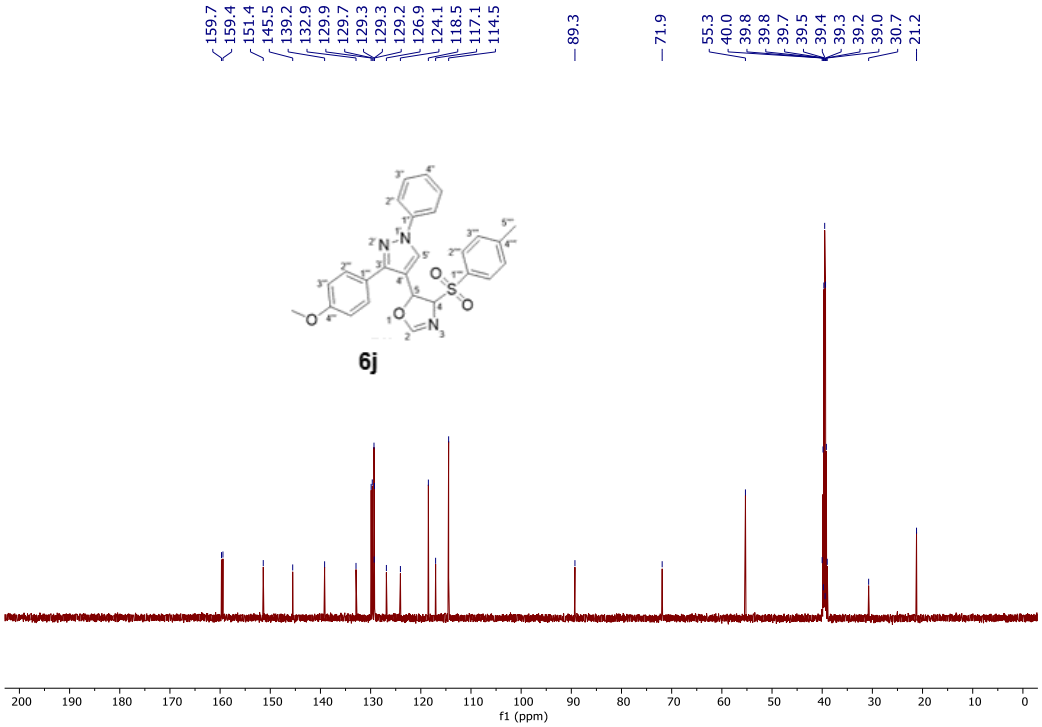


Figure S233. ^{13}C NMR (125 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6j**.

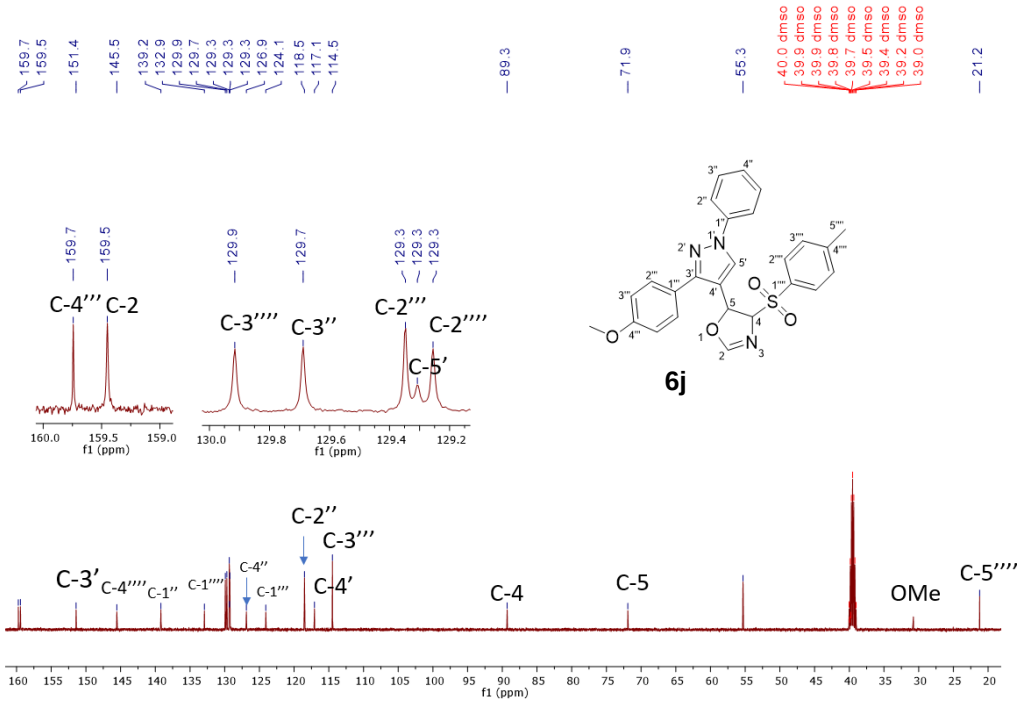


Figure S234. Expansion of ^{13}C NMR (125 MHz, DMSO-d$_6$) of (4*S**, 5*S**)-5-(3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6j**.

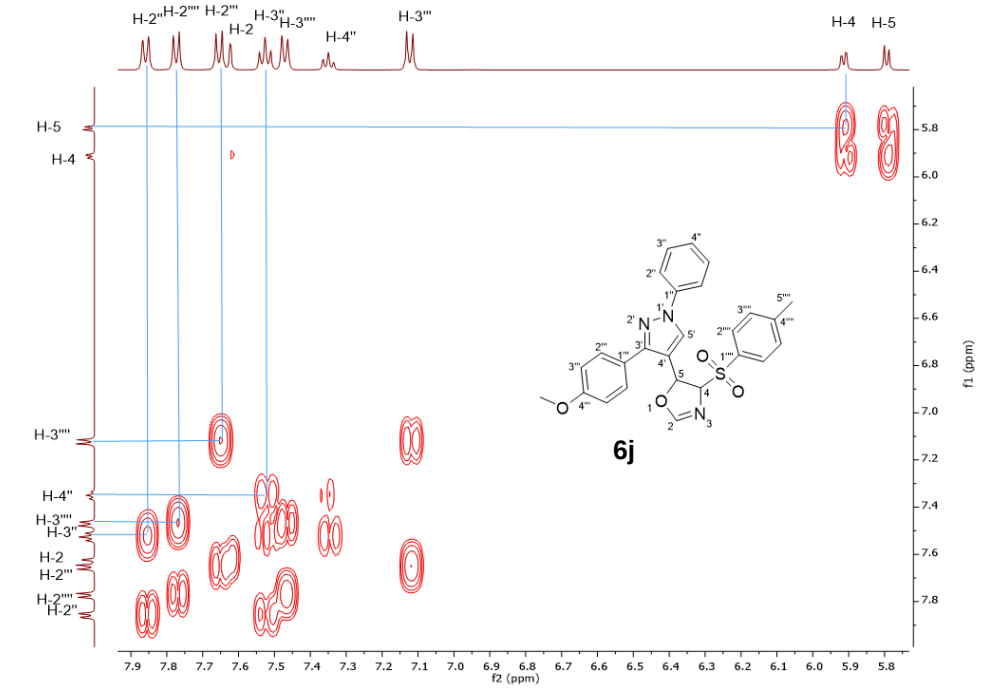


Figure S235. COSY experiment of (4*S**, 5*S**)-5-(3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6j**.

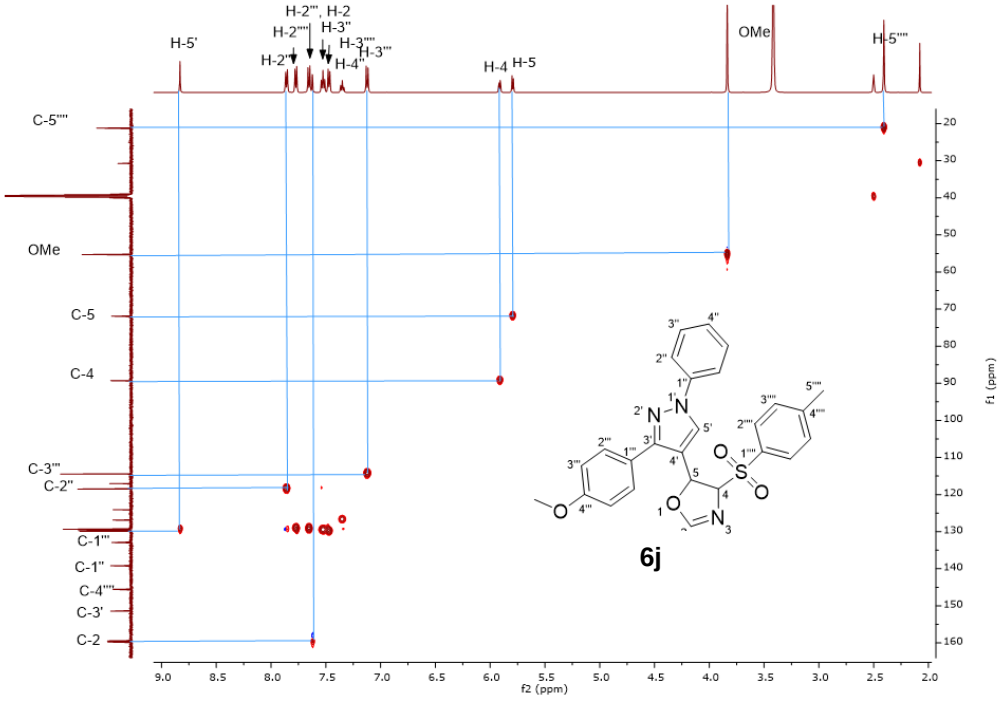


Figure S236. HSQC experiment of (4*S**, 5*S**)-5-(3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6j**.

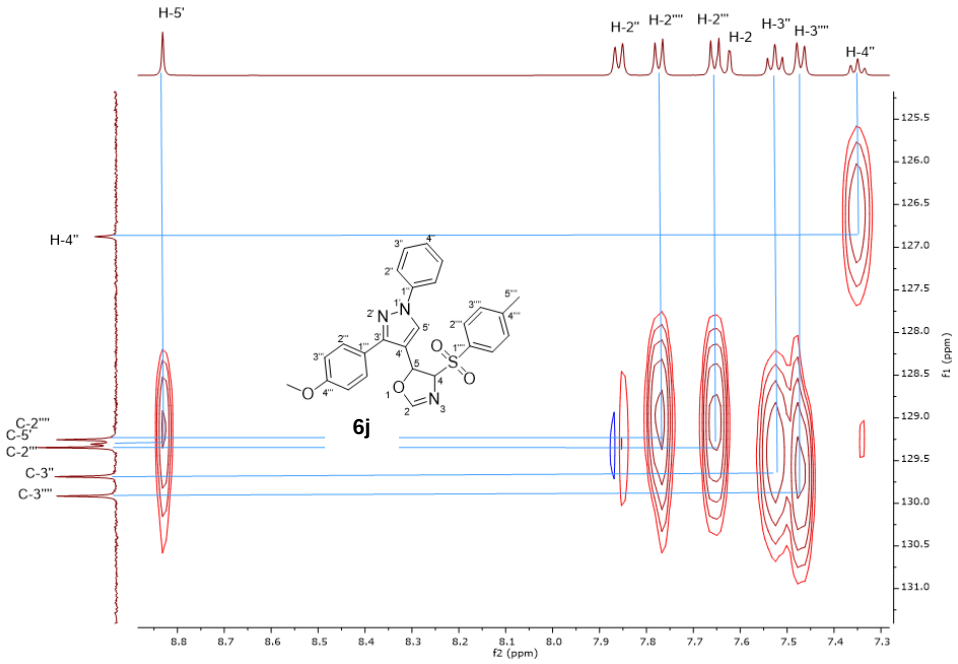


Figure S237. Expansion of HSQC experiment of (4*S**, 5*S**)-5-(3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6j**.

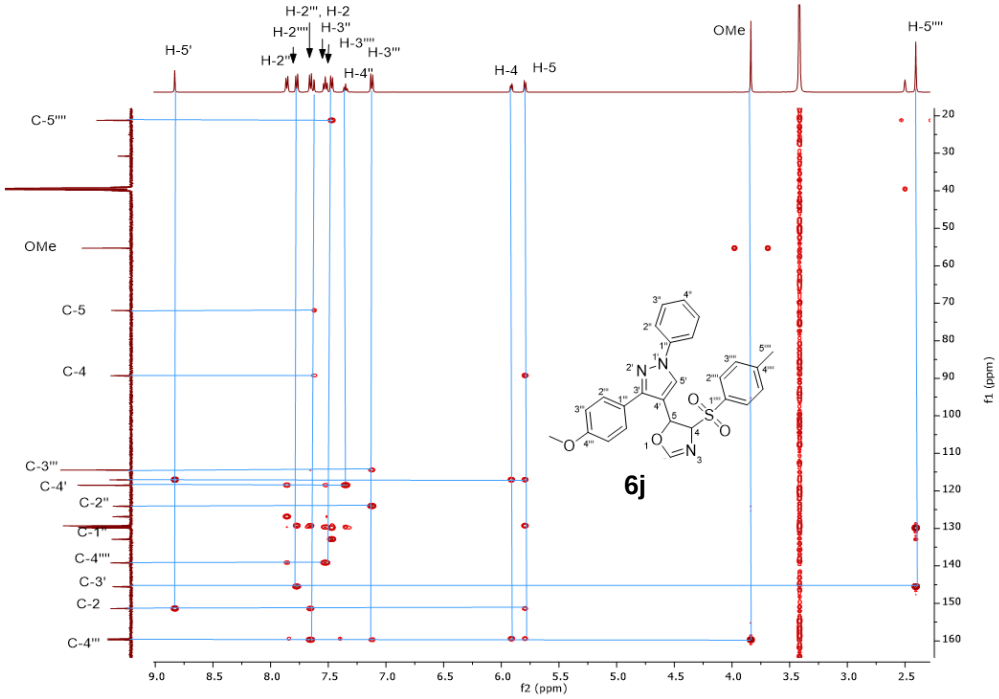


Figure S238. HMBC experiment of (4*S**, 5*S**)-5-(3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6j**.

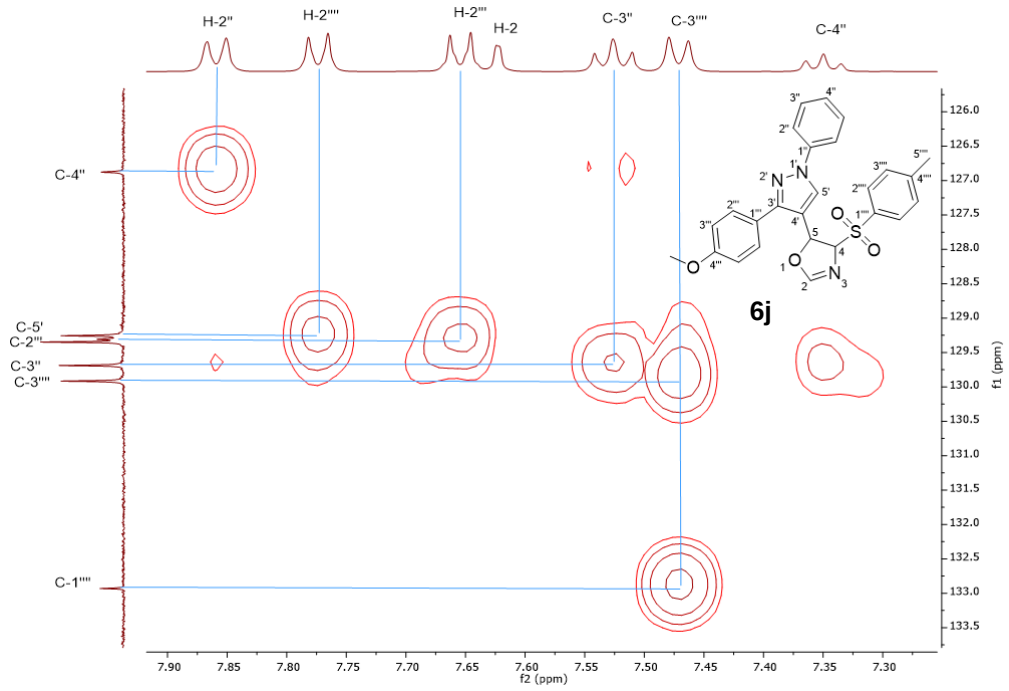


Figure S239. Expansion of HMBC experiment of (4*S**, 5*S**)-5-(3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6j**.

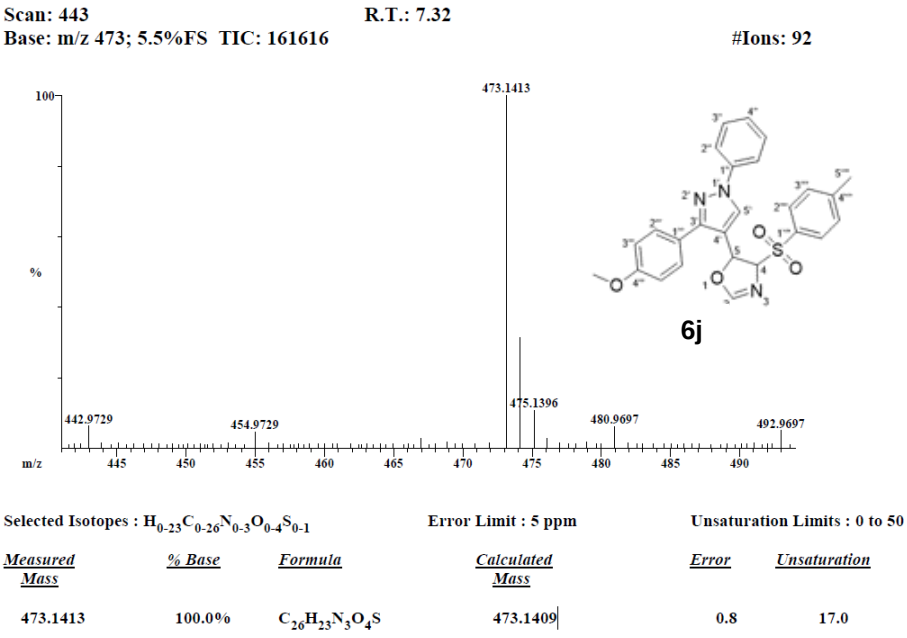


Figure S240. HRMS of (4*S**, 5*S**)-5-(3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6j**.

