Supplementary Material

Synthesis and biochemical evaluation of 5-(pyridin-4-yl)-3-(alkylsulfanyl)-4*H*-1,2,4-triazol-4-amine-based inhibitors of tyrosinase from *Agaricus bisporus*

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Table of Contents

Selected ^{1}H-NMR and ^{13}C-NMR spectra

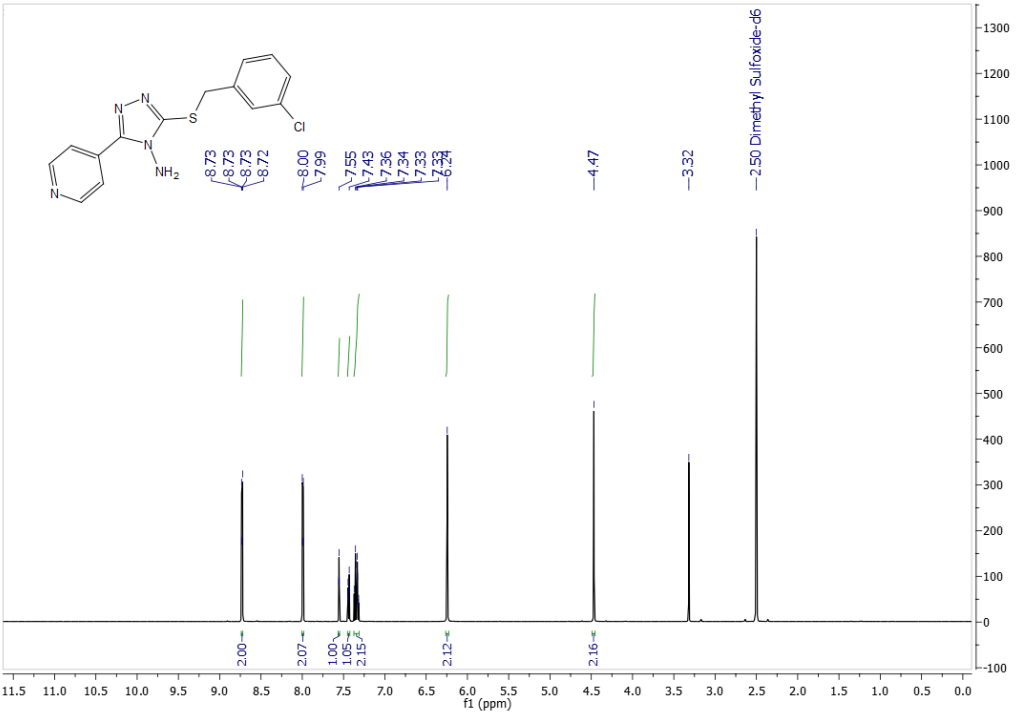

Figure S1: ^{1}H-NMR (DMSO-d_6) spectrum of 3-((3-chlorobenzyl)sulfanyl)-5-(pyridin-4-yl)-4*H*-1,2,4-triazol-4-amine (**9**).

