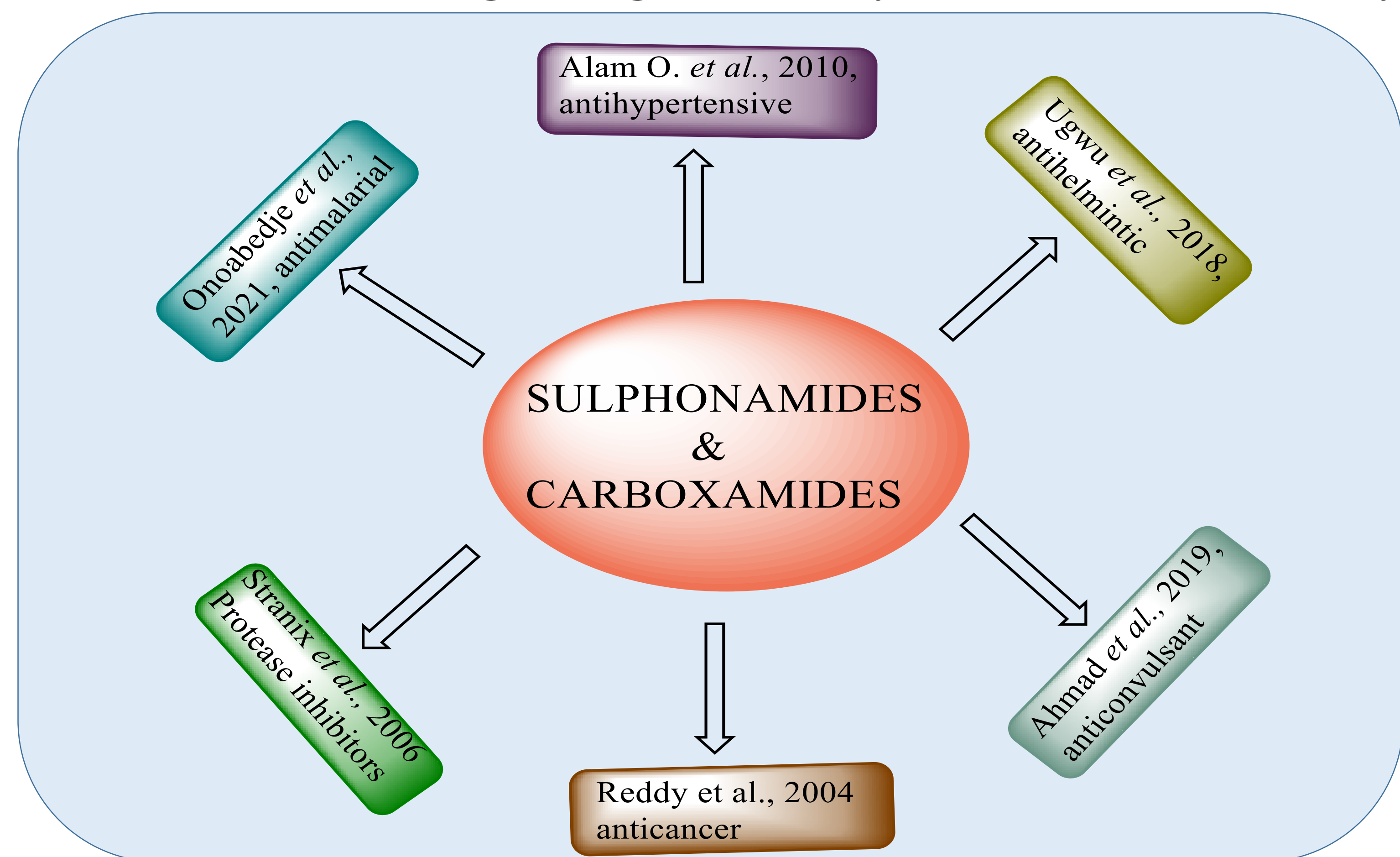




INTRODUCTION

Plasmodium species like falciparum, vivax, malariae, ovale, and knowlesi are responsible for the protozoan disease known as malaria. Sulphonamides and its corresponding carboxamide analogues have been widely used in medicinal chemistry due to their low cost, strong biological activity, and moderate toxicity.