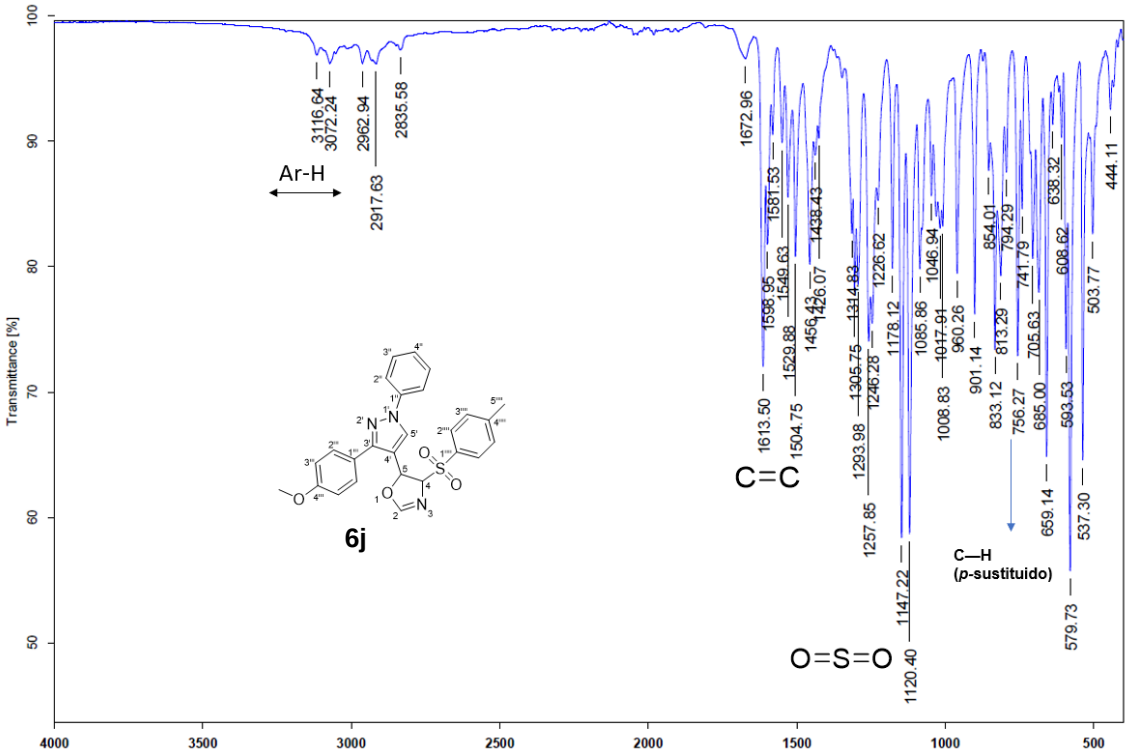
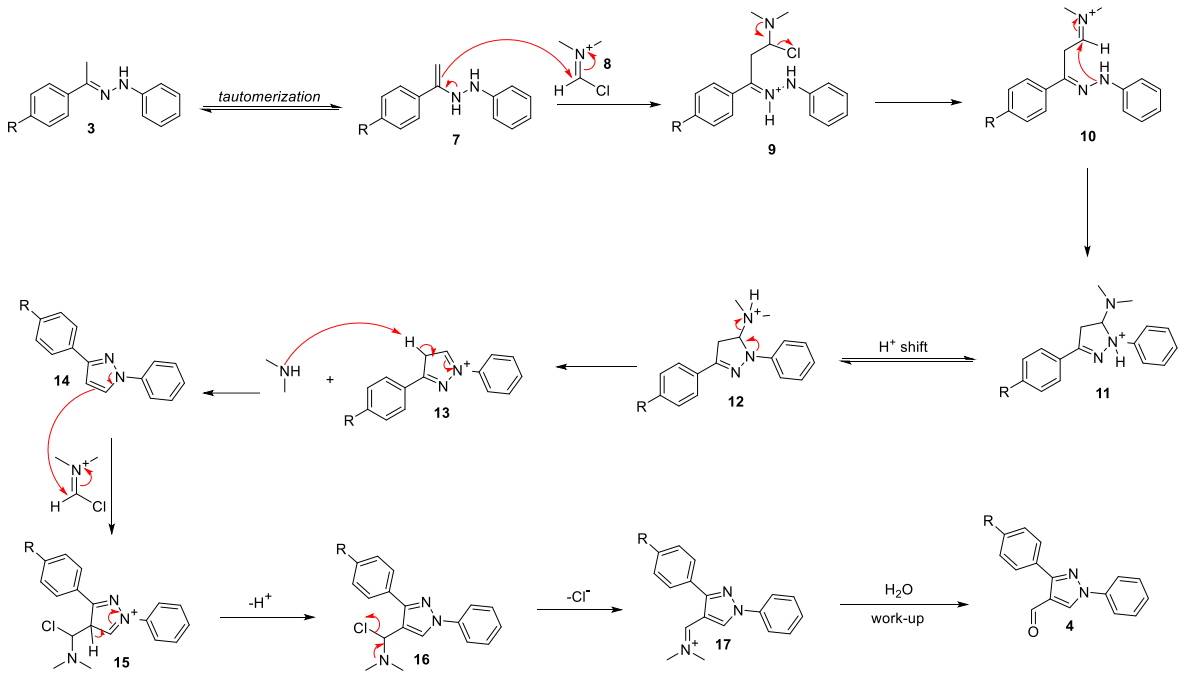
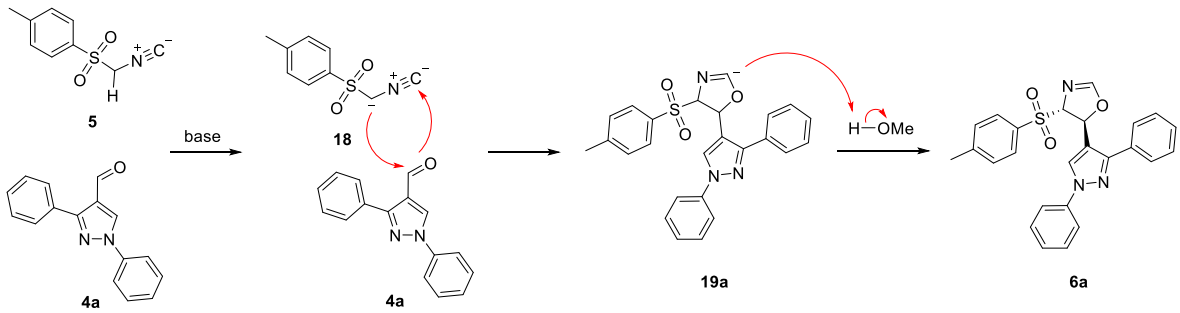


Figure S241. FT-IR of (4*S**, 5*S**)-5-(3-(4-methoxyphenyl)-1-phenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6j**.

Reaction mechanisms



Scheme S1. Mechanistic proposal for the synthesis of 1,3-diphenyl-1*H*-pyrazole-4-carbaldehydes **4a-j**.



Scheme S2. Proposed mechanism of formation of (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazole **6a** from 1,3-diphenyl-1*H*-pyrazole-4-carbaldehyde **4a** and TosMIC **5**.

In silico supplements

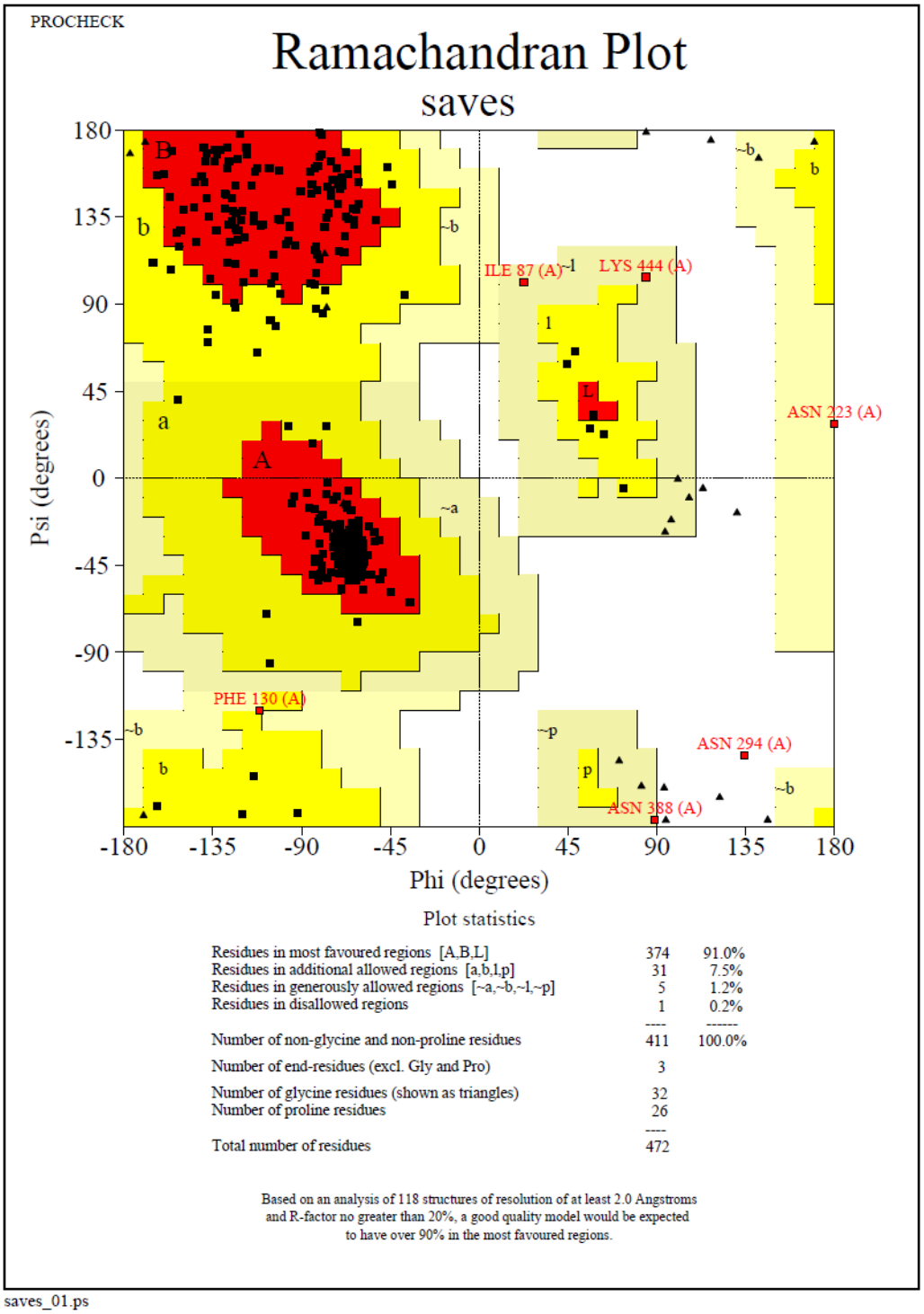


Figure S242. Ramachandran plot of the *C. auris* CYP51 model.

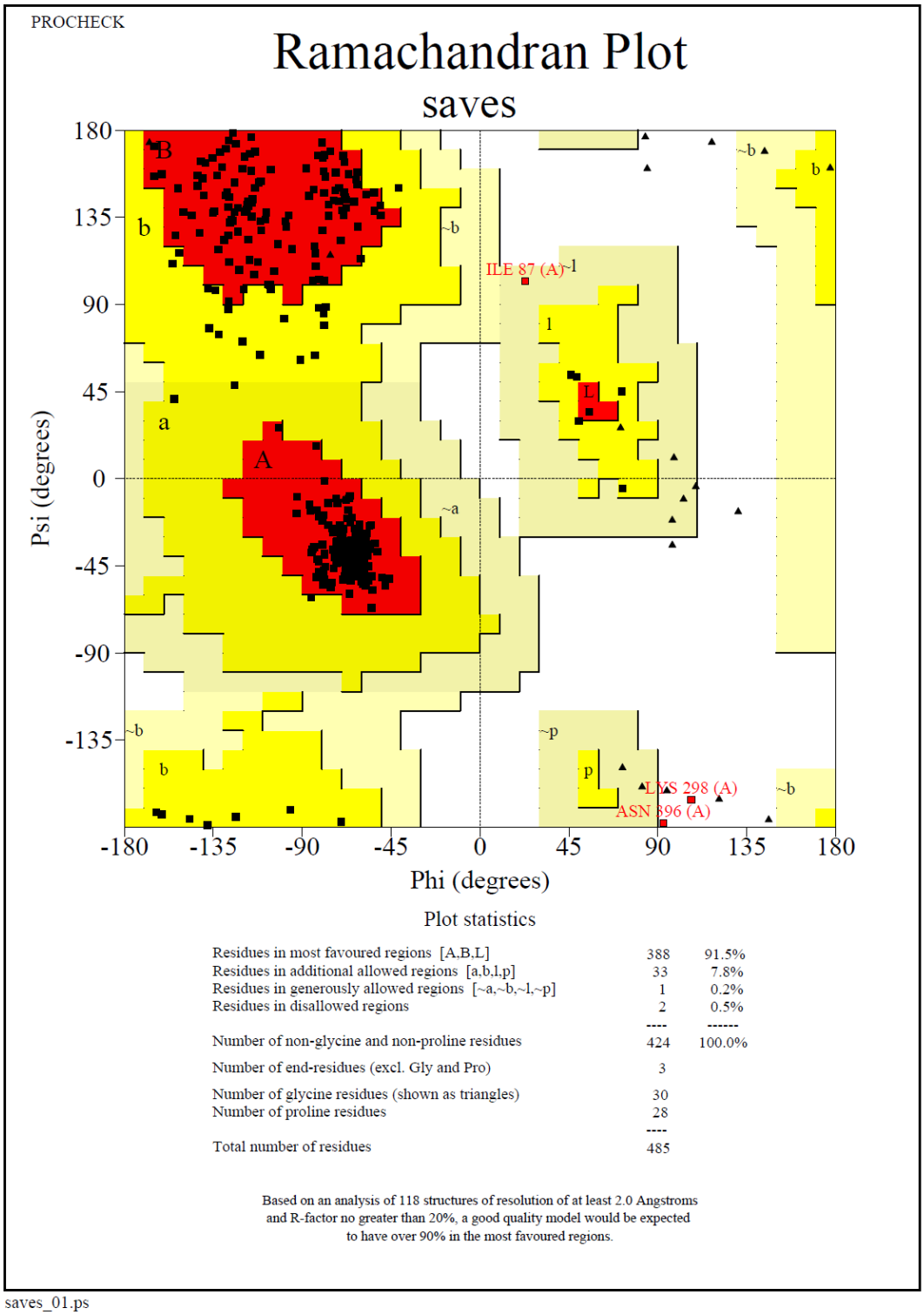


Figure S243. Ramachandran plot of the *C. dubliniensis* CYP51 model.

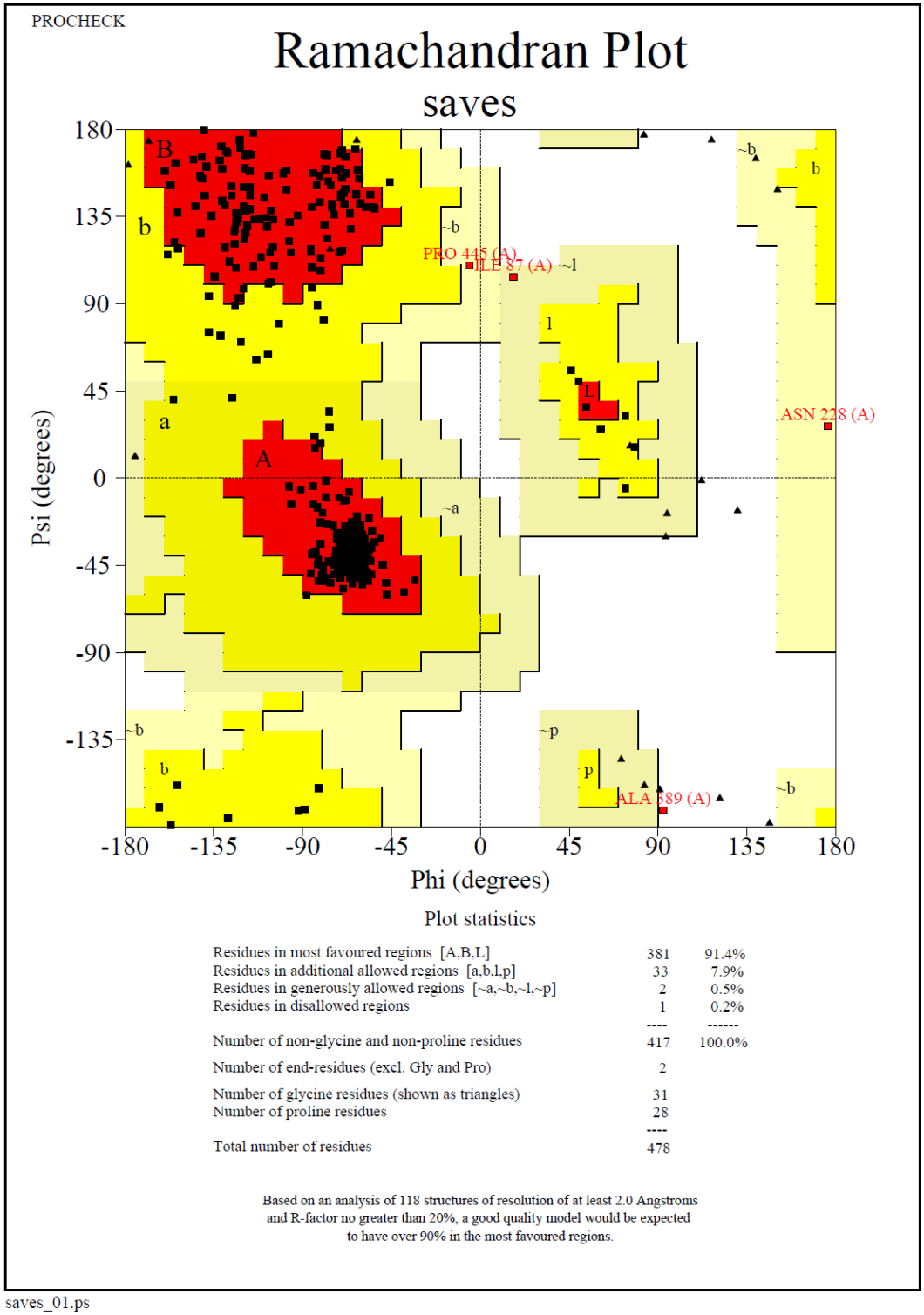


Figure S244. Ramachandran plot of the *C. glabrata* CYP51 model.

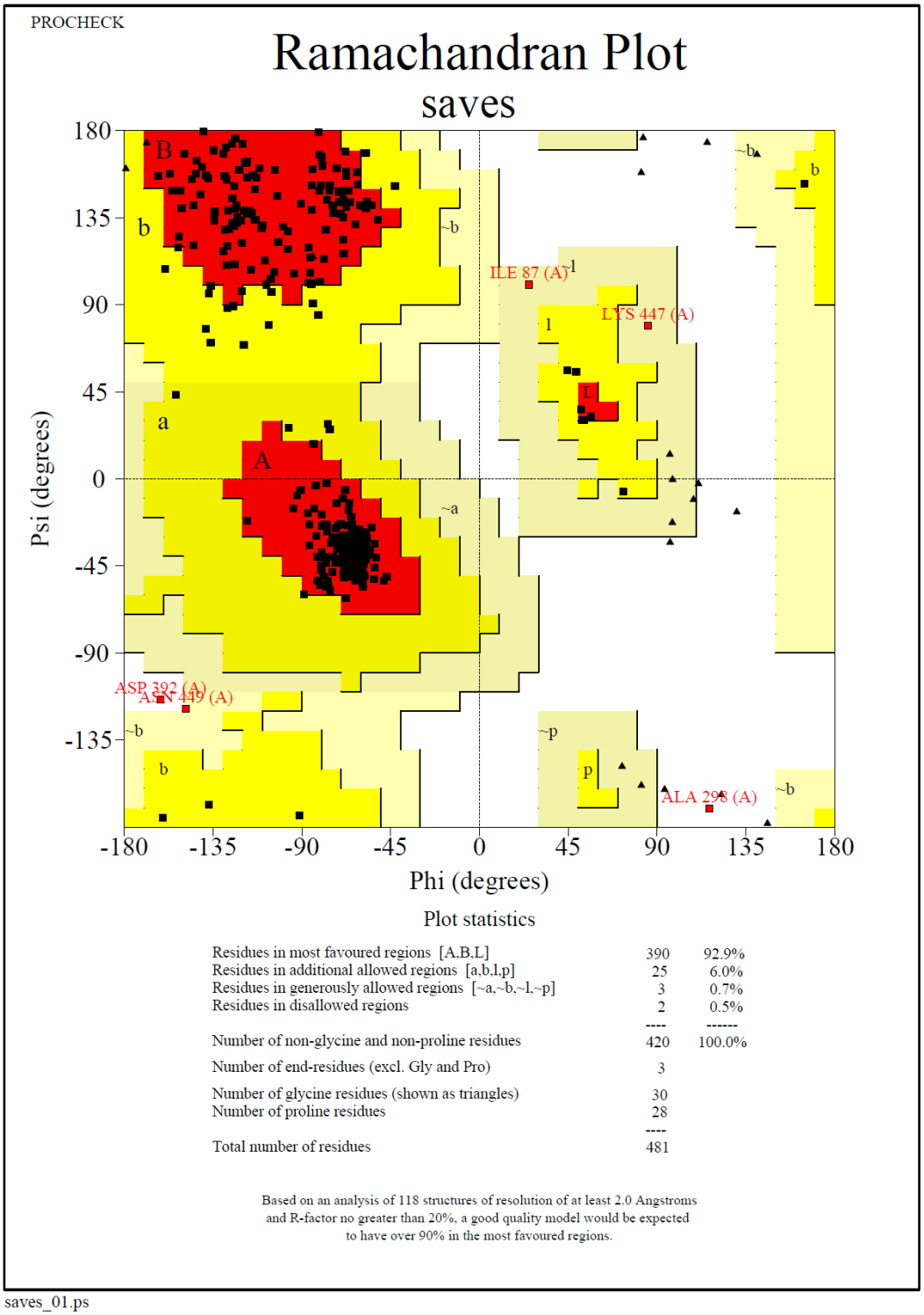


Figure S245. Ramachandran plot of the *C. haemulonii* CYP51 model.