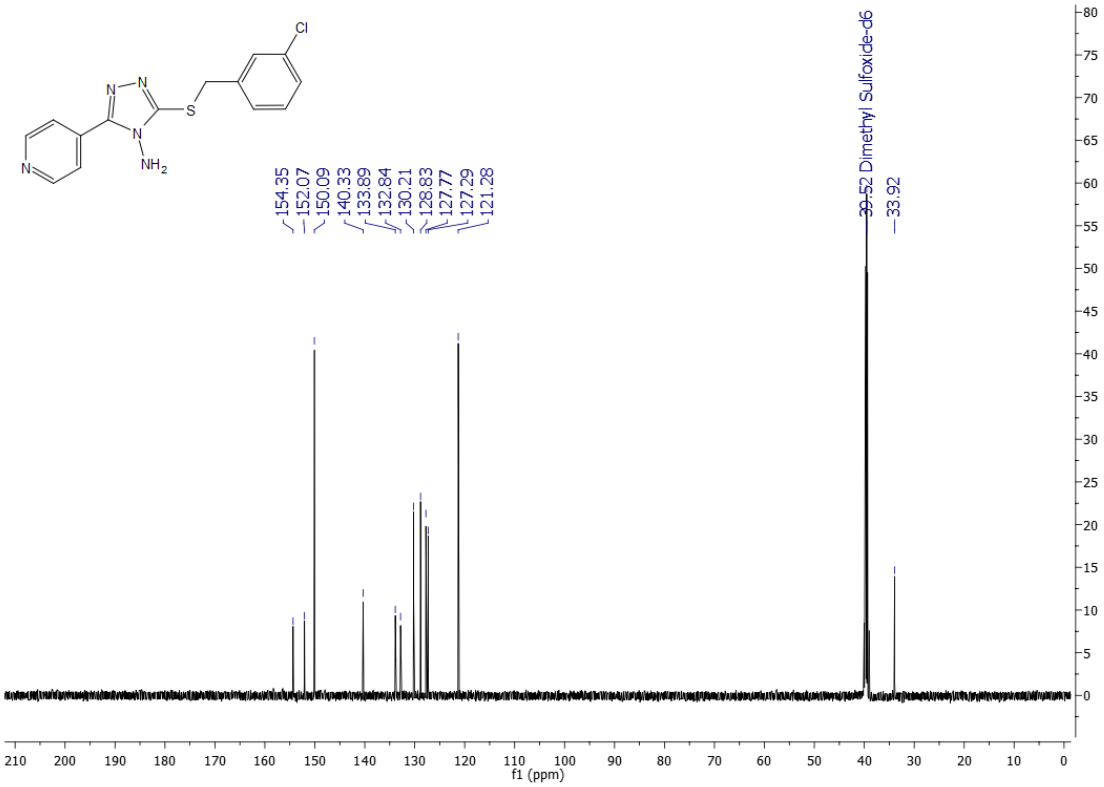

Figure S2: ^{13}C-NMR (DMSO-d_6) spectrum of 3-((3-chlorobenzyl)sulfanyl)-5-(pyridin-4-yl)-4*H*-1,2,4-triazol-4-amine (**9**).

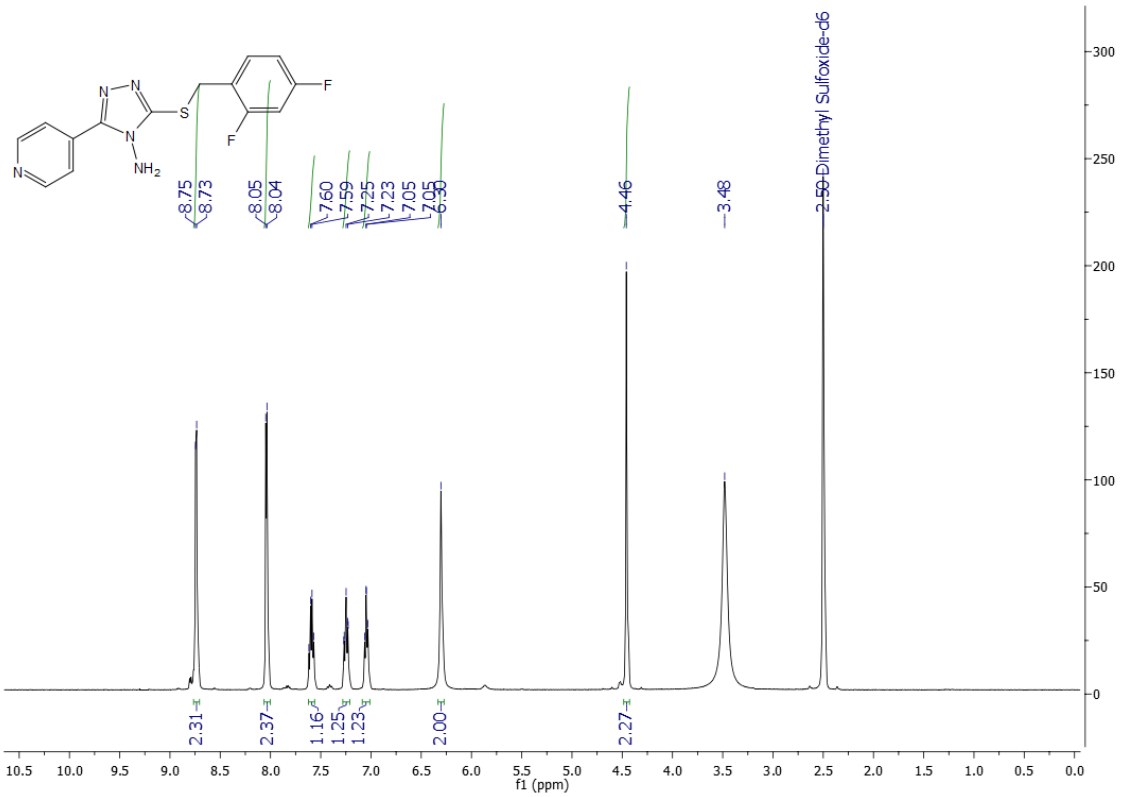

Figure S3: ^{1}H-NMR (DMSO-d_6) spectrum of 3-((2,4-difluorobenzyl)sulfanyl)-5-(pyridin-4-yl)-4*H*-1,2,4-triazol-4-amine (**13**).