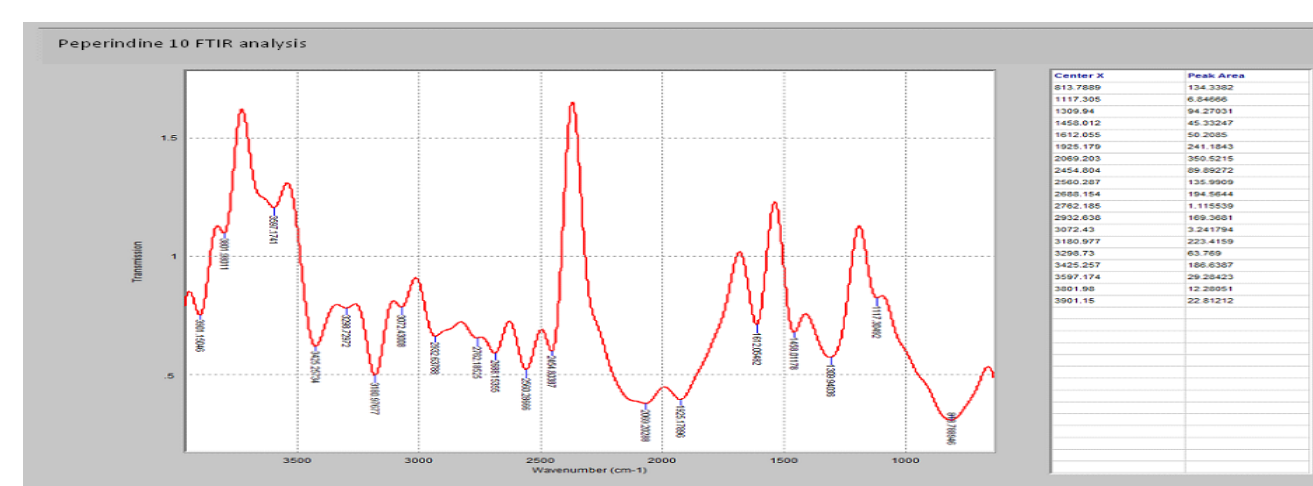
REFERENCES

1. Ali, A., Ali, A., Bakht, M. A. & Ahsan, M. J. (2021). Ultrasound promoted synthesis of *N* - (substituted phenyl)-2-(7-hydroxy-4-methyl-2 *H*-chromen-2-ylidene)hydrazine-1-carboxamides as cytotoxic and antioxidant agents. *Journal of Molecular Structure* 1238, 130452. <https://doi.org/10.1016/j.molstructure.2022.130452>, 0022-2860.