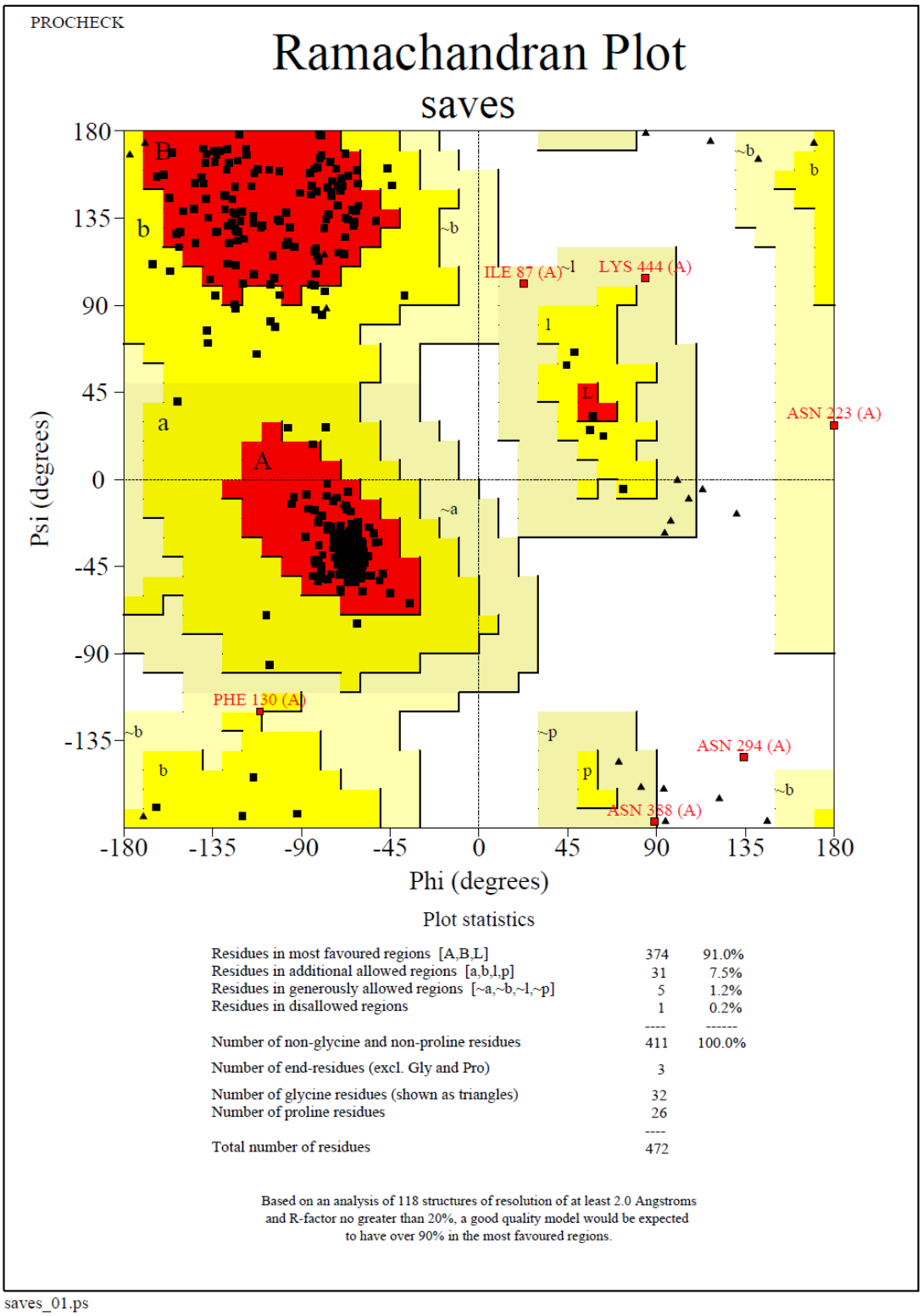
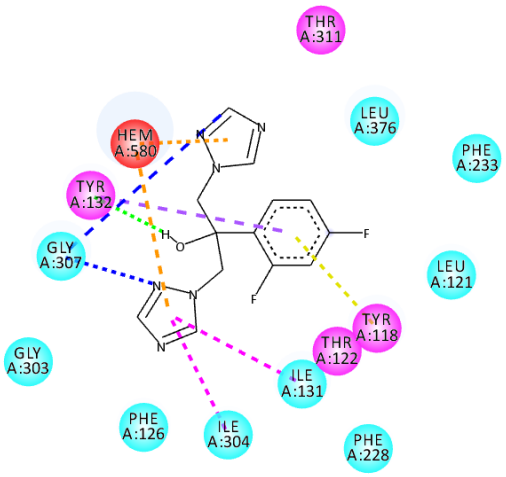
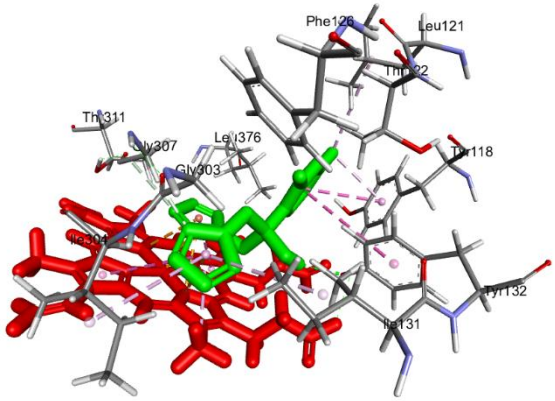


Figure S246. Ramachandran plot of the *C. krusei* CYP51 model.

Fluconazole 20





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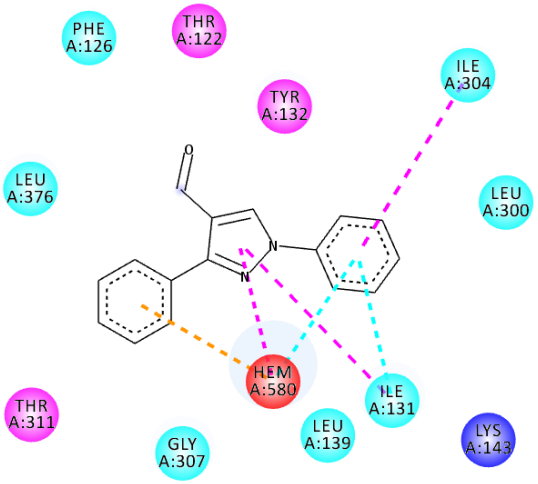
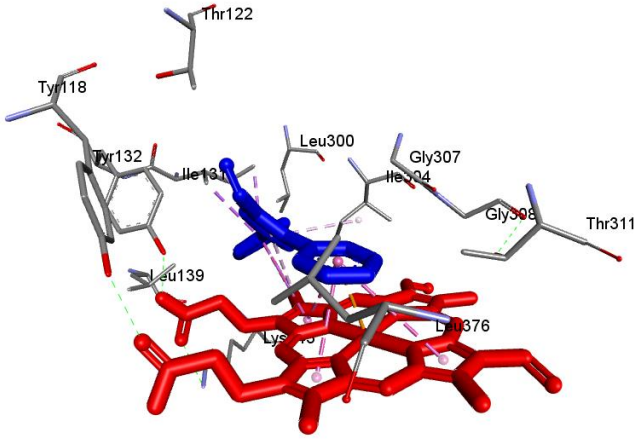
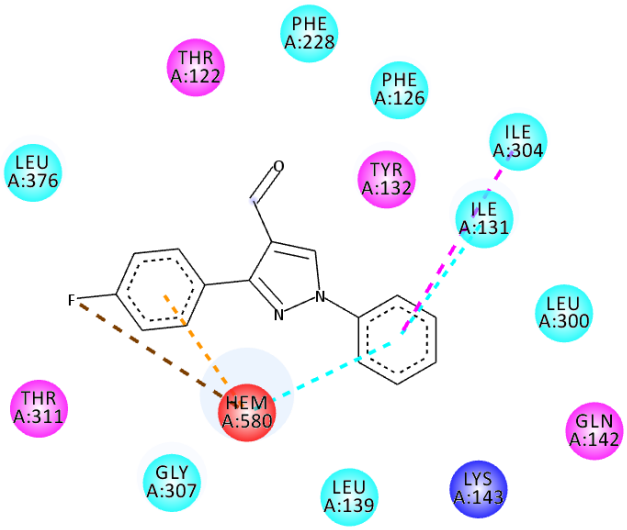




4b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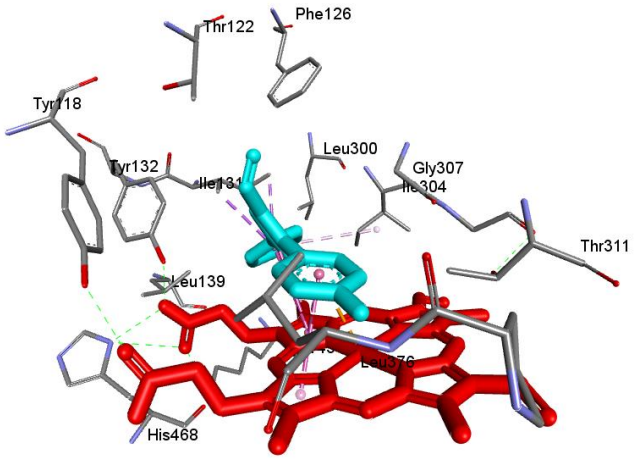
ILE A:304
LEU A:376
TYR A:132
ILE A:131
LEU A:300
THR A:311
HEM A:580
GLN A:142
GLY A:307
LEU A:139
LYS A:143
F
O
N
N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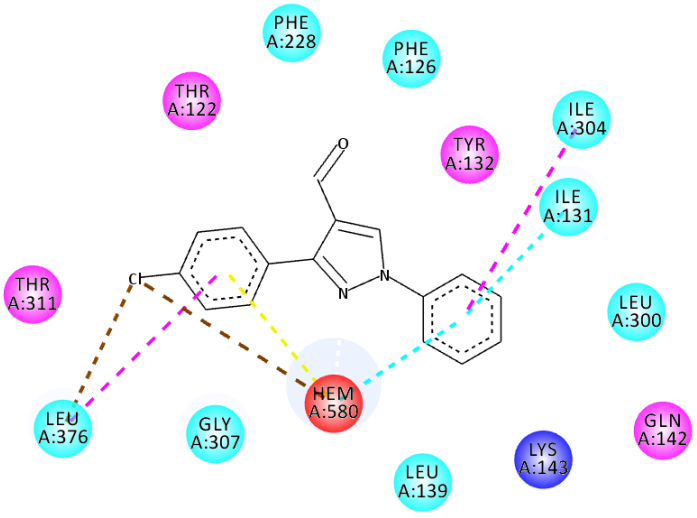
His468

4c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GLY A:307
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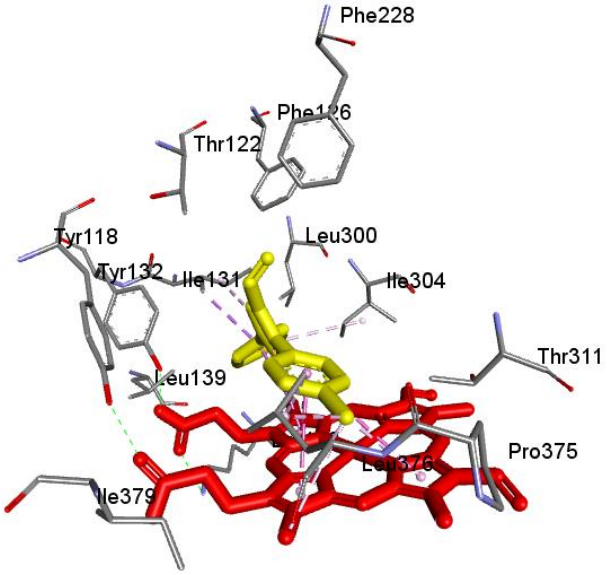
LYS A:143
Cl
O
N
N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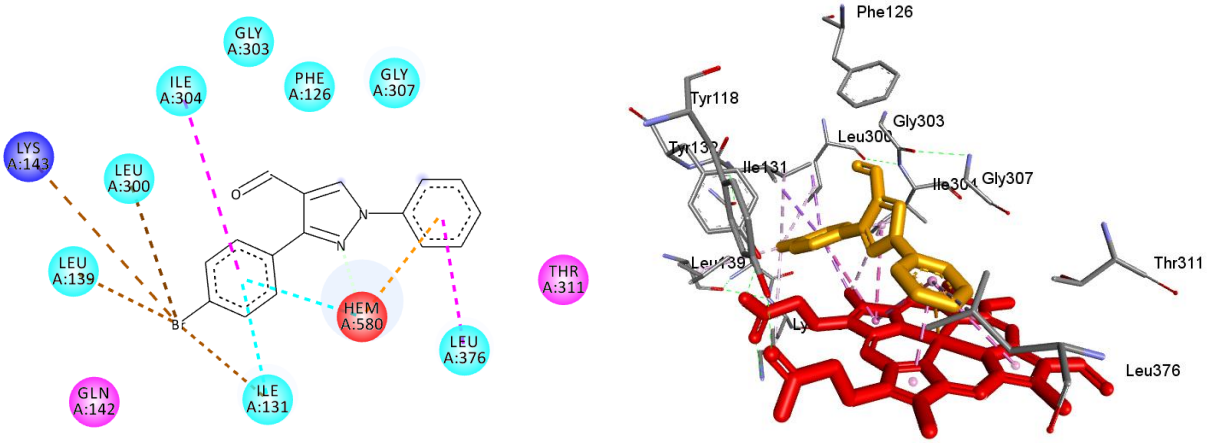
Thr311
Leu139
Pro375
Ile379

4d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PHE A:126
GLY A:307
LYS A:143
LEU A:300
LEU A:139
HEM A:580
THR A:311
LEU A:376
GLN A:142
ILE A:131
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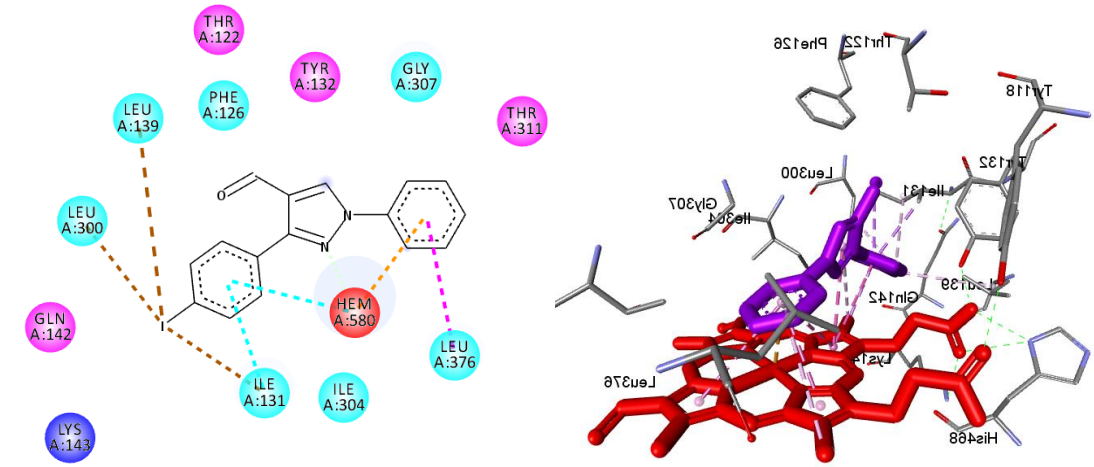
Tyr118
Gly303
Leu300
Tyr132
Ile131
Ile304
Gly307
Leu139
Thr311
Leu376

4e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PHE A:126
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HEM A:580
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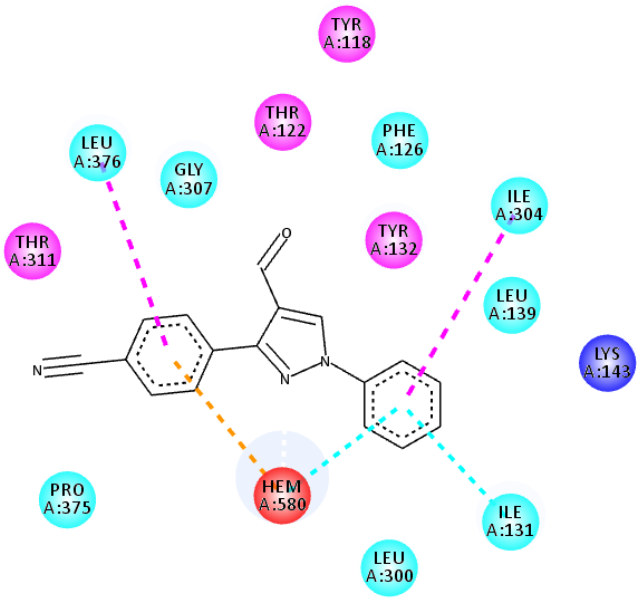
LEU A:376
ILE A:131
ILE A:304
LYS A:143

4f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LYS A:143
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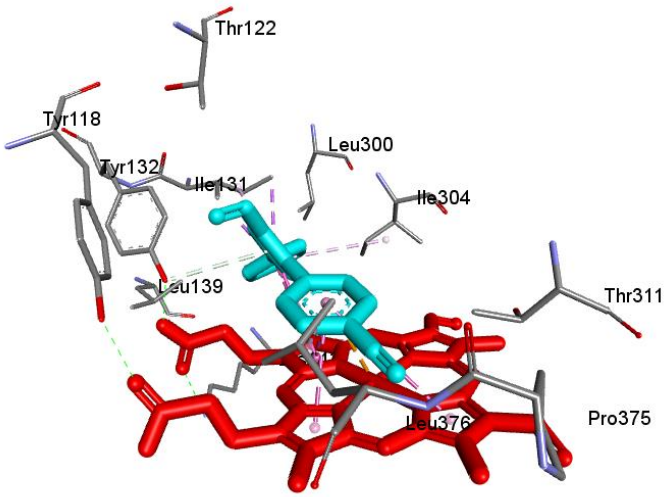
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Tyr132
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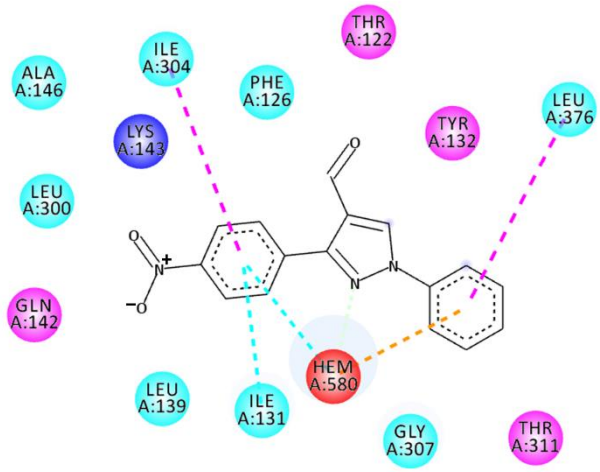
Ile304
Leu139
Thr311
Leu376
Pro375

4g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PHE A:126
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HEM A:580
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ILE A:131
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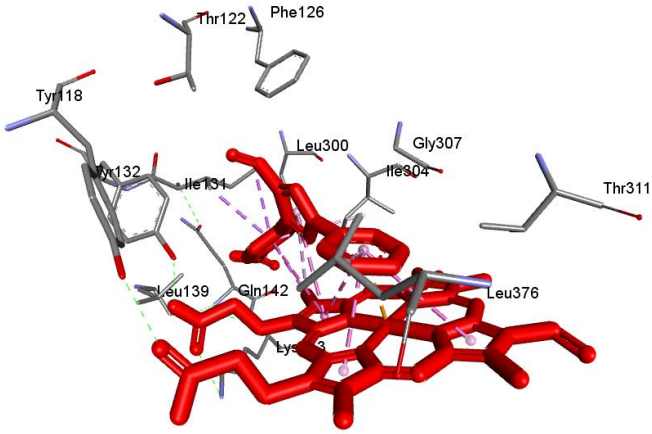
THR A:311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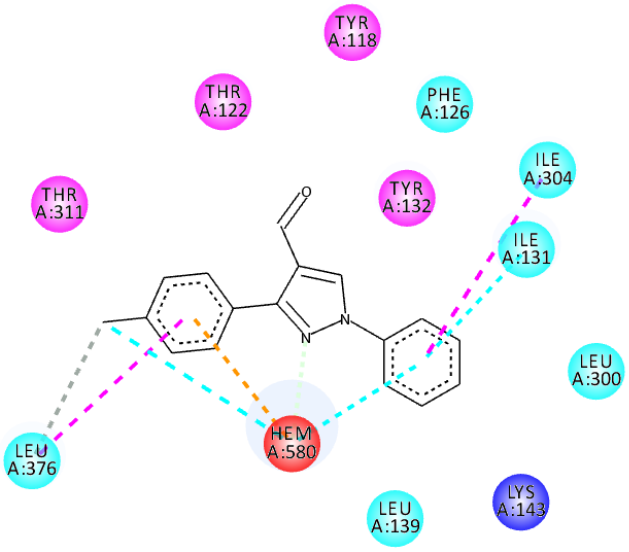
Leu139
Gln142
Leu376

4h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PHE A:126
THR A:311
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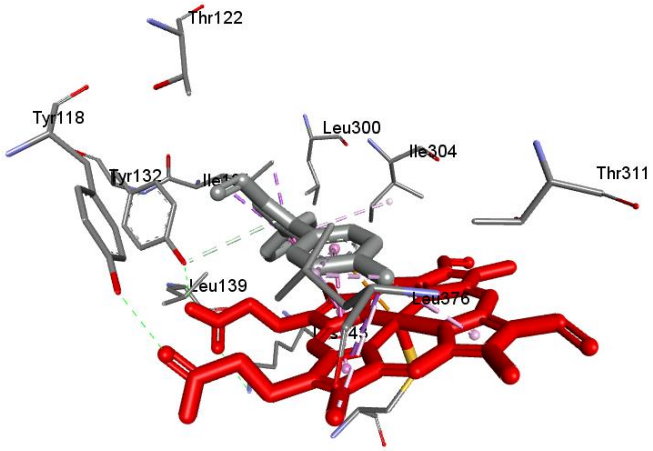
ILE A;304
ILE A:131
LEU A:300
LEU A:376
HEM A:580
LEU A:139
LYS A:143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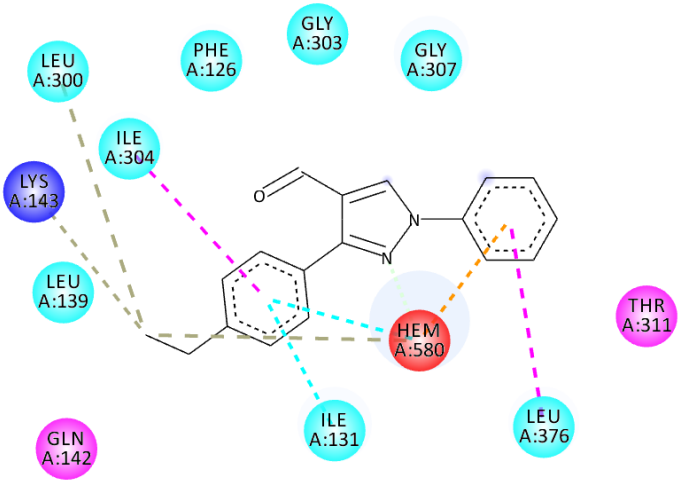
Tyr118
Leu300
Ile304
Thr311
Tyr132
Leu139
Leu376