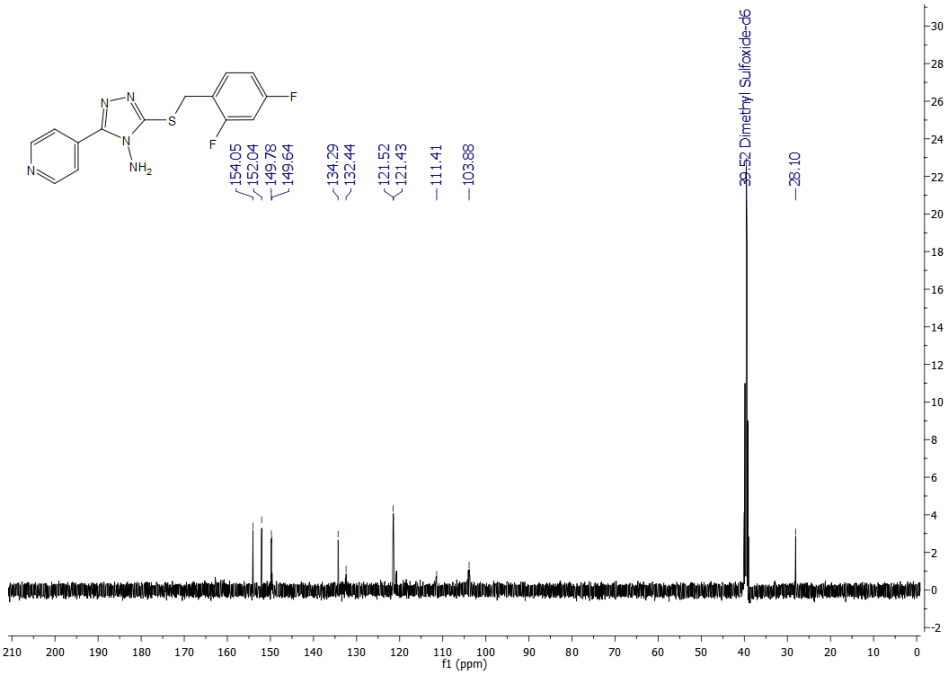

Figure S4: ^{13}C-NMR (DMSO-d_6) spectrum of 3-((2,4-difluorobenzyl)sulfanyl)-5-(pyridin-4-yl)-4*H*-1,2,4-triazol-4-amine (**13**).