CONCLUSION

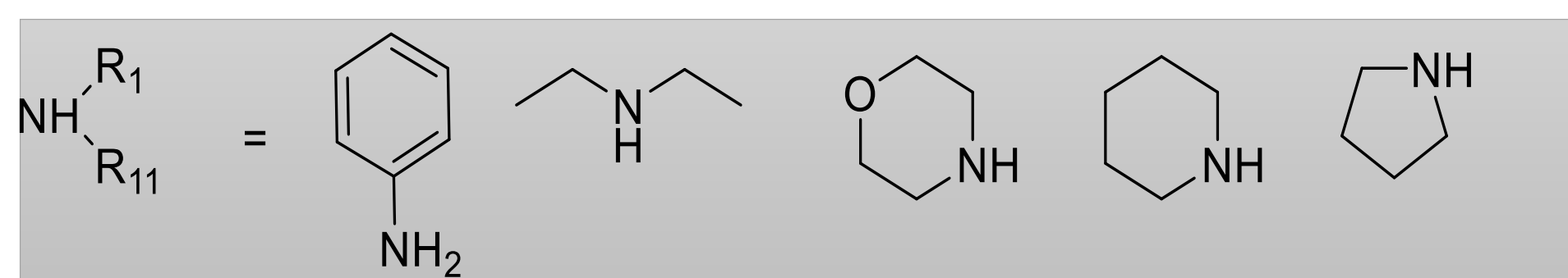
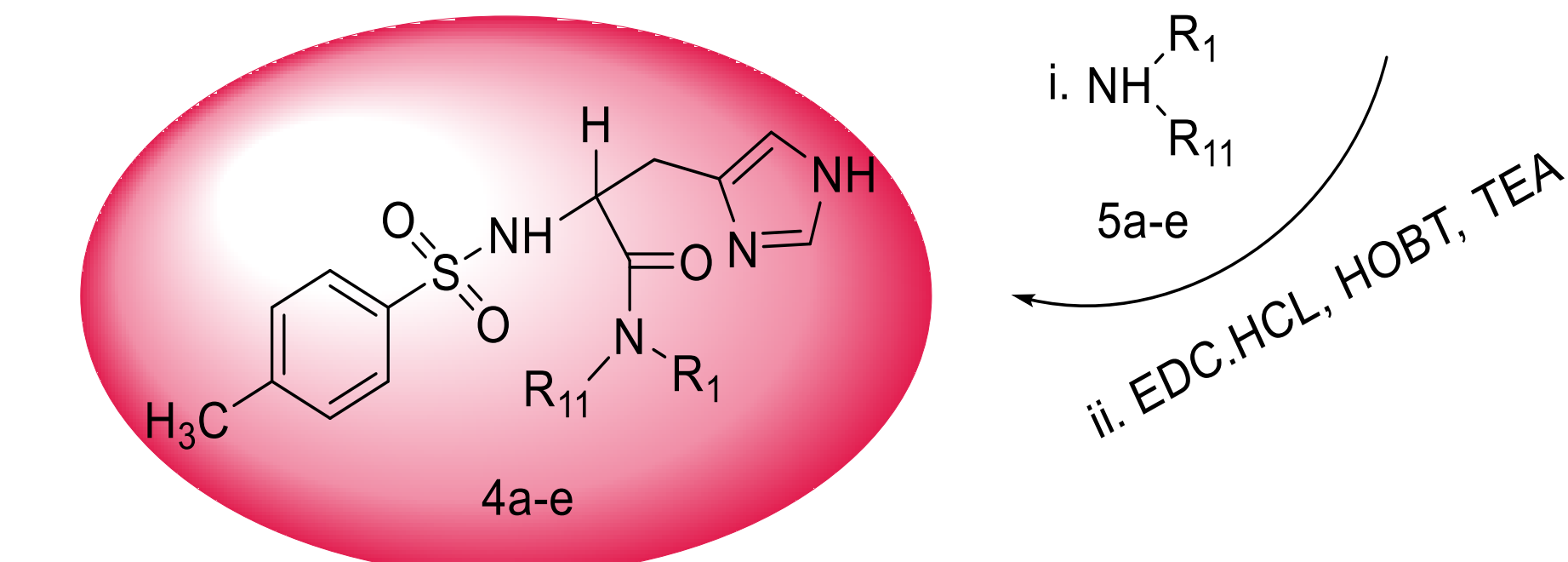