4i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HEM A:580
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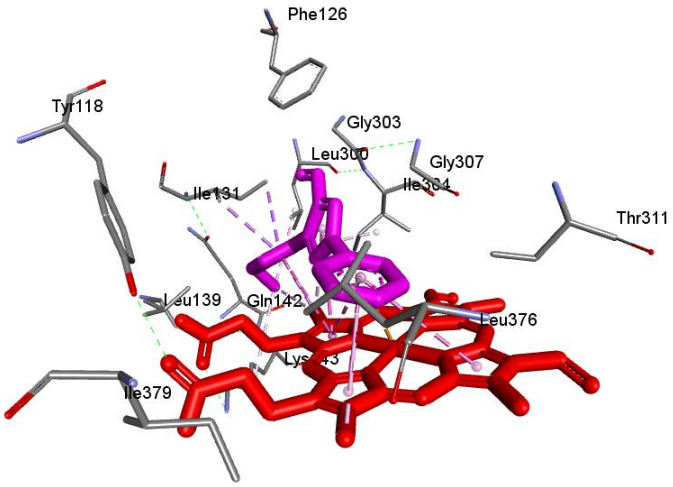
LEU A:376
GLN A:142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Leu300
Gly307
Ile304
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Thr311
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Leu376
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4j

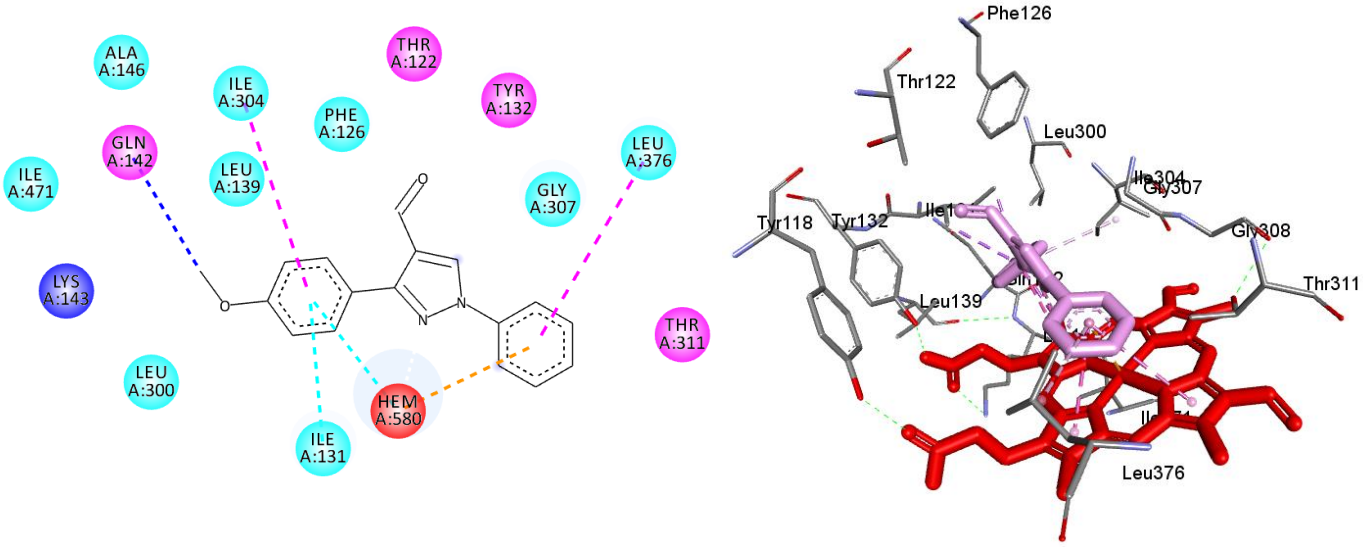
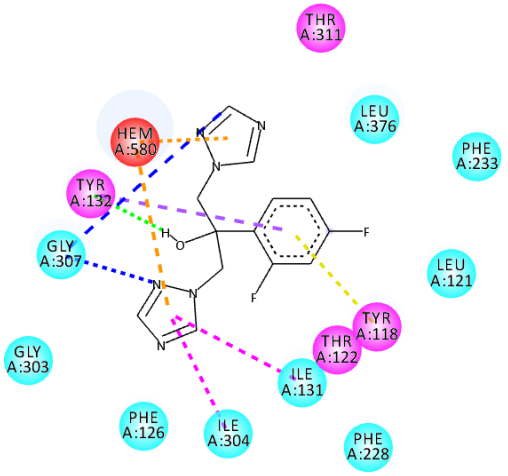
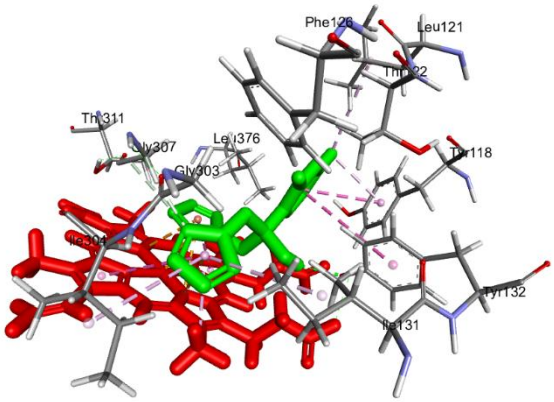


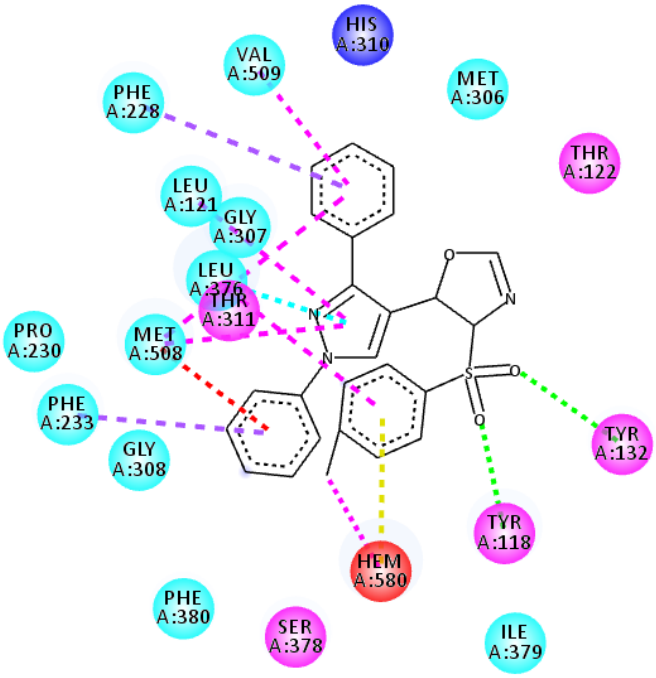
Figure S247. Schematic representation of binding modes of **fluconazole 20** and 1,3-diaryl-1*H*-pyrazole-4-carbaldehydes **4a-j**, at the active site of CYP51Ca (*C. albicans*). The 3D model depicts the hydrophilic bonds and amino acid residues that are part of the active site of CYP51Ca. In the 2D model, the interactions denoted with dotted lines are conventional hydrogen bonds (green), carbon-hydrogen (dark blue), π-cation (orange), π-sigma (cyan), π-alkyl (fuchsia), π-π T-shaped (purple), π-π stacked (yellow), alkyl (gray), π-sulfur (red) and halogen (brown). The heme group is in red, fluconazole **20** (green), **4a** (blue), **4b** (cyan), **4c** (yellow), **4d** (orange), **4e** (purple), **4f** (turquoise), **4g** (red), **4h** (gray), **4i** (fuchsia) and **4j** (pink). The solvent accessible surface is illustrated for the amino acid residues and ligands. The amino acids are highlighted in blue (basic), cyan (hydrophobic), and fuchsia (hydrophilic).

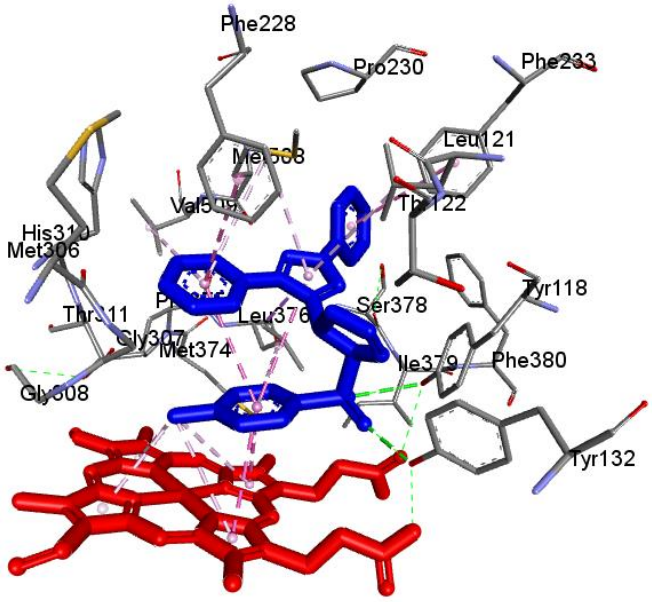
Fluconazole 20



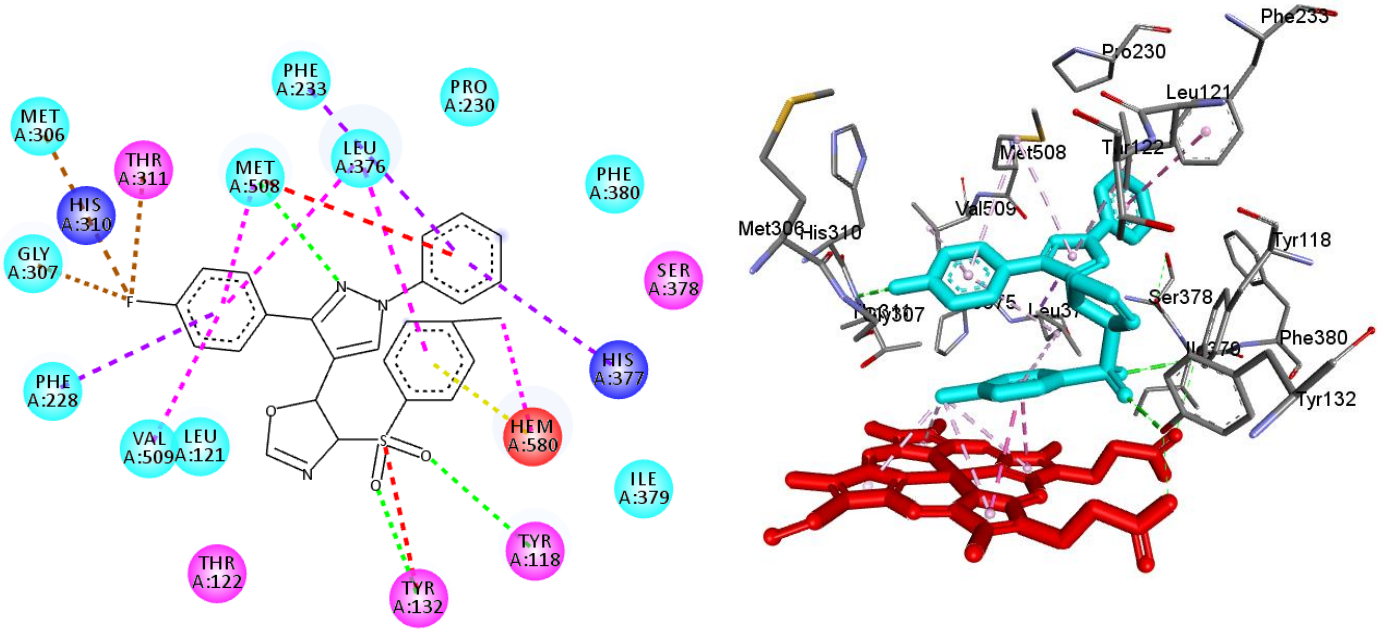


6a





6b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PRO A:230
THR A:311
LEU A:376
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HIS A:310
GLY A:307
SER A:378
HIS A:377
PHE A:228
VAL A:509
LEU A:121
HEM A:580
ILE A:379
TYR A:118
THR A:122
TYR A:132
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Leu121
Met508
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Val509
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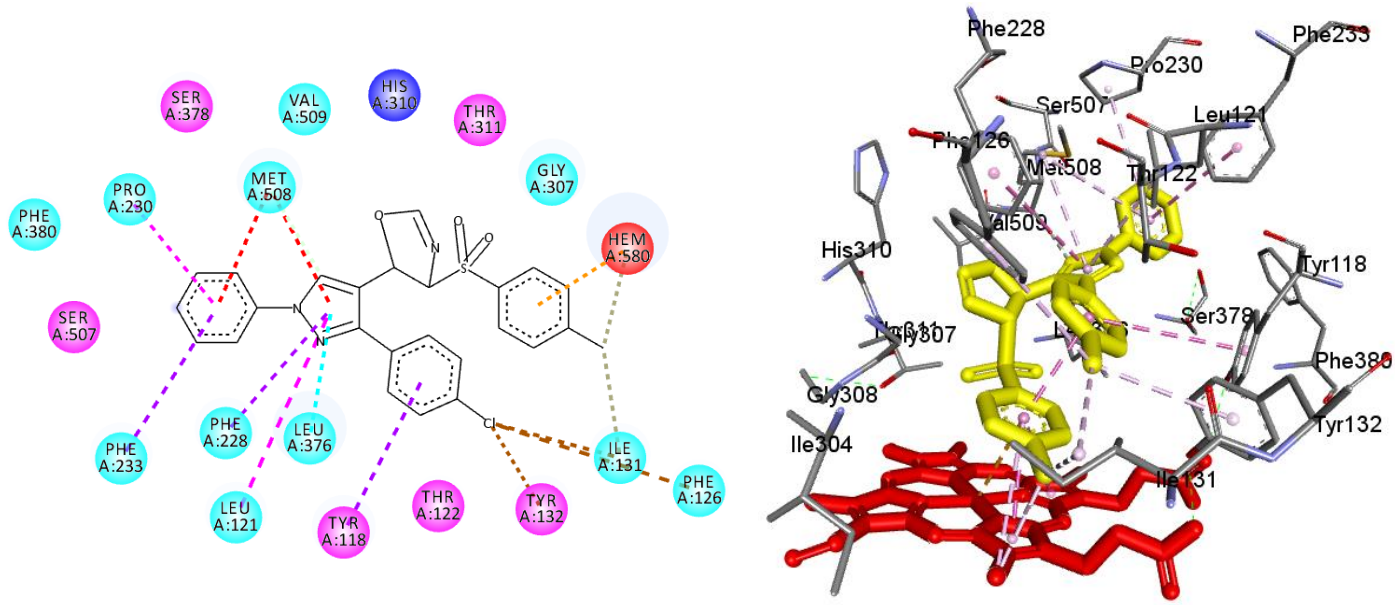
Tyr118
Ser378
Phe380
Tyr132