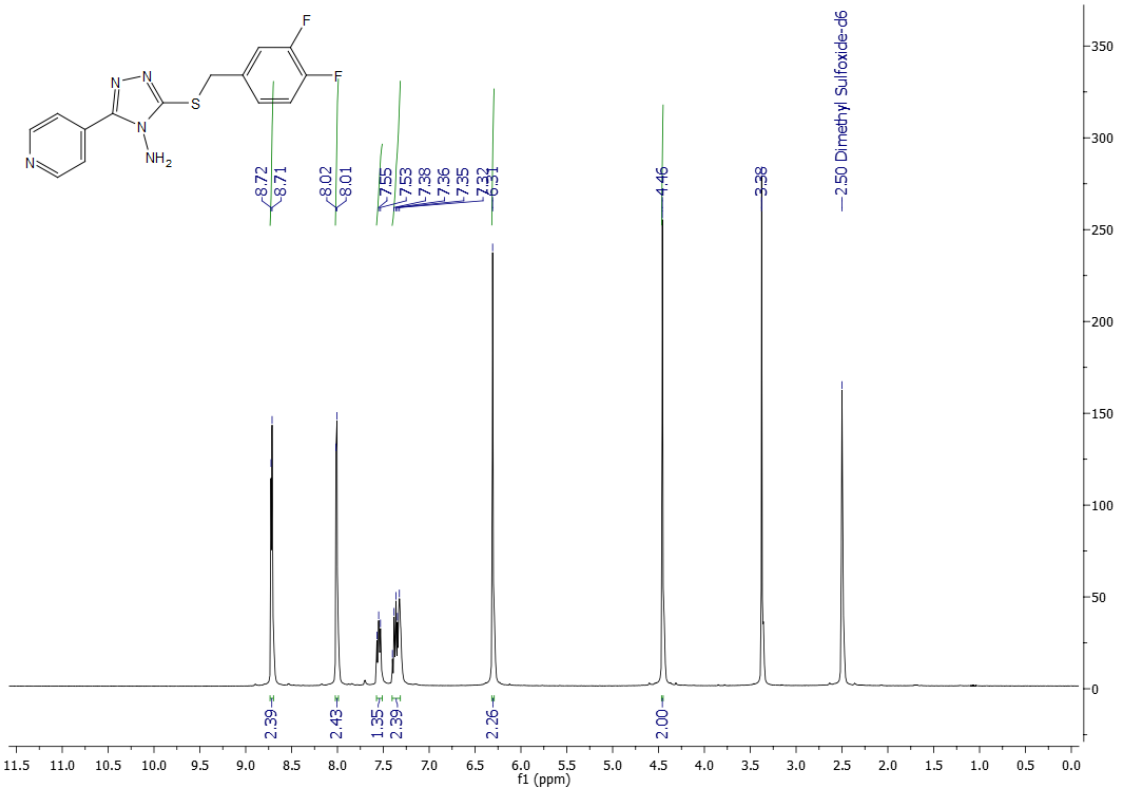

Figure S5: ^{1}H-NMR (DMSO-d_6) spectrum of 3-((3,4-difluorobenzyl)sulfanyl)-5-(pyridin-4-yl)-4*H*-1,2,4-triazol-4-amine (**14**).

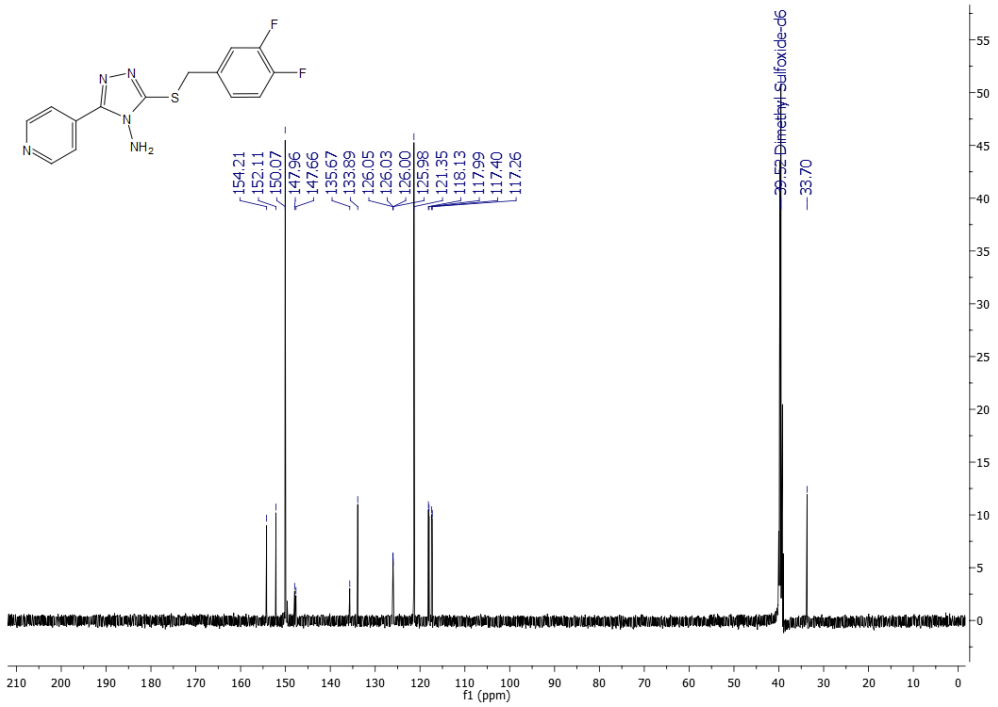

Figure S6: ^{13}C-NMR (DMSO-d_6) spectrum of 3-((3,4-difluorobenzyl)sulfanyl)-5-(pyridin-4-yl)-4*H*-1,2,4-triazol-4-amine (**14**).