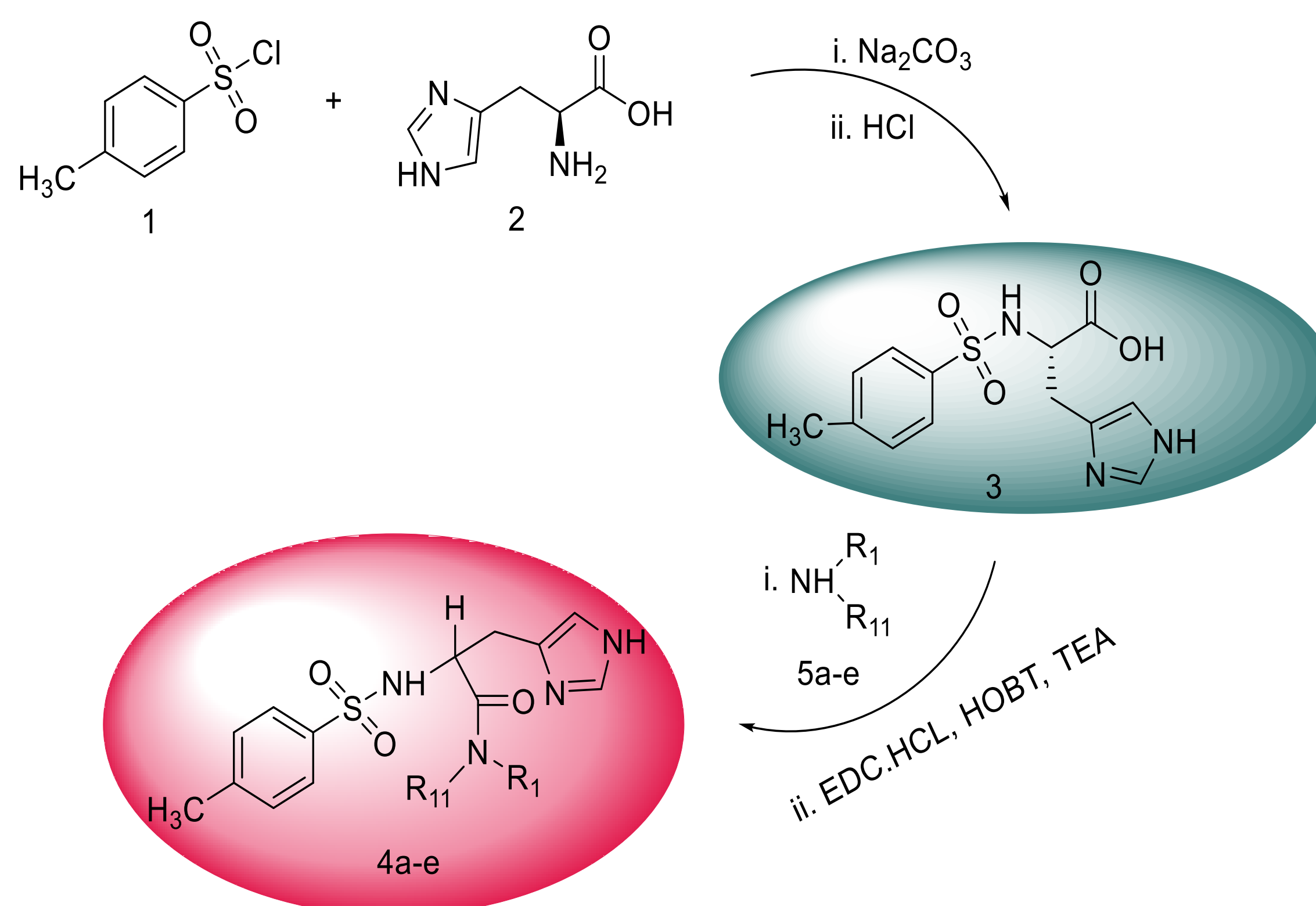
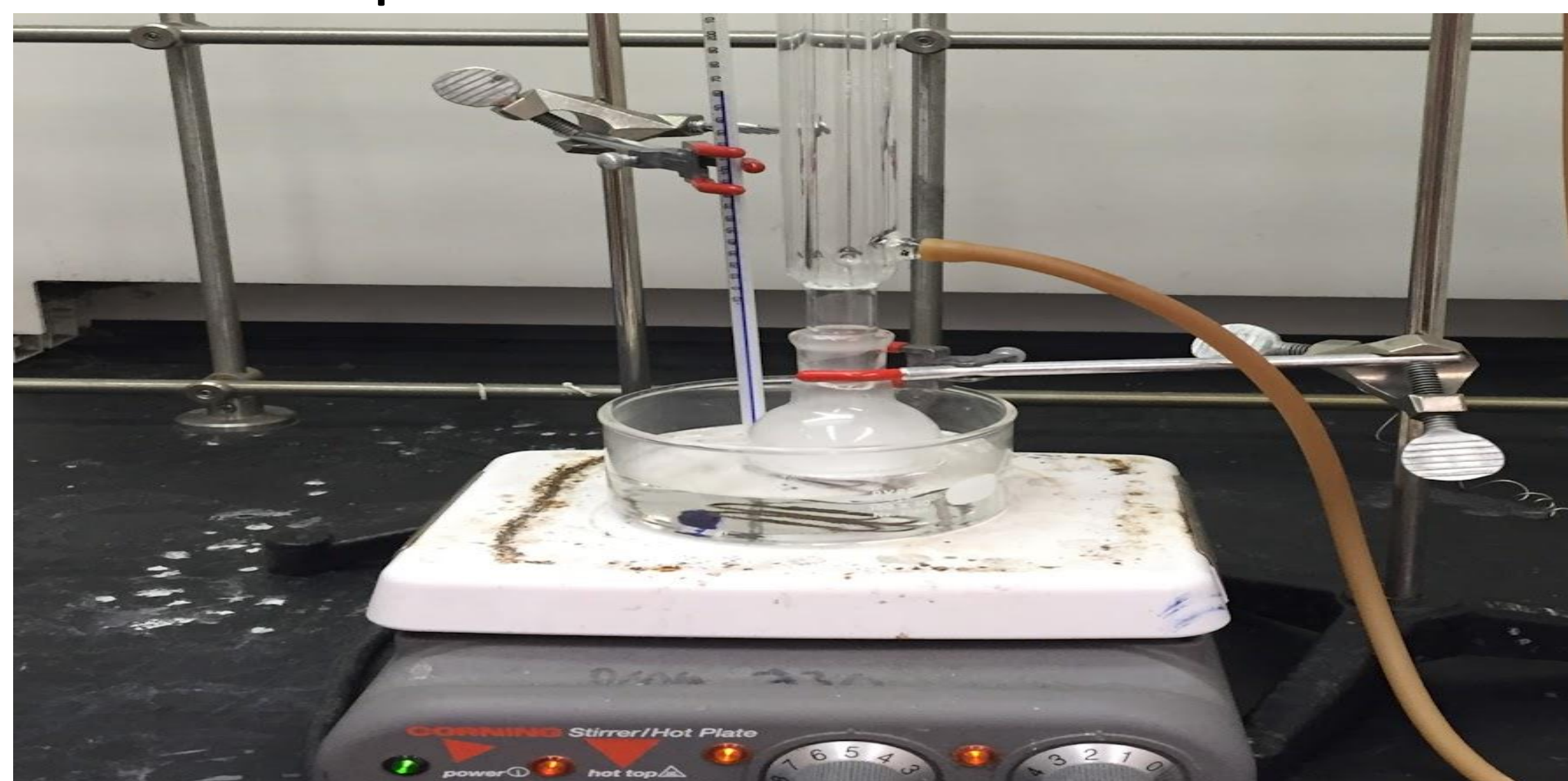
Five sulphonamides bearing carboxamide functionality were successfully synthesized and evaluated for their diverse biological efficacy.