6c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SER A:507
PHE A:228
LEU A:376
PHE A:233
ILE A:131
PHE A:126
LEU A:121
TYR A:118
THR A:122
TYR A:132
Phe228
Phe233
Pro230
Ser507
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His310
Tyr118
Ser378
Phe380
Gly308
Ile304
Tyr132
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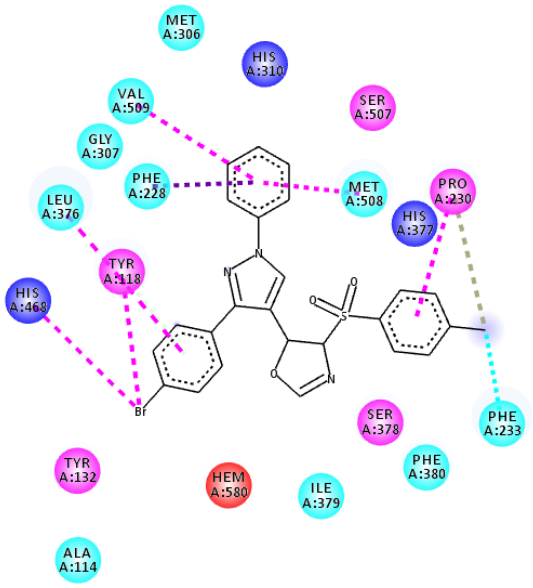
6d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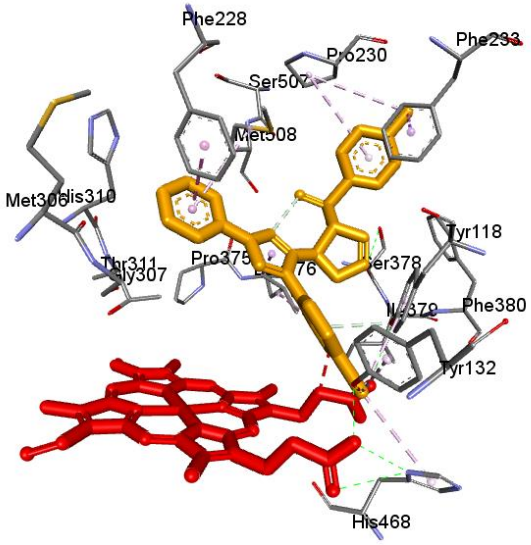
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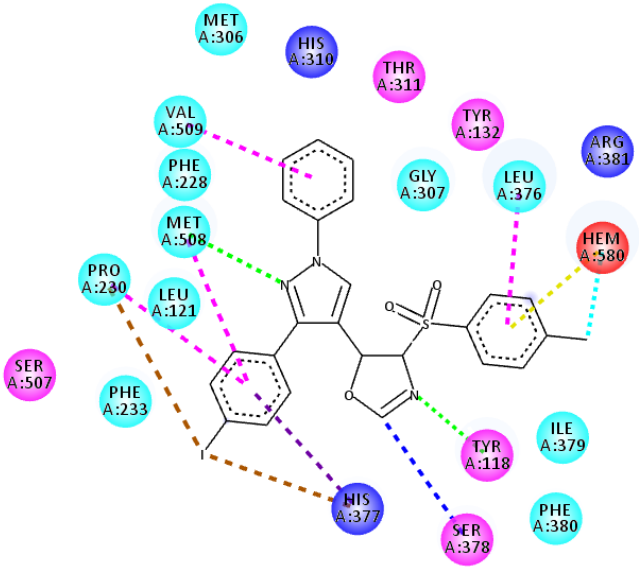
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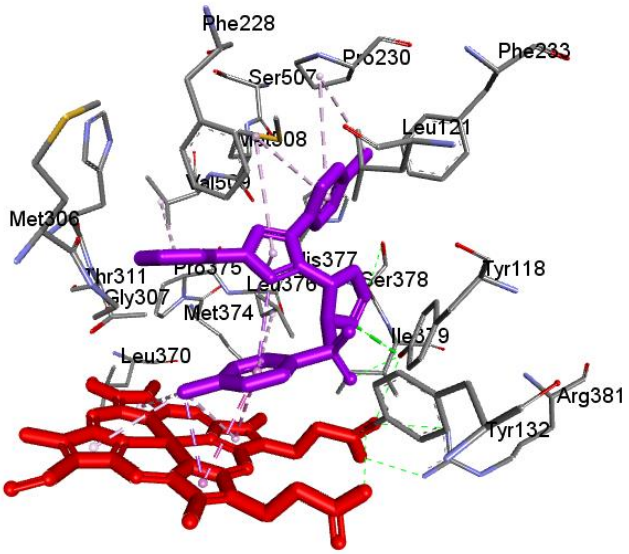
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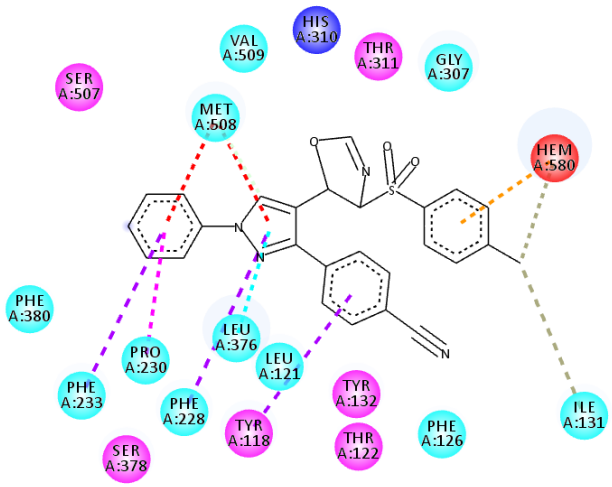
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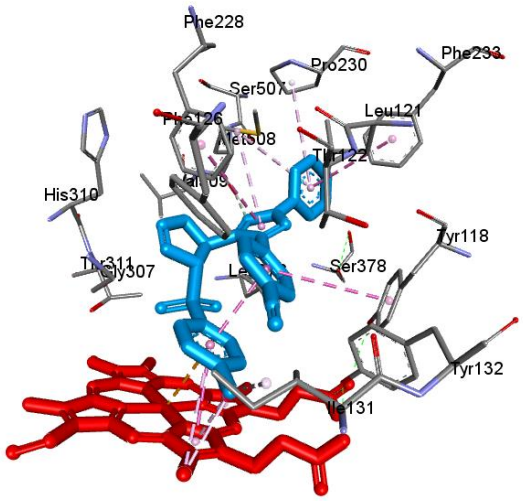
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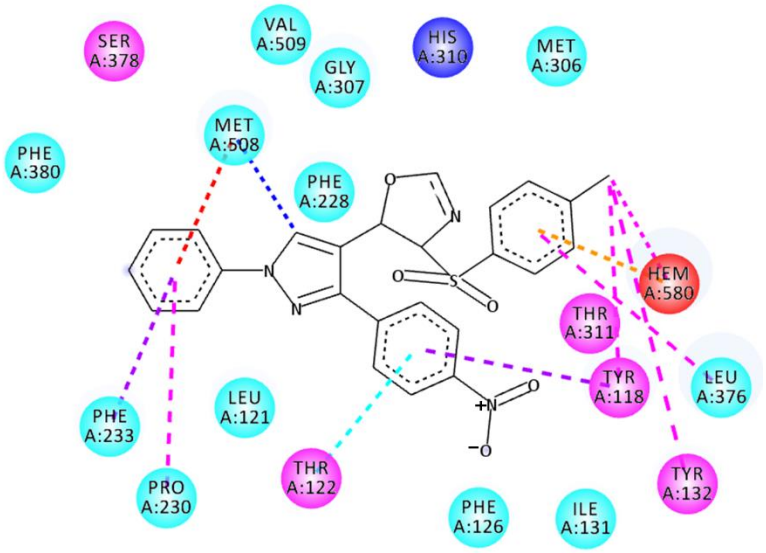
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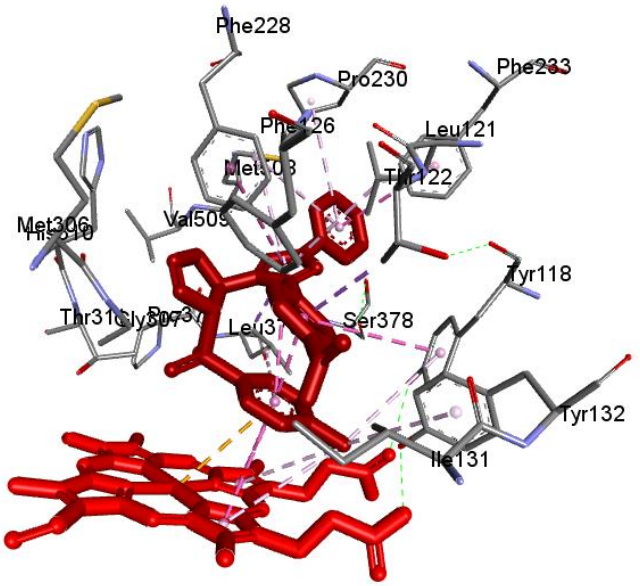
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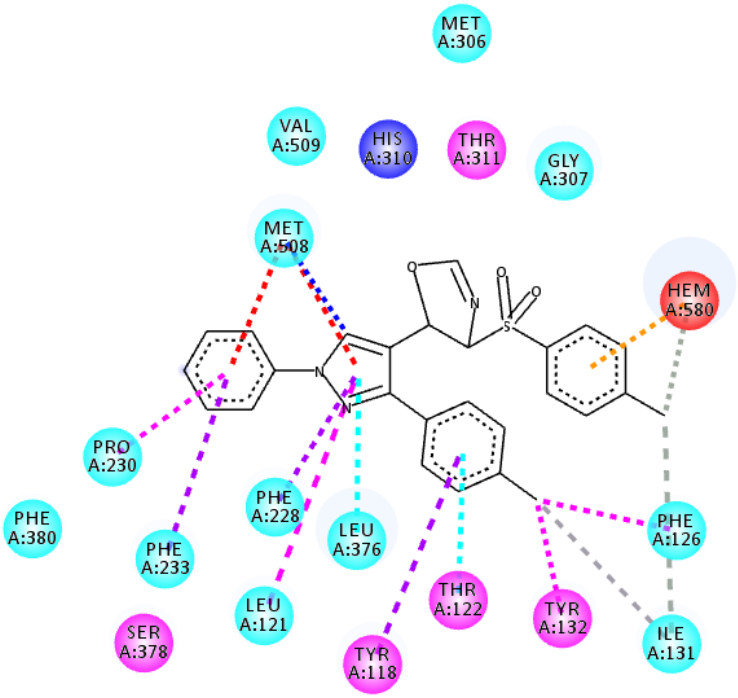
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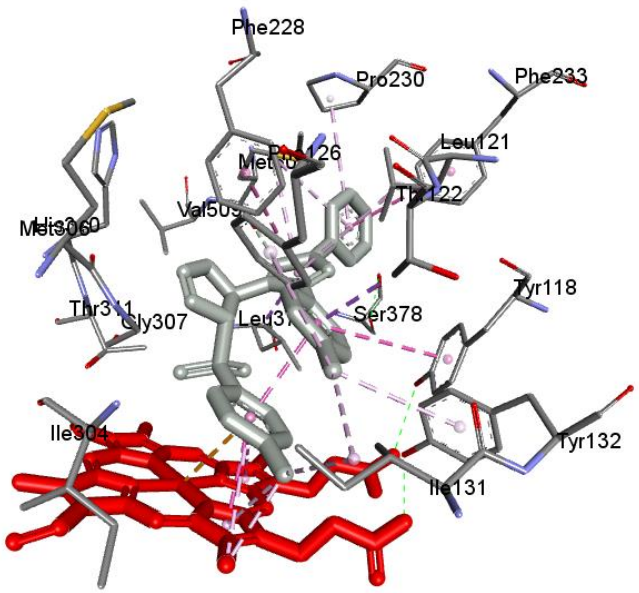
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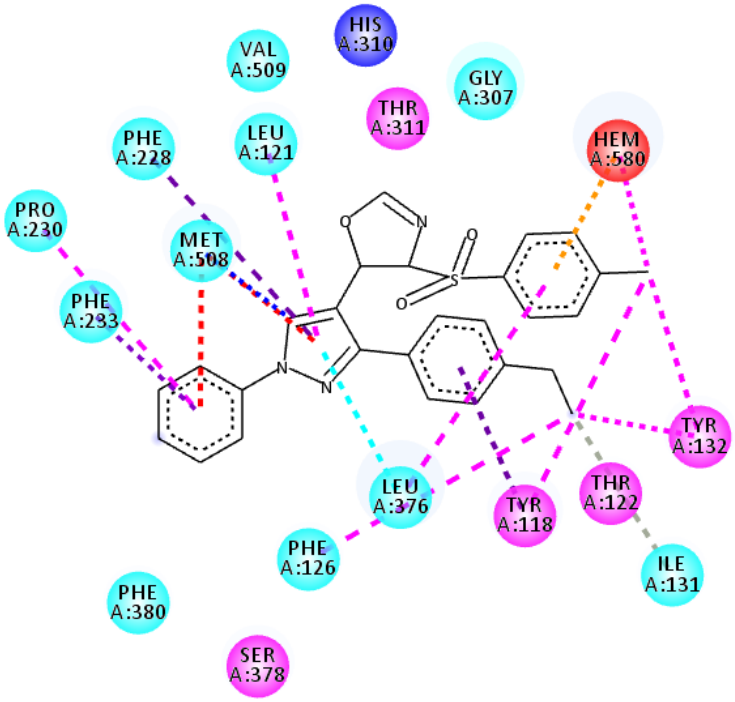
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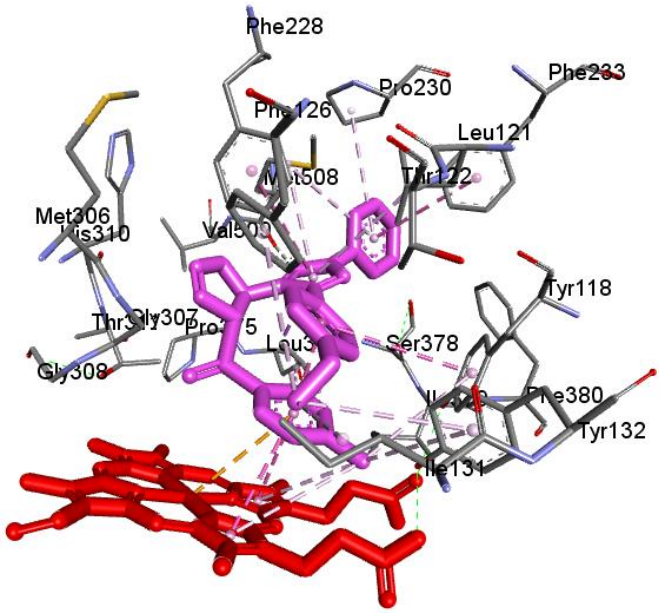
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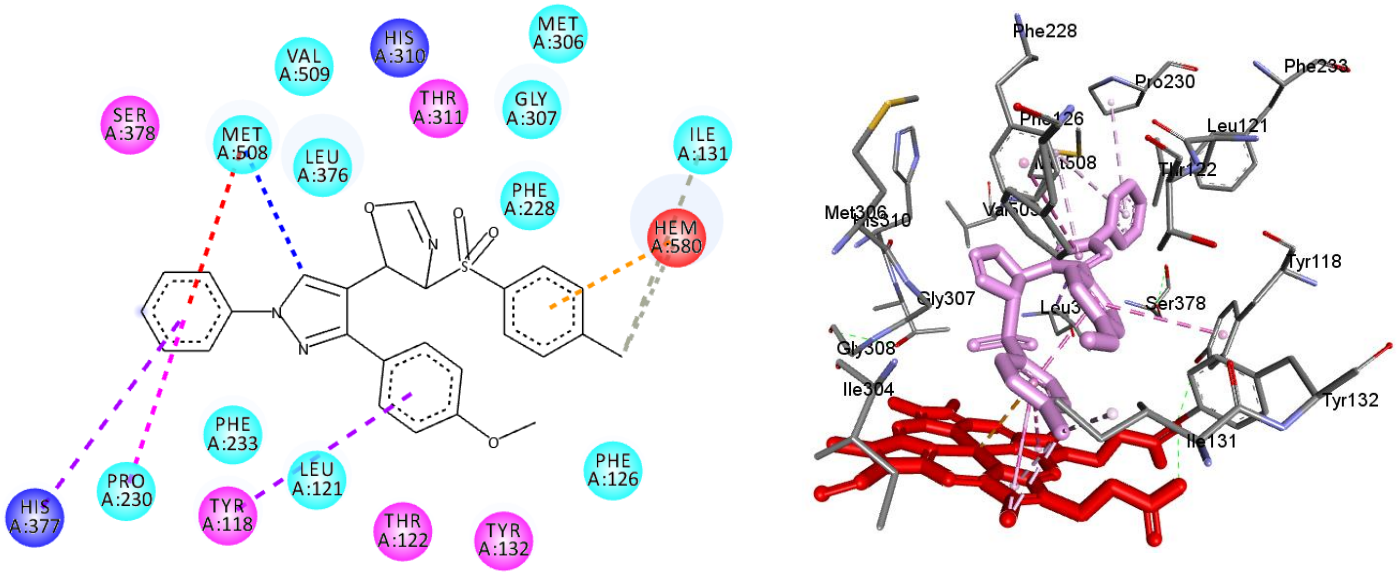


Figure S248. Schematic representation of binding modes of **fluconazole 20** and (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazoles **6a-j**, at the active site of CYP51Ca (*C. albicans*). The 3D model depicts the hydrophilic bonds and amino acid residues that are part of the active site of CYP51Ca. In the 2D model, the interactions denoted with dotted lines are conventional hydrogen bonds (green), carbon-hydrogen (dark blue), π-cation (orange), π-sigma (cyan), π-alkyl (fuchsia), π-π T-shaped (purple), π-π stacked (yellow), alkyl (gray), π-sulfur (red) and halogen (brown). The heme group is in red, fluconazoles **20** (green), **6a** (blue), **6b** (cyan), **6c** (yellow), **6d** (orange), **6e** (purple), **6f** (turquoise), **6g** (red), **6h** (gray), **6i** (fuchsia) and **6j** (pink). The solvent accessible surface is illustrated for the amino acid residues and ligands. The amino acids are highlighted in blue (basic), cyan (hydrophobic), and fuchsia (hydrophilic).

Table S2. Interactions of 1,3-diaryl-1*H*-pyrazole-4-carbaldehydes **4a-j**, (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazoles **6a-j** and fluconazole at the active site of lanosterol 14-alpha demethylase CYP51 from *C. glabrata.*

Compound	Interacting residues	Interactions	
		Polar	Hydrophobic
Fluconazole	Tyr74, Leu77, Thr78, Phe82, Tyr88, Phe184, Gly258, Val259, Gly262, Gly263, Leu328, Hem478.	O-H·····O (Gly258) C-H·····O (Val259) N·····H-C (Gly262)	π-alkyl (Leu77) π-sigma (Val259) π-sigma (Hem478) halogen (Hem478)
4a	Tyr74, Leu77, Thr78, Phe82, Tyr88, Phe184, Gly258, Val259, Gly262, Gly263, Leu328, Hem478.		π-sigma (Ile87) amide-π stacked (Gly258) π- alkyl (Val259) π-alkyl (Hem478) π-π-stacked (Hem478)
4b	Thr78, Phe82, Ile87, Tyr88, Phe184, Leu255, Gly258, Val259, Gly262, Gly263, Thr266, Hem478.		π-sigma (Ile87) halogen (Leu255) amide-π stacked (Gly258) π- alkyl (Val259) π-alkyl (Hem478) π-π-stacked (Hem478)
4c	Thr78, Phe82, Ile87, Tyr88, Val102, Leu255, Gly258, Val259, Gly262, Gly263, Thr266, Hem478.		π-sigma (Ile87) alkyl (Val102) alkyl (Leu255) amide-π stacked (Gly258) π-alkyl (Val259) π-alkyl (Hem478) π-π-stacked (Hem478)
4d	Thr78, Phe82, Ile87, Tyr88, Val102, Leu255, Gly258, Val259, Gly262, Thr266, Hem478.		π- alkyl (Ile87) π- alkyl (Val102) alkyl (Leu255) amide-π stacked (Gly258) π-π stacked (Val259) π-alkyl (Hem478) π-π-stacked (Hem478) π-sigma (Hem478)

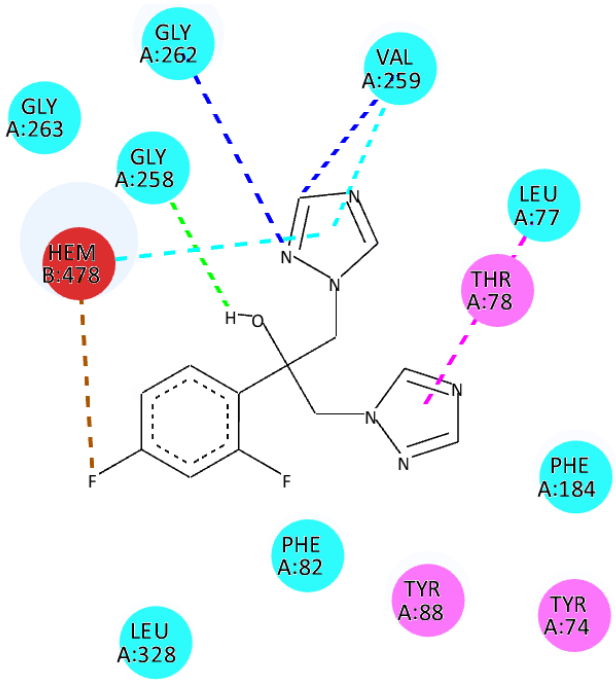
4e	Thr78, Phe82, Ile87, Tyr88, Val102, Leu255, Gly258, Val259, Gly262, Thr266, Leu328, Hem478.		π-alkyl (Ile87) π-alkyl (Val102) π-alkyl (Leu255) amide-π stacked (Gly258) π-alkyl (Val259) π-alkyl (Leu328) π-alkyl (Hem478) π-π-stacked (Hem478)
4f	Thr78, Phe82, Ile87, Tyr88, Val102, Leu255, Gly258, Val259, Gly262, Gly263, Thr266, Hem478.		π- alkyl (Ile87) amide-π stacked (Gly258) π-alkyl (Val259) π-alkyl (Hem478) π-π-stacked (Hem478)
4g	Thr78, Phe82, Ile87, Tyr88, Gln98, Val102, Leu255, Gly258, Val259, Gly262, Gly263, Thr266, Hem478.	O⋯⋯H-O (Leu255)	π-alkyl (Ile87) amide-π stacked (Gly258) π-alkyl (Val259) π-alkyl (Hem478) π-π-stacked (Hem478) π-π T-shaped (Hem478)
4h	Thr78, Phe82, Ile87, Tyr88, Val102, Leu255, Gly258, Val259, Gly262, Gly263, Thr266, Hem478.		π-alkyl (Ile87) alkyl (Val102) alkyl (Leu255) amide-π stacked (Gly258) alkyl (Val259) π-alkyl (Val259) π-alkyl (Hem478) π-π-stacked (Hem478)
4i	Thr78, Phe82, Ile87, Tyr88, Val102, Leu255, Gly258, Val259, Gly262, Gly263, Thr266, Leu328, Hem478.		π-alkyl (Ile87) π-alkyl (Val102) π-alkyl (Leu255) amide-π stacked (Gly258) π-alkyl (Val259) alkyl (Leu328) π-alkyl (Hem478) π-sigma (Hem478) π-π-stacked (Hem478)
4j	Phe82, Ile87, Phe184, Leu255, Gly258, Val259, Gly262, Gly263, Thr266, Leu328, Hem478.	C-H⋯⋯O (Gln142)	π-alkyl (Ile87) amide-π stacked (Gly258) π-alkyl (Val259)

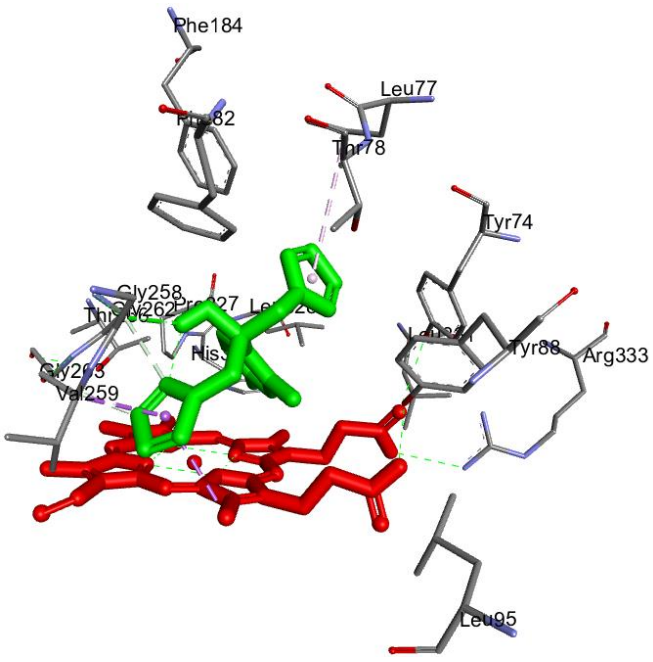
			π-sigma (Gly262) alkyl (Leu328) π-alkyl (Hem478) π-π T-shaped (Hem478) π-sigma (Hem478) π-π-stacked (Hem478)
6a	Tyr74, Leu77, Thr78, Phe82, Ile87, Tyr88, Phe184, Leu255, Gly258, Val259, Gly262, Thr266, Leu328, Met457, Hem478.	N····H-N (Hem478)	π-alkyl (Leu77) π-sigma (Ile87) π-alkyl (Phe184) amide-π stacked (Gly258) π-alkyl (Val259) π-sigma (Leu328) alkyl (Met457) π-alkyl (Hem478) π-sulfur (Hem478)
6b	Tyr74, Leu77, Thr78, Phe82, Ile87, Tyr88, Phe184, Leu255, Gly258, Val259, Gly262, Gly263, His265, Thr266, Leu328, Met457, Val458, Hem478.	N····H-N (Hem478)	π-sigma (Ile87) π-alkyl (Phe184) amide-π stacked (Gly258) π-alkyl (Val259) π-alkyl (His265) alkyl (Met457) π-alkyl (Met457) alkyl (Val458) π-alkyl (Hem478)
6c	Tyr74, Leu77, Thr78, Phe82, Ile87, Tyr88, Phe184, Leu255, Gly258, Val259, Gly262, Thr266, Met457, Hem478.	O····H-C (Gly262) C-H····N (Hem478)	π-π T-shaped (Tyr74) π-alkyl (Ile87) π-sulfur (Phe184) amide-π stacked (Gly258) π-alkyl (Val259) alkyl (Met457) π-alkyl (Met457) π-alkyl (Hem478)
6d	Tyr74, Leu77, Thr78, Phe82, Ile87, Tyr88, Phe184, Leu255, Gly258, Val259, Gly262, Thr266, Leu328, Met457, Hem478.	O····H-C (Gly262) O····H-C (Hem478)	π-alkyl (Tyr74) alkyl (Leu77) π-alkyl (Ile87) π-sulfur (Phe184) amide-π stacked (Gly258) π-alkyl (Val259) π-alkyl (Leu328) π-alkyl (Met457) π-alkyl (Hem478)
6e	Tyr74, Leu77, Thr78, Phe82, Ile87, Tyr88, Phe184, Leu255, Gly258, Val259, Gly262,	N····H-O (Tyr78) N····H-N (Hem478)	π-alkyl (Tyr74) π-π T-shaped (Tyr74)