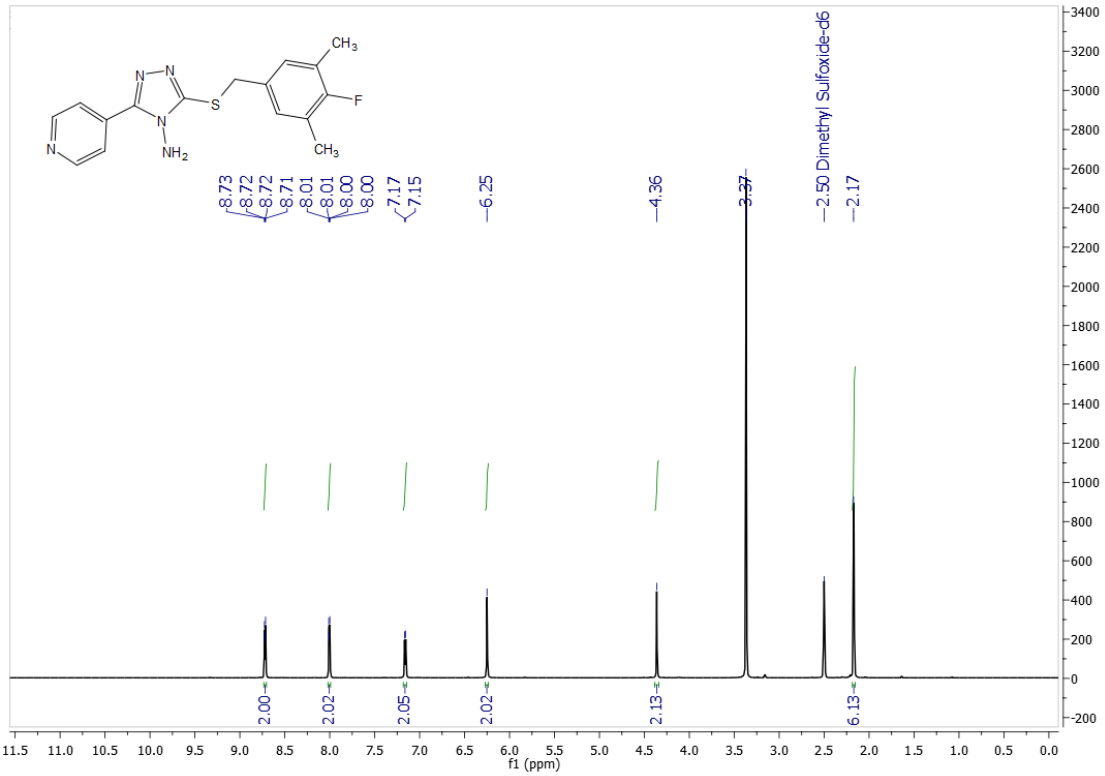

Figure S7: ^{1}H-NMR (DMSO-d_6) spectrum of 3-((4-fluoro-3,5-dimethylbenzyl)sulfanyl)-5-(pyridin-4-yl)-4*H*-1,2,4-triazol-4-amine (**15**).

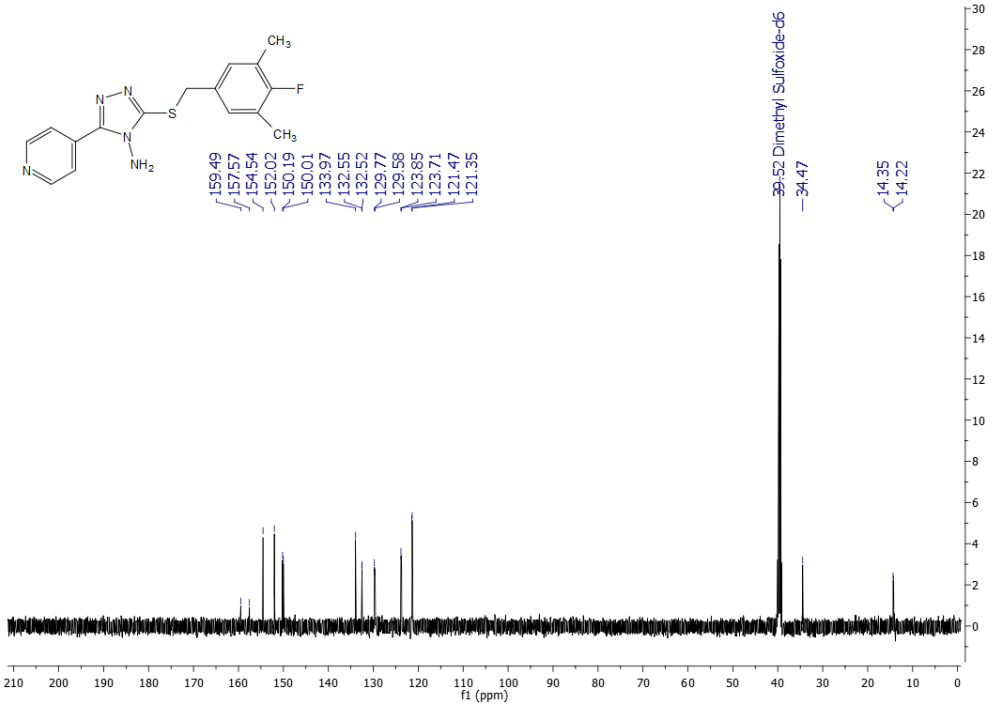

Figure S8: ^{13}C-NMR (DMSO-d_6) spectrum of 3-((4-fluoro-3,5-dimethylbenzyl)sulfanyl)-5-(pyridin-4-yl)-4*H*-1,2,4-triazol-4-amine (**15**).