FTIR of Compound 4d

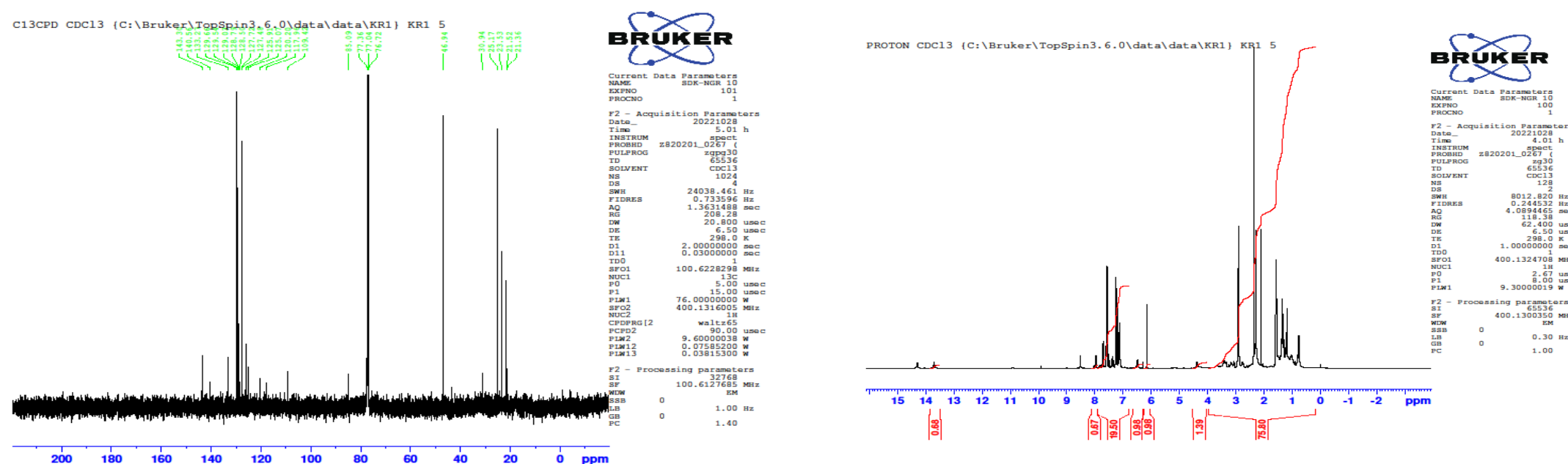


EXPERIMENTAL CONDITIONS

Synthetic route for the synthesis of Sulphonamides and carboxamides



¹H NMR and ¹³C-NMR of Compound 4d



RESULTS AND DISCUSSION

Strcture	FTIR (cm ⁻¹)	¹ H NMR (ppm)	¹³ C-NMR (ppm)
	3674, 3463, 3299 (N-H), 3187 (C-H aromatics), 2981, 2789 (C-H aliphatic), 1284 (S=O), 1720 (C=O), 1071 (SO ₂ NH).	δ: 13.4 (s, HN-CH=N) 9.60 (s, 1H, NH-C=O), 8.7 (s, 1H, CH=N), 8.3 (s, 1H, NH-SO ₂), 7.7 (s, 1H, CH-NH), 7.7-7.1 (ArH), 4.8 (t, 1H, CH-CH ₂), 3.0 (d, 2H, CH ₂ -CH), 2.4 (s, 3H, CH ₃).	δ: 173.0 (C=O), 142.33 (C-SO ₂), 140.89 (C-NH), 136.40 (C-CH ₃), 129.63 (CH=N), 128.99 (C-N), 127.26, 125.29, 121.70, 120.35 (Ar-C) 109.33 (CH-NH), 77.35 (CH-CH ₂), 28.50 (CH ₂ -CH), 21.53 (CH ₃).
	3694, 3567, 3395 (N-H), 3100 (C-H aromatics), 2853, 2705 (C-H aliphatic), 1718 (C=O), 1247 (S=O).	δ: 13.2 (s, HN-CH=N) 8.2 (s, 1H, CH=N), 7.7 (s, 1H, HN-SO ₂), 7.7-7.4 (d, 4H, ArH), 7.60 (s, 1H, CH-NH), 3.9 (t, 1H, CH-CH ₂), 3.3 (q, 2H, CH ₂ -CH ₃), 2.4 (d, 2H, CH ₂ -CH), 2.3 (s, 3H, CH ₃) 1.2 (t, 3H, CH ₃ -CH ₂).	δ: 165.0 (C=O), 142.91 (C-SO ₂), 137.44 (C-CH ₃), 129.60 (CH=N), 127.05 (C-N), 125.07, 120.21, 109.42 (CH-NH), 76.71 (CH-CH ₂), 42.00 (CH ₂ -CH ₃), 32.00 (CH ₂ -CH), 21.48 (CH ₃), 14.14 (CH ₃ -CH ₂).