	Gly263, His265, Thr266, Leu328, Met457, Val458, Hem478.		alkyl (Leu77) π-alkyl (Ile87) π-alkyl (Phe184) amide-π stacked (Gly258) π-alkyl (Val259) π-alkyl (His265) π-alkyl (Met457) π-alkyl (Hem478) π-sulfur (Hem478)
6f	Tyr74, Leu77, Thr78, Ile87, Tyr88, Phe184, Gly258, Val259, Thr266, His325, Pro327, Leu328, Met457, Hem478.	N····H-C (His326) N····H-N (Leu328)	π-sigma (Leu77) π-alkyl (Ile87) π-sulfur (Phe184) π-alkyl (Val259) π-alkyl (Leu328) π-sigma (Met457) π-π T-shaped (Hem478) π-sigma (Hem478) π-π-stacked (Hem478)
6g	Tyr74, Leu77, Thr78, Phe82, Ile87, Tyr88, Phe184, Leu255, Gly258, Val259, Gly262, Gly263, Thr266, Leu328, Met457, Val458, Hem478.	O····H-O (Thr78) N····H-N (Hem478)	π-sigma (Ile87) alkyl (Phe184) amide-π stacked (Gly258) π-alkyl (Val259) π-alkyl (Leu328) alkyl (Met457) alkyl (Val458) π-alkyl (Hem478) π-sulfur (Hem478)
6h	Tyr74, Leu77, Thr78, Phe82, Ile87, Tyr88, Phe184, Leu255, Gly258, Val259, Gly262, Gly263, His265, Thr266, Leu328, Met457, Val458, Hem478.	N····H-N (Hem478)	π-alkyl (Tyr74) alkyl (Leu77) π-alkyl (Ile87) π-alkyl (Phe184) amide-π stacked (Gly258) π-alkyl (Val259) π-alkyl (His265) alkyl (Val458) π-alkyl (Hem478) π-sulfur (Hem478)
6i	Tyr74, Thr78, Ile87, Tyr88, Phe184, Leu255, Gly258, Val259, Gly262, His265, Thr266, Pro327, Leu328, Met457, Val458, Hem478.		π-alkyl (Ile87) π-sigma (Ile87) amide-π stacked (Gly258) π-alkyl (Val259) π-sigma (Leu328) π-alkyl (Hem478) π-π T-shaped (Hem478)

6j	Tyr74, Leu77, Thr78, Ile87, Tyr88, Phe184, Gly258, Val259, Gly262, Thr266, His326, Pro327, Leu328, Met457, Hem478.	O⋯⋯H-O (Thr78) C-H⋯⋯O (Tyr88)	π-alkyl (Leu77) π-sigma (Ile87) π-sulfur (Phe184) π-alkyl (Val259) π-alkyl (His326) alkyl (Pro327) alkyl (Leu328) π-alkyl (Leu328) π-sigma (Leu328) π-sigma (Met457) alkyl (Hem478) π-π T-shaped (Hem478) π-π-stacked (Hem478)

Fluconazole





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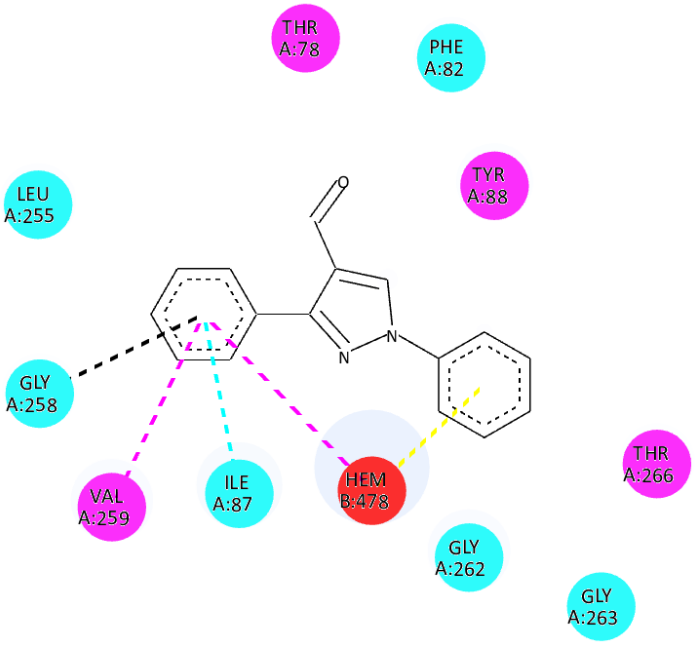
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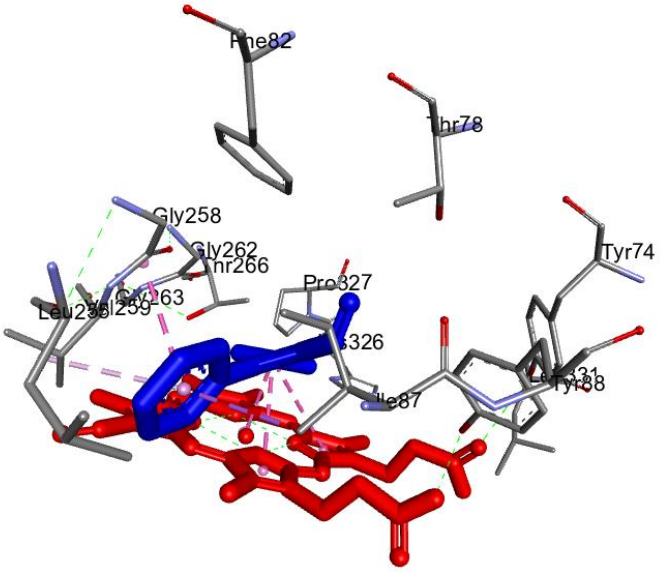
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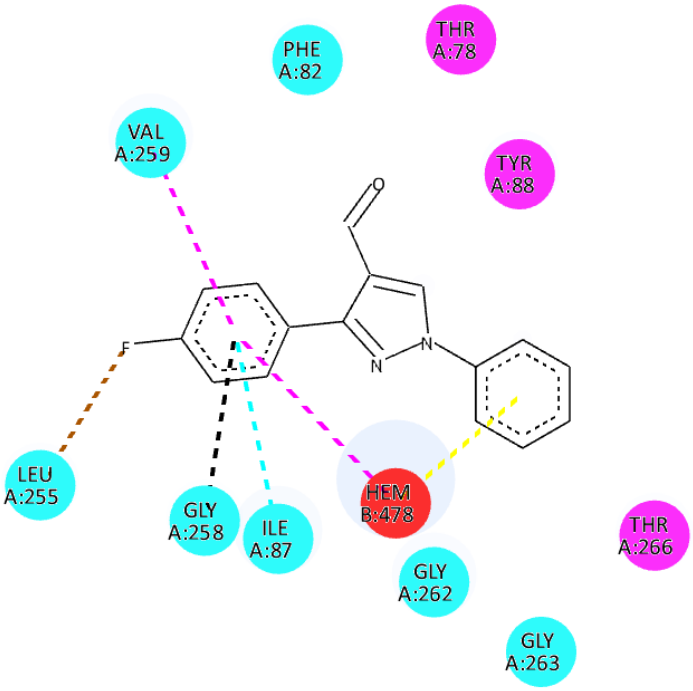
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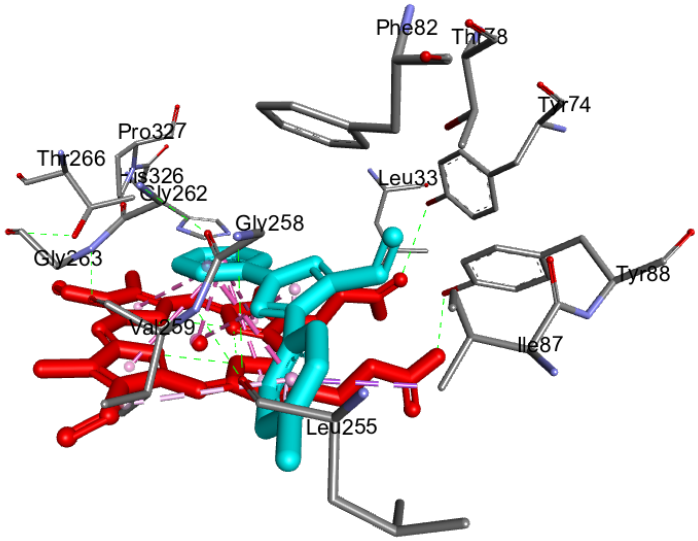
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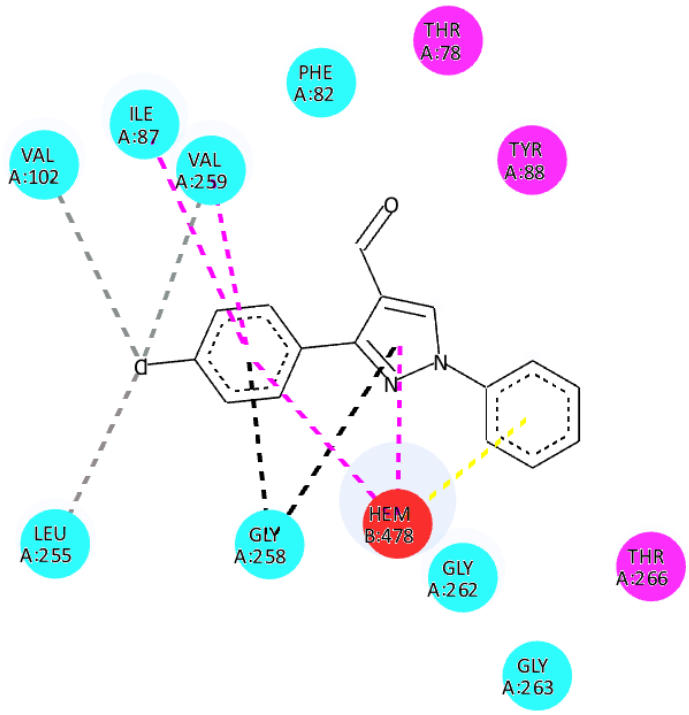
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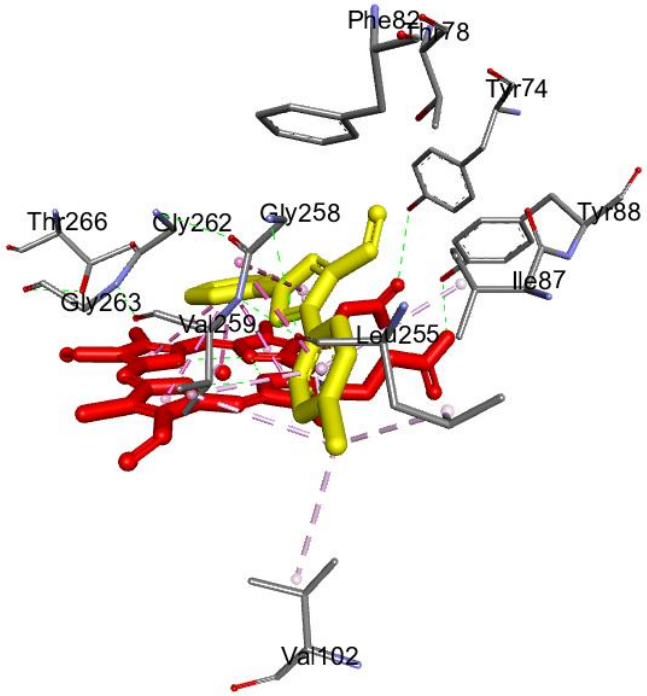
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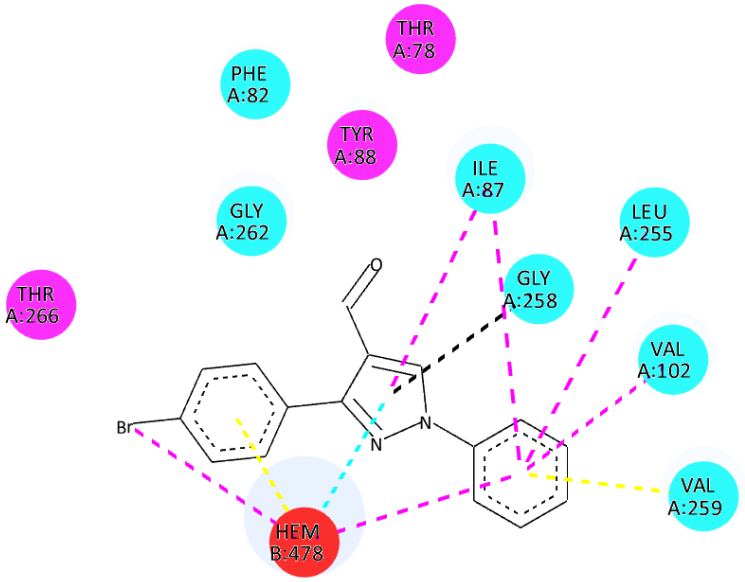
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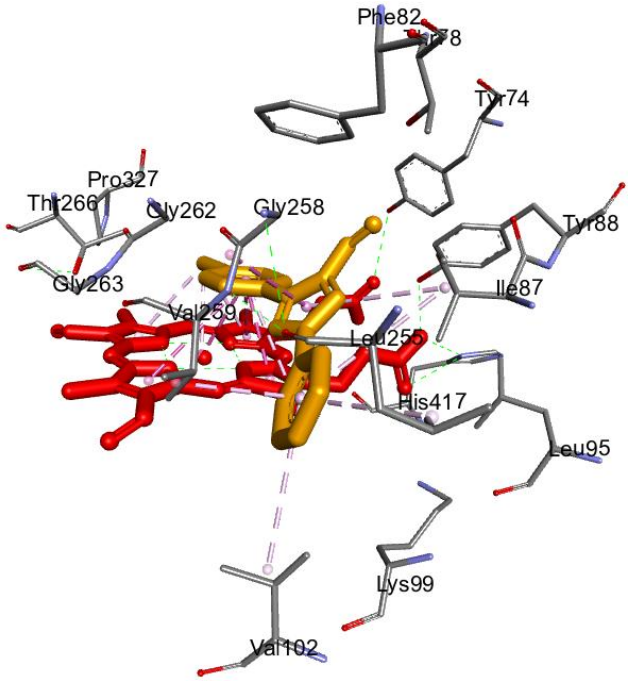
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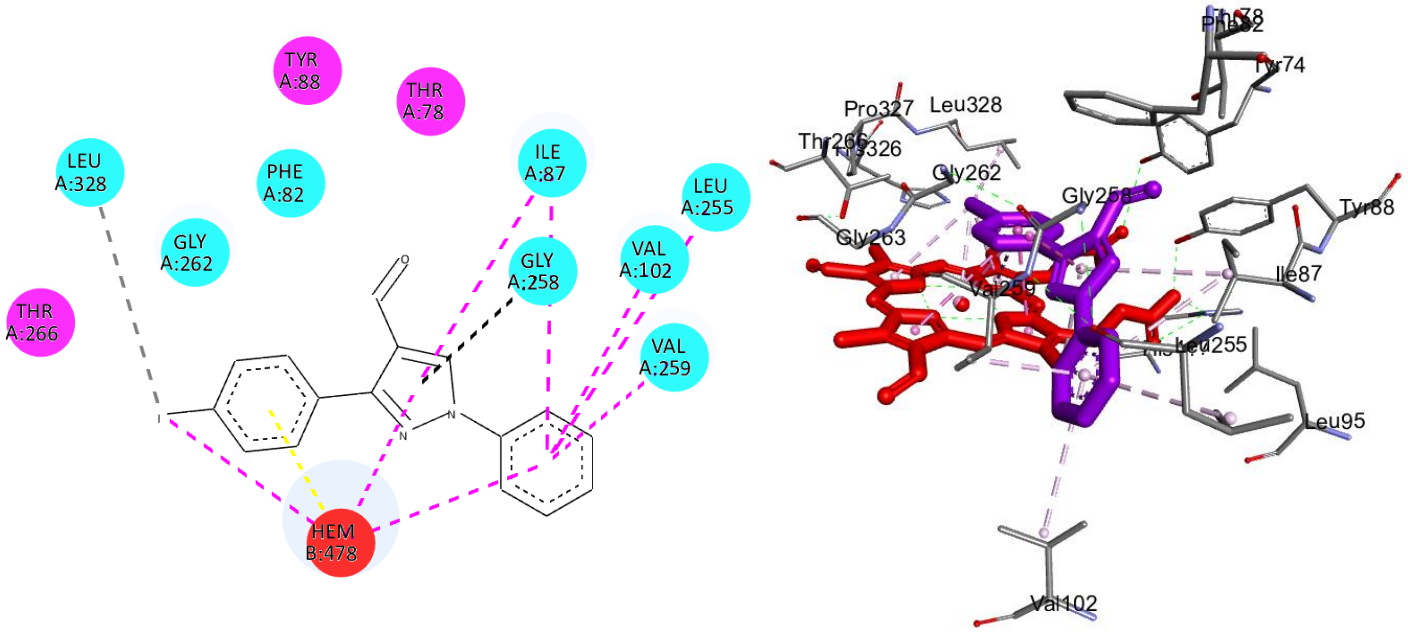
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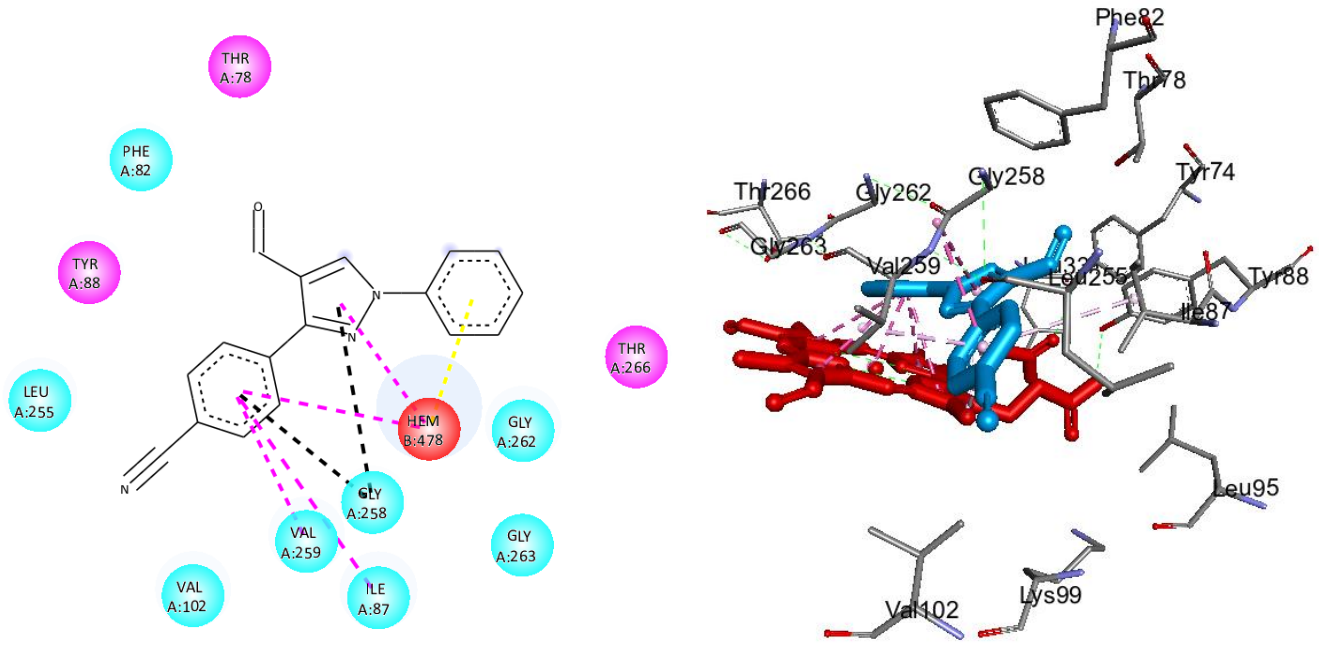
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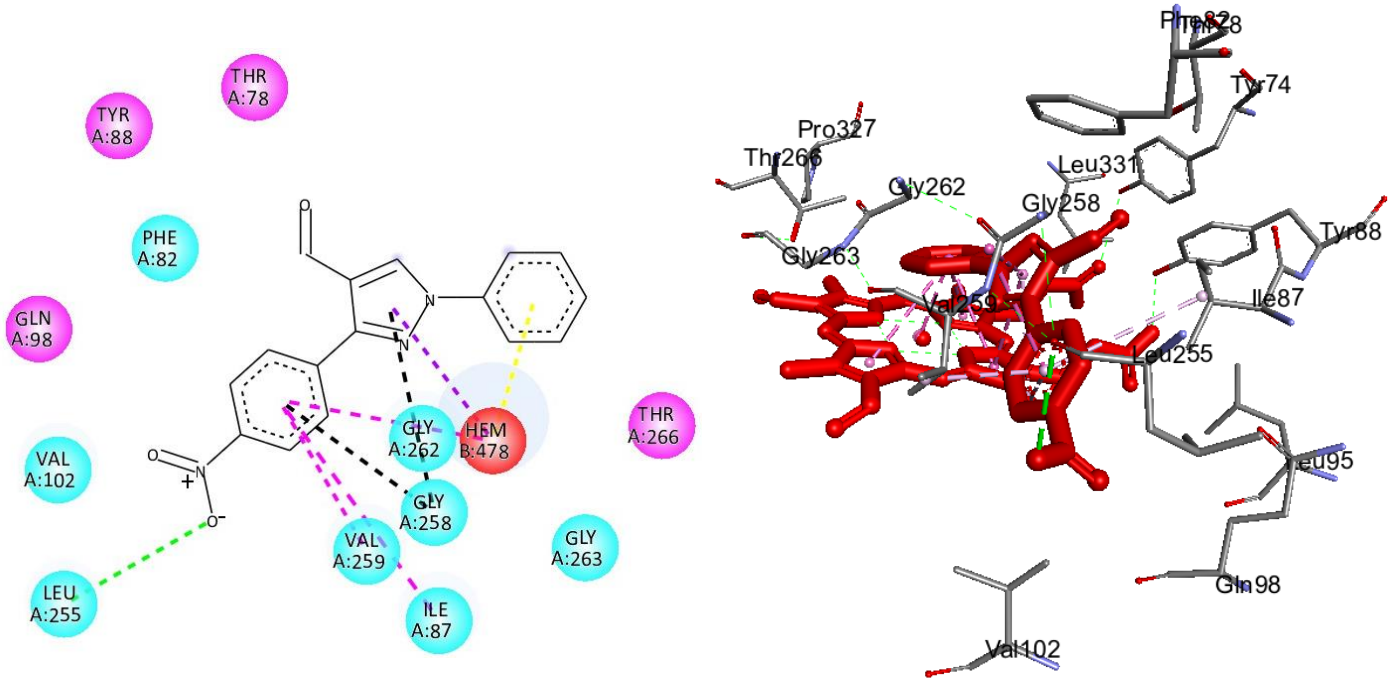
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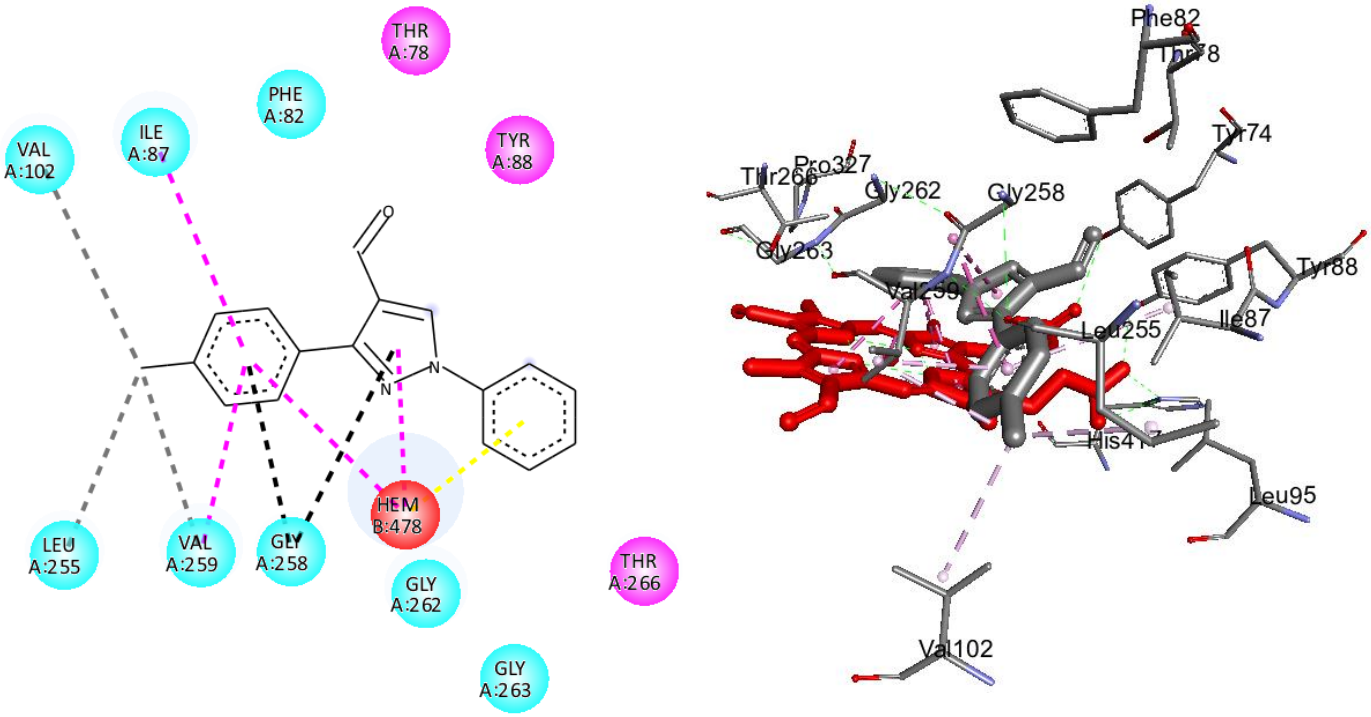
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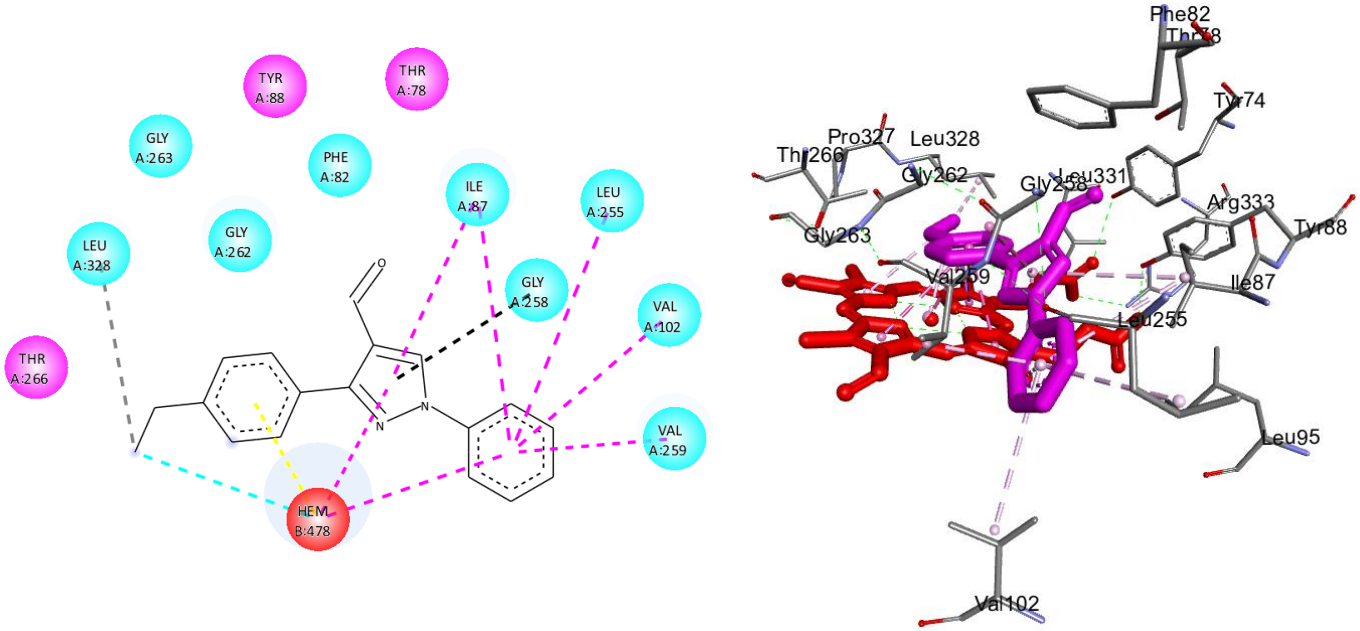
4i