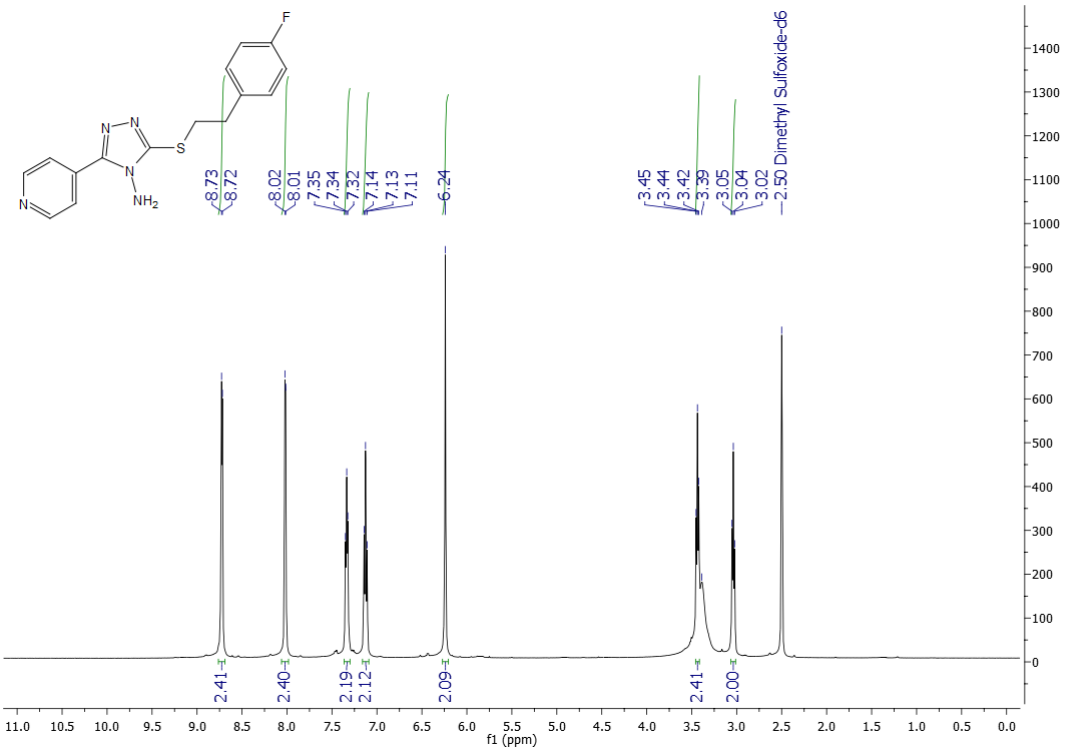

Figure S9: ^{1}H-NMR (DMSO-d_6) spectrum of 3-(4-fluorophenethylsulfa*n*yl)-5-(pyridin-4-yl)-4*H*-1,2,4-triazol-4-amine (**17**).