	3521, 3381 (N-H), 3184 (C-H aromatics), 2954, 2860 (C-H aliphatic), 1739 (C=O), 1299 (S=O), 1125 (SO ₂ NH)	δ: 8.2 (s, 1H, CH=N), 7.8 (s, 1H, HN-SO ₂), 7.7 (s, 1H, CH-NH), 7.7-7.3 (d, 4H, ArH), 3.9 (t, 1H, CH-CH ₂), 3.6 (t, 4H, CH ₂ -O-CH ₂), 3.1 (t, 4H, CH ₂ -N-CH ₂), 2.5 (d, 2H, CH ₂ -CH), 2.1 (s, 3H, CH ₃).	δ: 165.0 (C=O), 143.97 (C-SO ₂), 132.06 (C-CH ₃), 129.76 (CH=N), 128.70 (C-N), 125.07, 120.21, 109.42 (CH-NH), 77.35 (CH ₂ -O-CH ₂), 76.71 (CH-CH ₂), 66.11 (CH ₂ -N-CH ₂), 46.00 (CH ₂ -CH), 21.56 (CH ₃).
	3597, 3426 (N-H), 3072 (C-H aromatic) 2933, 2762 (C-H aliphatic), 1712 (C=O), 1458 (C=C aromatics), 1310 (S=O), 1117 (SO ₂ NH).	δ: 13.5 (s, 1H, HN-CH=N), 8.6 (s, 1H, HC=N), 8.2 (s, 1H, HN-SO ₂), 7.8 (s, 1H, CH-NH), 7.6-7.3 (d, 4H, ArH), 4.3 (t, 1H, CH-CH ₂), 3.5 (t, 4H, CH ₂ -N-CH ₂), 2.9 (d, 2H, CH ₂ -CH), 2.4 (s, 3H, CH ₃), 1.5 (t, 6H, CH ₂ -CH ₂ -CH ₂).	δ: 169.0 (C=O), 143.30 (C-SO ₂), 140.56 (C-CH ₃), 133.27 (CH=N), 129.03 (C-N), 128.50, 127.77, 117.96 (CH-NH), 76.72 (CH-CH ₂), 46.94 (CH ₂ -N-CH ₂), 30.94 (CH ₂ -CH), 25.17 (CH ₂ -CH ₂), 23.53 (CH ₂ -CH ₂), 21.52 (CH ₃).
	3549, 3467 (N-H), 3098 (C-H aromatic), 2836, 2743 (C-H aliphatic), 1743 (C=O), 1258 (S=O), 1164 (SO ₂ NH).	δ: 8.4 (s, 1H, HC=N), 8.2 (s, 1H, NH-SO ₂), 7.8 (s, 1H, CH-HN), 7.7-7.3 (d, 4H, ArH), 4.1 (t, 1H, CH-CH ₂), 3.5 (t, 4H, CH ₂ -N-CH ₂), 2.9 (d, 2H, CH ₂ -CH), 2.4 (s, 3H, CH ₃), 1.7 (t, 4H, CH ₂ -CH ₂).	δ: 172.0 (C=O), 143.31 (C-SO ₂), 136.64 (C-CH ₃), 133.99 (CH=N), 129.61 (C-N), 128.96, 127.60, 125.80 (CH-NH), 54.19 (CH-CH ₂), 47.91 (CH ₂ -N-CH ₂), 37.96 (CH ₂ -CH), 25.20 (CH ₂ -CH ₂), 21.52 (CH ₃).