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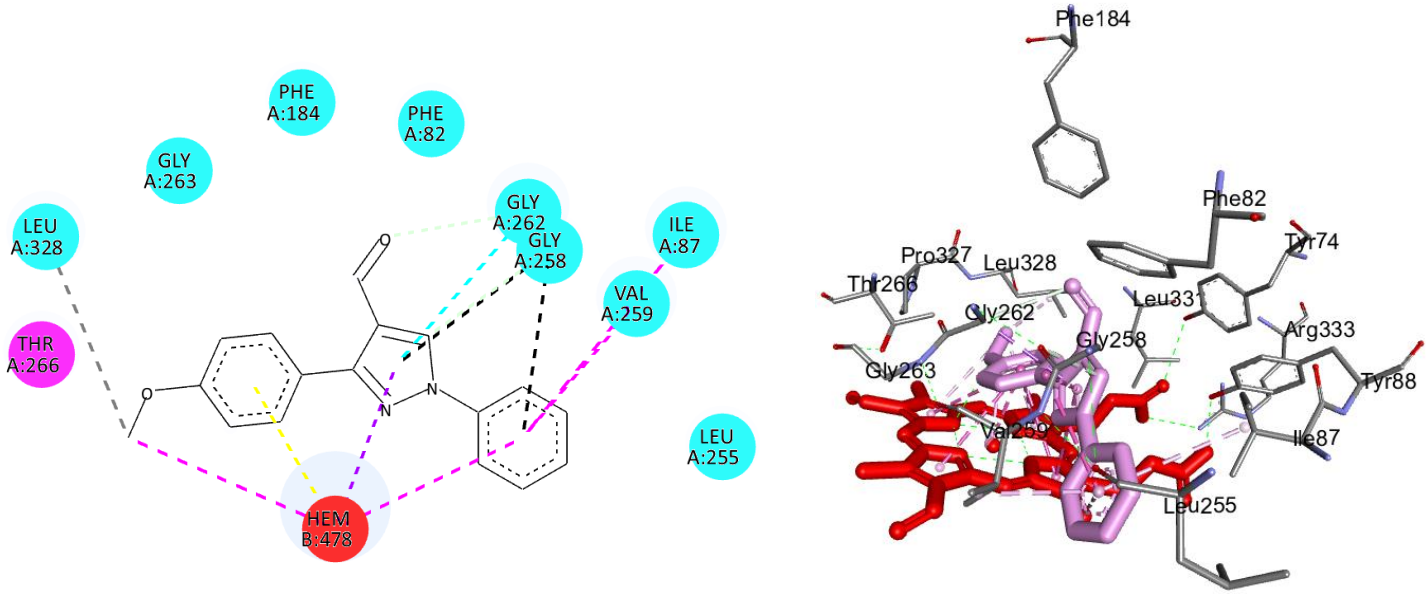
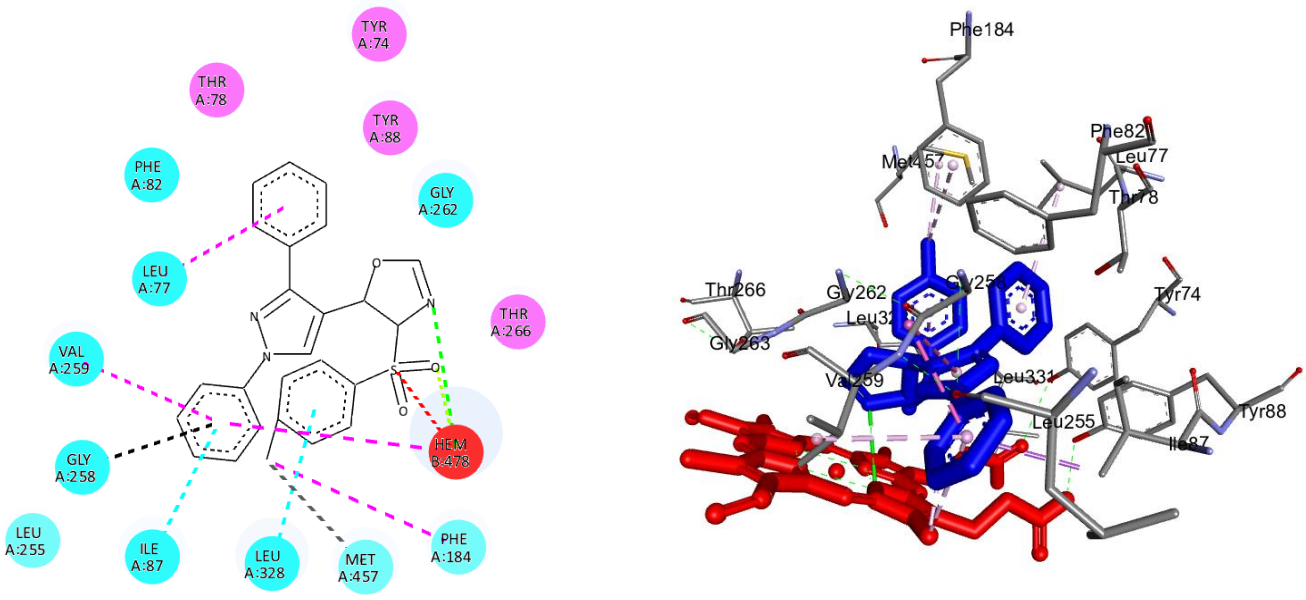


Figure S249. Schematic representation of binding modes of **fluconazole 20** and 1,3-diaryl-1*H*-pyrazole-4-carbaldehydes **4a-j**, at the active site of CYP51Cg (*C. glabrata*). The 3D

model depicts the hydrophilic bonds and amino acid residues that are part of the active site of CYP51Cg. In the 2D model, the interactions denoted with dotted lines are conventional hydrogen bonds (green), carbon-hydrogen (dark blue), π-cation (orange), π-sigma (cyan), π-alkyl (fuchsia), π-π T-shaped (purple), π-π stacked (yellow), alkyl (gray), π-sulfur (red) and halogen (brown). The heme group is in red, fluconazole **20** (green), **4a** (blue), **4b** (cyan), **4c** (yellow), **4d** (orange), **4e** (purple), **4f** (turquoise), **4g** (red), **4h** (gray), **4i** (fuchsia) and **4j** (pink). The solvent accessible surface is illustrated for the amino acid residues and ligands. The amino acids are highlighted in blue (basic), cyan (hydrophobic), and fuchsia (hydrophilic).