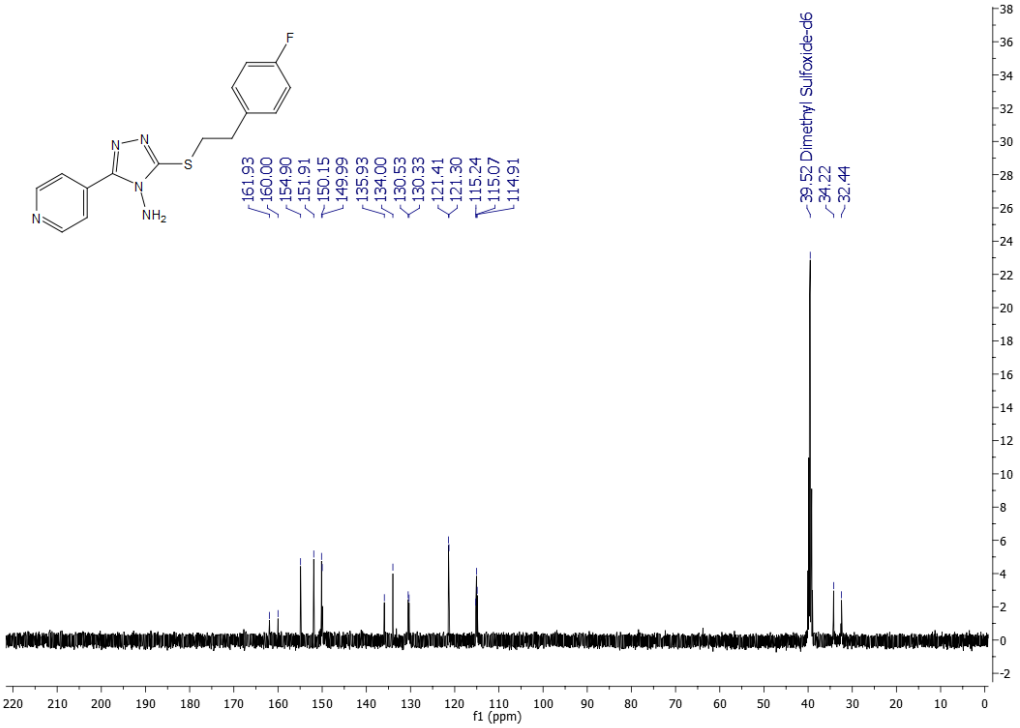

Figure S10: ^{13}C-NMR (DMSO-d_6) spectrum of 3-(4-fluorophenethylsulfa*n*yl)-5-(pyridin-4-yl)-4*H*-1,2,4-triazol-4-amine (**17**).

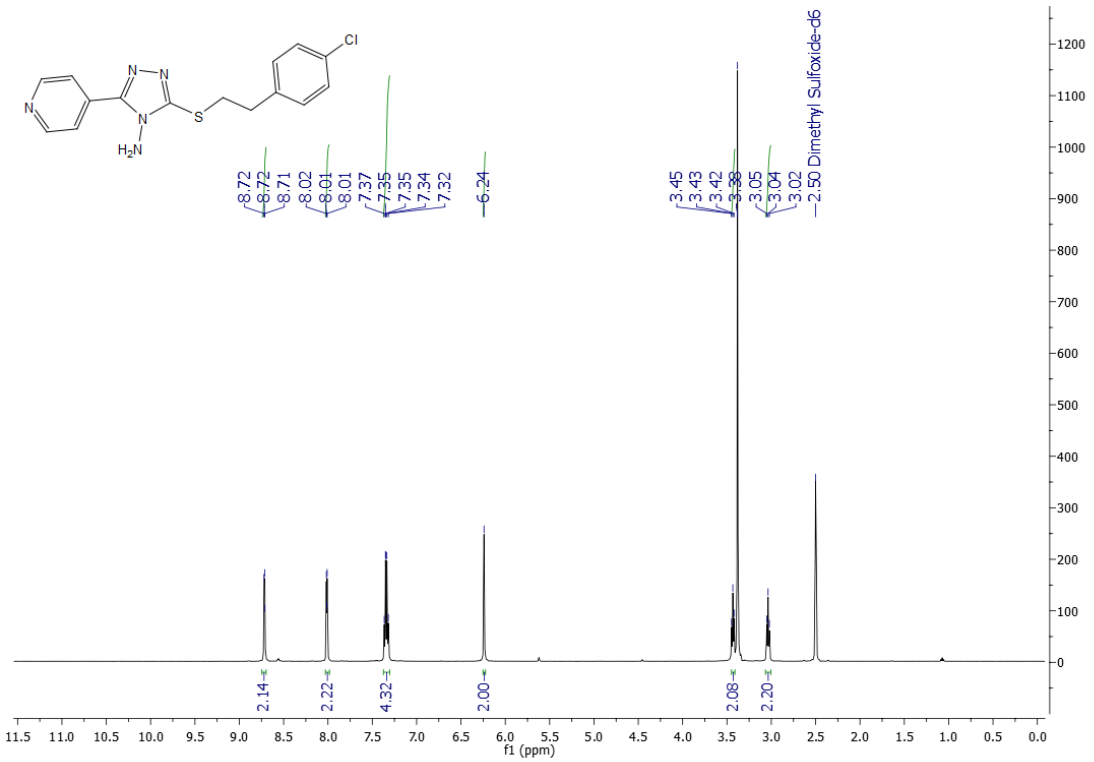

Figure S11: ^{1}H-NMR (DMSO-d_6) spectrum of 3-(4-chlorophenethylsulfa*n*yl)-5-(pyridin-4-yl)-4*H*-1,2,4-triazol-4-amine (**18**)**.**