6a



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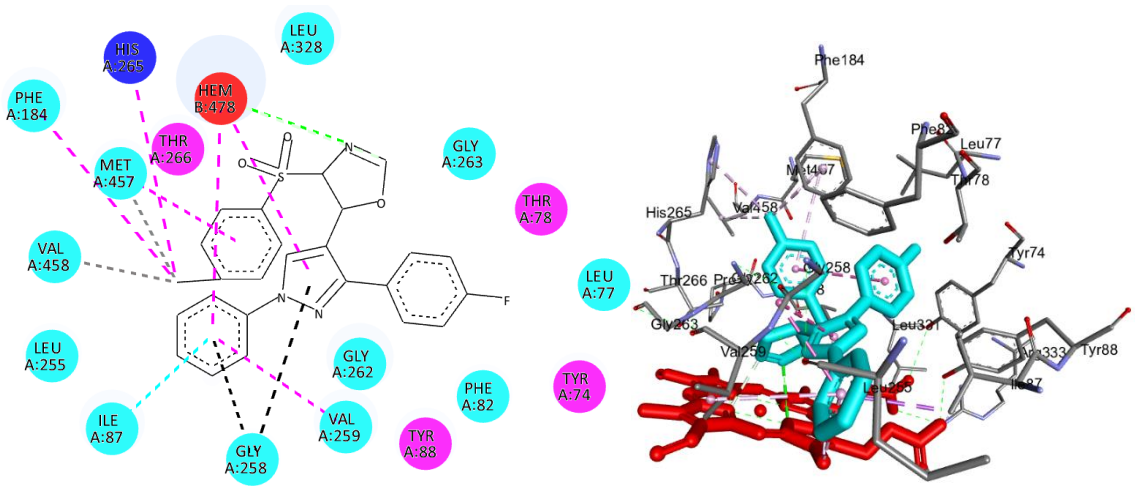
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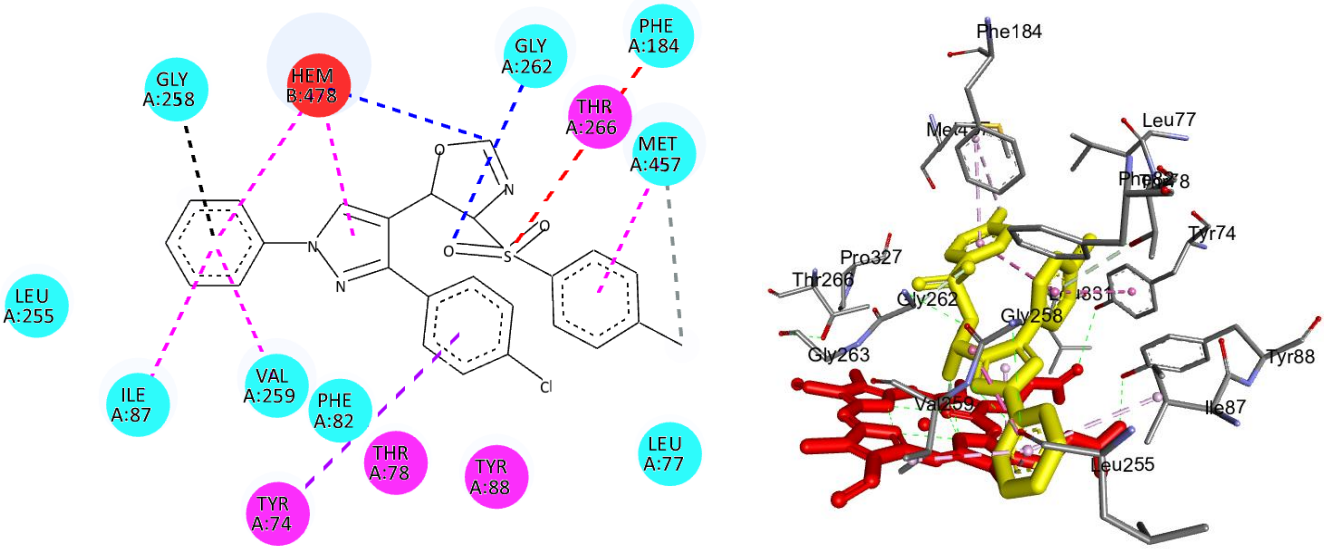
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THR A:78
TYR A:88
LEU A:77
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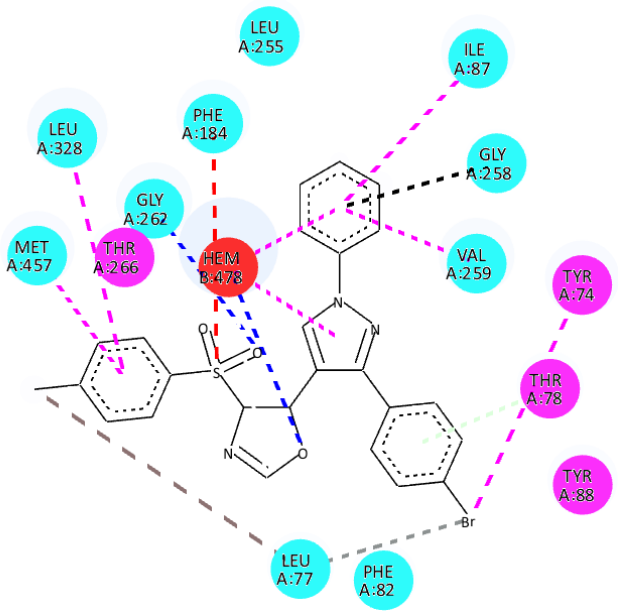
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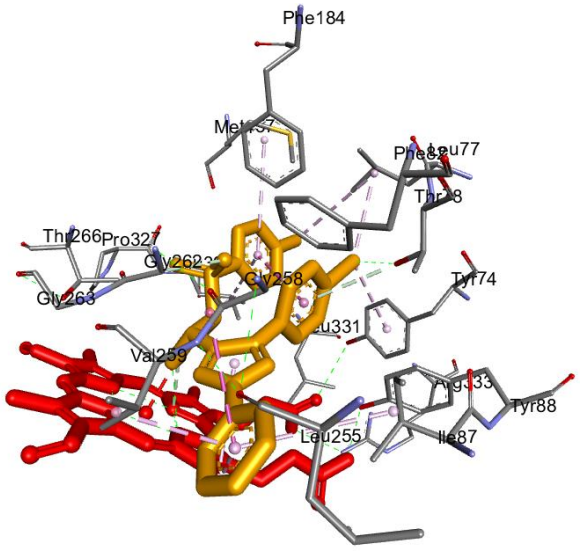
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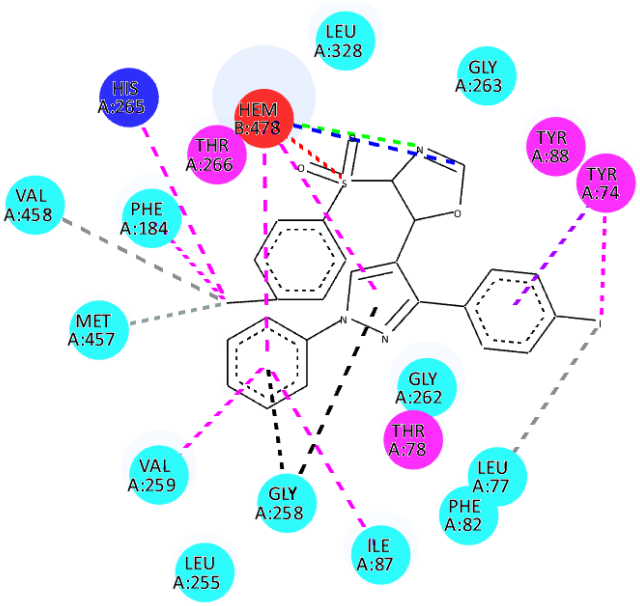
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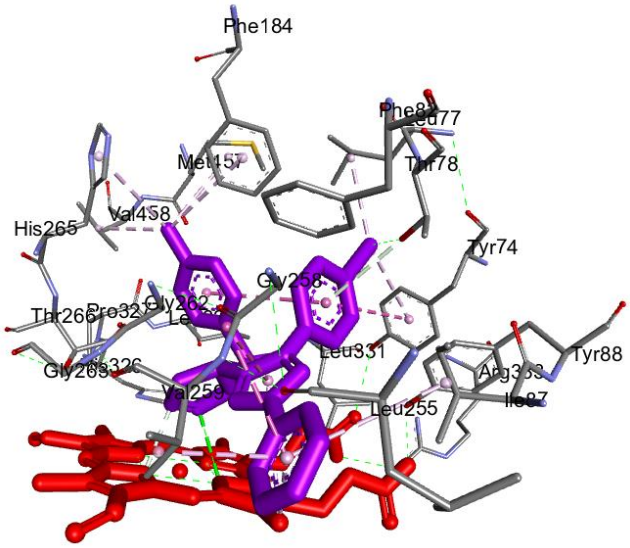
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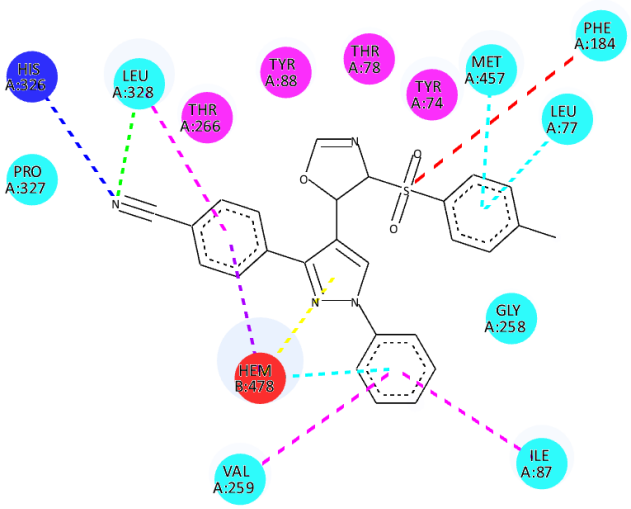
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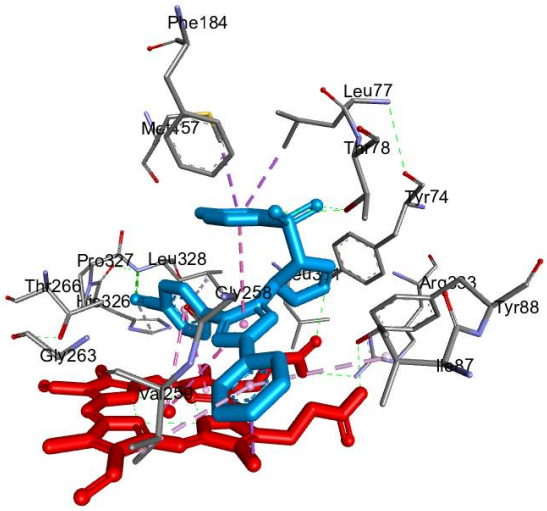
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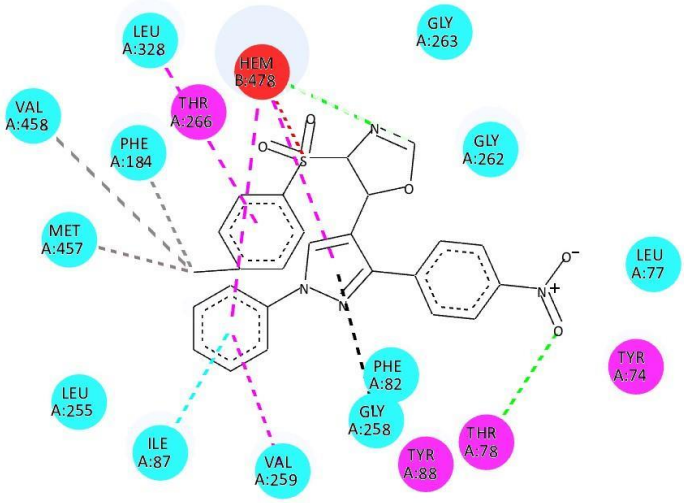
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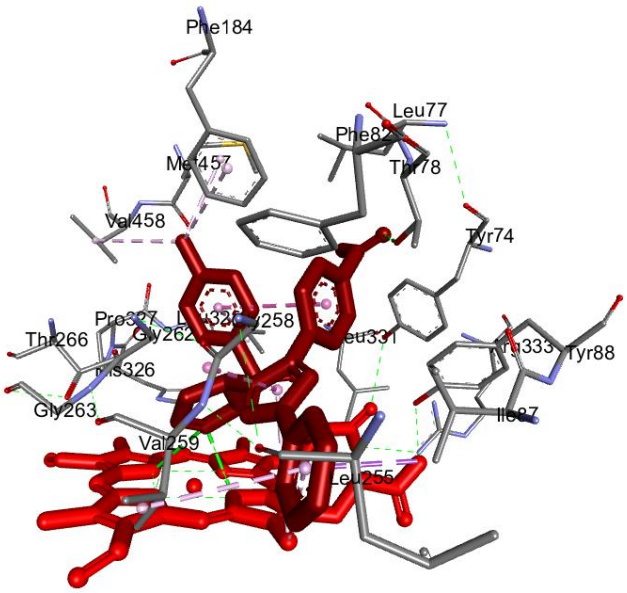
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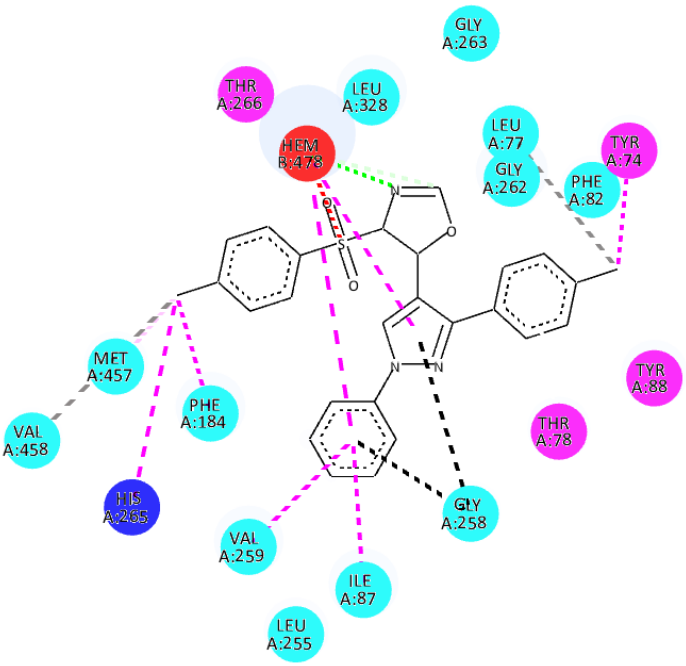
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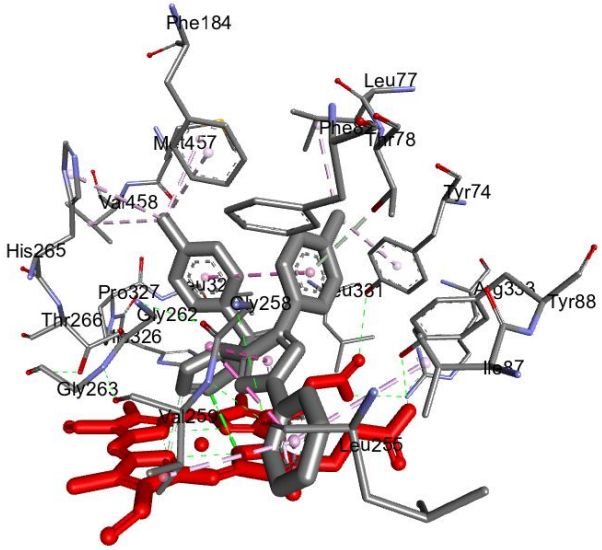
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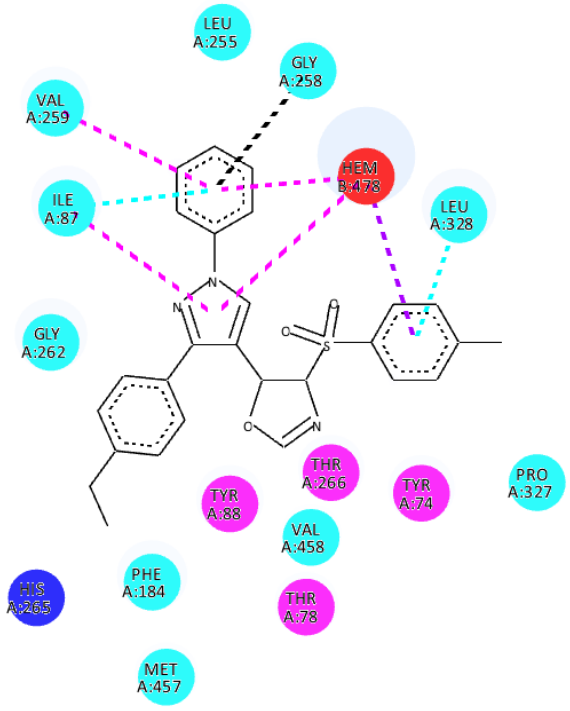
6i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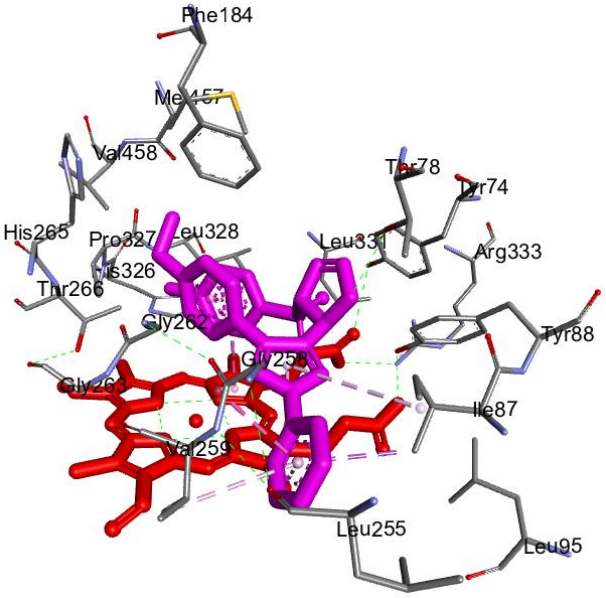
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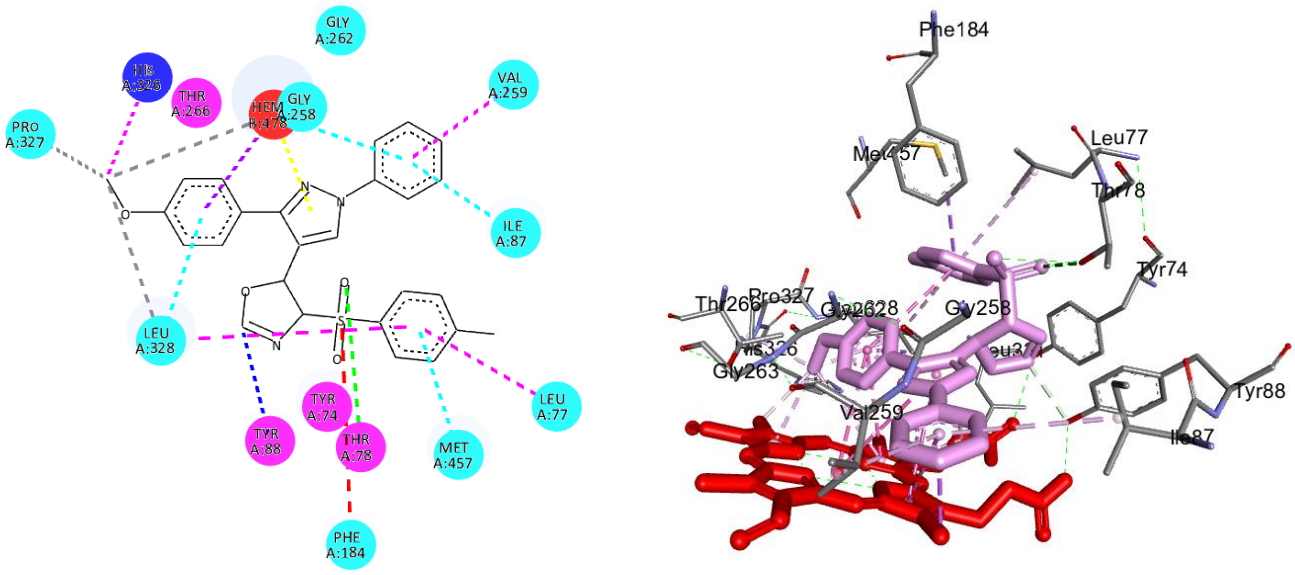

Figure S250. Schematic representation of binding modes of (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazoles **6a-j**, at the active site of CYP51Cg (*C. glabrata*). The 3D model depicts the hydrophilic bonds and amino acid residues that are part of the active site of CYP51Cg. In the 2D model, the interactions denoted with dotted lines are conventional hydrogen bonds (green), carbon-hydrogen (dark blue), π-cation (orange), π-sigma (cyan), π-alkyl (fuchsia), π-π T-shaped (purple), π-π stacked (yellow), alkyl (gray), π-sulfur (red) and halogen (brown). The heme group is in red, fluconazoles **20** (green), **6a** (blue), **6b** (cyan), **6c** (yellow), **6d** (orange), **6e** (purple), **6f** (turquoise), **6g** (red), **6h** (gray), **6i** (fuchsia) and **6j** (pink). The heme group is in red. The solvent accessible surface is illustrated for the amino acid residues and ligands. The amino acids are highlighted in blue (basic), cyan (hydrophobic), and fuchsia (hydrophilic).

Table S3. ChemScore fitness DG of 1,3-diaryl-1*H*-pyrazole-4-carbaldehydes **4a-j**, 5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazoles **6a-j**, and fluconazole **20** at the active site of lanosterol 14-alpha demethylase CYP51 from *C. albicans* determined in GOLD.

Compound		ChemScore fitness ΔG (kcal/mol)					
	R	*C. albicans*	*C. auris*	*C. dubliniensis*	*C. glabrata*	*C. haemulonii*	*C. krusei*
Fluconazole	-	-20.43	-20.43	-17.05	-15.71	-20.27	-20.27
4a	H	-43.61	-42.71	-39.98	-44.08	-42.71	-42.71
4b	F	-41.25	-41.65	-39.81	-44.36	-50.36	-41.65
4c	Cl	-44.91	-53.80	-41.81	-46.05	-50.48	-44.91
4d	Br	-48.86	-47.02	-41.69	-46.68	-56.68	-47.02
4e	I	-49.27	-48.16	-41.96	-47.14	-58.13	-48.99
4f	CN	-43.07	-53.07	-39.86	-43.53	-47.82	-45.06
4g	NO_2	-41.87	-46.04	-38.79	-30.01	-38.46	-38.80
4h	Me	-46.25	-46.48	-41.41	-45.90	-52.99	-46.48
4i	Et	-40.76	-44.90	-40.88	-42.26	-52.41	-44.90
4j	OMe	-40.48	-42.28	-38.80	-37.29	-42.28	-42.28
6a	H	--51.90	-52.12	-51.85	-40.16	-55.41	-53.19
6b	F	-52.98	-52.38	-52.98	-50.36	-54.02	-51.98
6c	Cl	-59.05	-54.72	-54.04	-50.48	-55.81	-54.15
6d	Br	-60.51	-58.28	-54.53	-56.68	-57.11	-54.26
6e	I	-54.45	-59.02	-53.56	-58.13	-54.30	-54.30
6f	CN	-51.20	-45.06	-51.20	-47.82	-51.98	-50.61
6g	NO_2	-50.40	-48.91	-49.39	-38.80	-52.78	-53.66
6h	Me	-54.26	-54.43	-54.02	-52.99	-54.48	-53.05
6i	Et	-55.83	-58.04	-53.08	-52.41	-55.58	-55.58
6j	OMe	-54.34	-52.00	-49.36	-36.92	-52.74	-49.47

Table S4. RMSD determination on the CYP51 enzyme of *Candida* spp.

CYP51 yeast	RMSD (Å)
C. auris	0.168
C. dubliniensis	0.171
C. glabrata	0.180
C. haemulonii	0.170
C. krusei	0.176

Table S5. Distances of hydrogen bond interactions observed between **fluconazole 20** and 1,3-diaryl-1*H*-pyrazole-4-carbaldehydes **4a-j** and (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazoles **6a-j** at the active site of CYP51 enzyme of *C. albicans***.**

Compound	Interaction	Distance (Å)
Fluconazole	O-H····O (Tyr132)	3.71
	C-H····O (Gly307)	3.45
	N····H-C (Gly307)	3.52
4j	C-H····O (Gln142)	3.05
6a	O····H-O (Tyr118)	3.08
	O····H-O (Tyr132)	2.73
6b	O····H-O (Tyr118)	3.74
	O····H-O (Tyr132)	3.79
	N····H-N (Met508)	3.65
6e	N····H-O (Tyr118)	2.45
	C-H····O (Ser378)	3.13
	N····H-N (Met508)	2.85
6g	C-H····O (Met508)	3.22
6h	C-H····O (Met508)	3.43
6i	C-H····O (Met508)	3.04
6j	C-H····O (Met508)	3.14

Table S6. Distances of hydrogen bond interactions observed between **fluconazole 20** and 1,3-diaryl-1*H*-pyrazole-4-carbaldehydes **4a-j** and (4*S**, 5*S**)-5-(1,3-diphenyl-1*H*-pyrazol-4-yl)-4-tosyl-4,5-dihydrooxazoles **6a-j** at the active site of CYP51 enzyme of *C. glabrata***.**

Compound	Interaction	Distance (Å)
Fluconazole	O-H····O (Gly258)	3.70
	C-H····O (Val259)	3.59
	N····H-C (Gly262)	3.33
4g	O····H-O (Leu255)	4.01
4j	C-H····O (Gln142)	3.30
6a	N····H-N (Hem478)	2.51
6b	N····H-N (Hem478)	2.45
6c	O····H-C (Gly262)	3.37
	C-H····N (Hem478)	2.79
6d	O····H-C (Gly262)	3.24
	O····H-C (Hem478)	3.00
6e	N····H-O (Tyr78)	3.71
	N····H-N (Hem478)	2.26
6f	N····H-C (His326)	3.71
	N····H-N (Leu328)	2.86

6g	O····H-O (Thr78)	4.42
	N····H-N (Hem478)	2.26
6h	N····H-N (Hem478)	2.78
6j	O····H-O (Thr78)	3.09
	C-H····O (Tyr88)	2.81