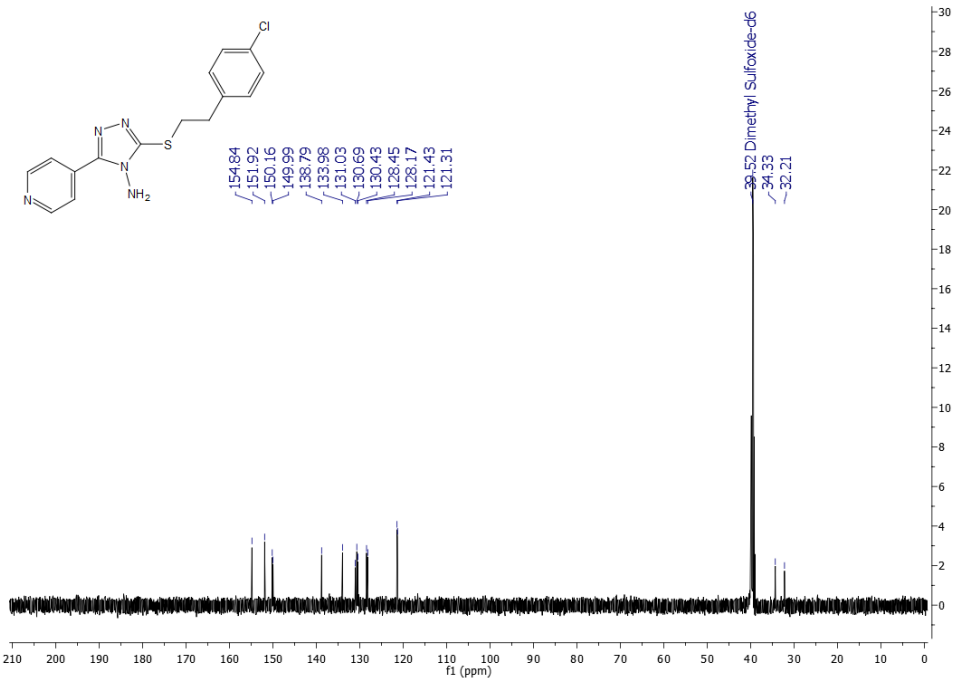

Figure S12: ^{13}C-NMR (DMSO-d_6) spectrum of 3-(4-chlorophenethylsulfa*n*yl)-5-(pyridin-4-yl)-4*H*-1,2,4-triazol-4-amine (**18**).

Table S1. Selected physicochemical parameters, lipophilicity, solubility, pharmacokinetics and drug-likeness properties for compound **6-18** predicted by SwissADME (http://swissadme.ch/)

entry	MW (g/mol)	iLogP	Water solubility*	GI absorption	BBB permeant	Lipinski	Ghose	PAINS
6	283.35	2.16	Soluble	High	No	Yes 0 violation	Yes	0 alert
7	301.34	2.04	Soluble	High	No	Yes 0 violation	Yes	0 alert
8	301.34	2.33	Soluble	High	No	Yes 0 violation	Yes	0 alert
9	317.80	2.24	Moderately soluble	High	No	Yes 0 violation	Yes	0 alert
10	317.80	2.55	Moderately soluble	High	No	Yes 0 violation	Yes	0 alert
11	297.38	2.21	Moderately soluble	High	No	Yes 0 violation	Yes	0 alert
12	297.38	2.26	Moderately soluble	High	No	Yes 0 violation	Yes	0 alert
13	319.33	2.55	Soluble	High	No	Yes 0 violation	Yes	0 alert
14	319.33	2.25	Soluble	High	No	Yes 0 violation	Yes	0 alert
15	329.40	2.22	Moderately soluble	High	No	Yes 0 violation	Yes	0 alert
16	297.38	2.30	Moderately soluble	High	No	Yes 0 violation	Yes	0 alert
17	315.37	2.29	Moderately soluble	High	No	Yes 0 violation	Yes	0 alert
18	331.82	2.61	Moderately soluble	High	No	Yes 0 violation	Yes	0 alert

*****_Water solubility:_ Soluble= _Log S (Ali) values between -4 and -2;_ Moderately soluble= _Log S (Ali) values between -6 and -4._

Table S2. Smiles strings for compounds **6-18**

Compound	Smiles string
6	Nn1c(SCc2ccccc2)nnc1c3ccncc3
7	Nn1c(SCc2cccc(F)c2)nnc1c3ccncc3
8	Nn1c(SCc2ccc(F)cc2)nnc1c3ccncc3
9	Nn1c(SCc2cccc(Cl)c2)nnc1c3ccncc3
10	Nn1c(SCc2ccc(Cl)cc2)nnc1c3ccncc3
11	Cc1cccc(CSc2nnc(c3ccncc3)n2N)c1
12	Cc1ccc(CSc2nnc(c3ccncc3)n2N)cc1
13	Nn1c(SCc2ccc(F)cc2F)nnc1c3ccncc3
14	Nn1c(SCc2ccc(F)c(F)c2)nnc1c3ccncc3
15	Cc1cc(CSc2nnc(c3ccncc3)n2N)cc(C)c1F
16	Nn1c(SCCc2ccccc2)nnc1c3ccncc3
17	Nn1c(SCCc2ccc(F)cc2)nnc1c3ccncc3
18	Nn1c(SCCc2ccc(Cl)cc2)nnc1c3ccncc3