SUPPORTING INFORMATION

Synthesis of sulfonamides incorporating piperidinyl-hydrazidoureido and piperidinyl-hydrazidothioureido moieties and their carbonic anhydrase I, II, IX and XII inhibitory activity.

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Figure **S1**: Compounds **5o** and **6j** best docking pose in CA I, CA II, CA IX and CA XII.

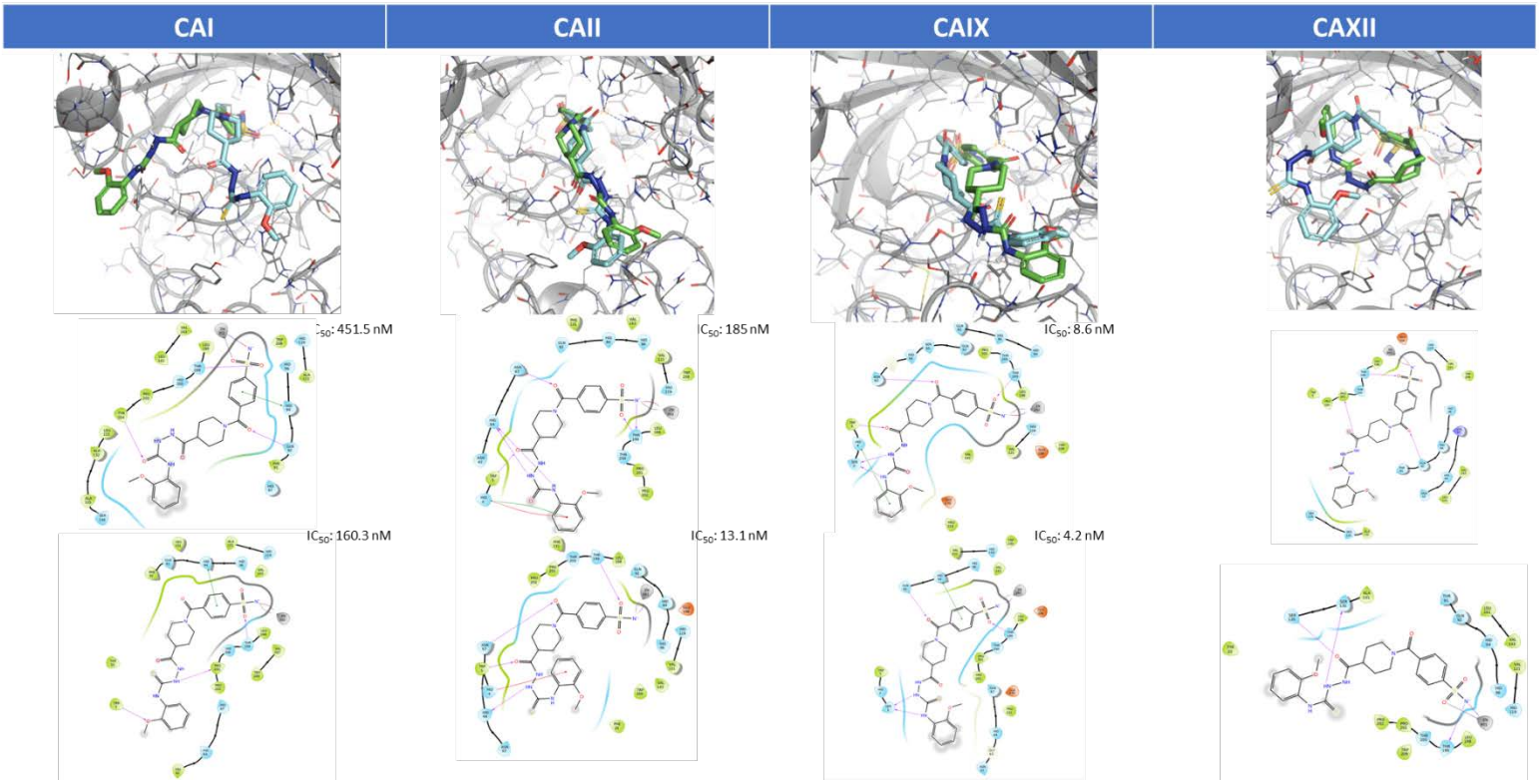


Figure **S2**: Compounds **5m** and **6u** best docking pose in CA I, CA II, CA IX and CA XII

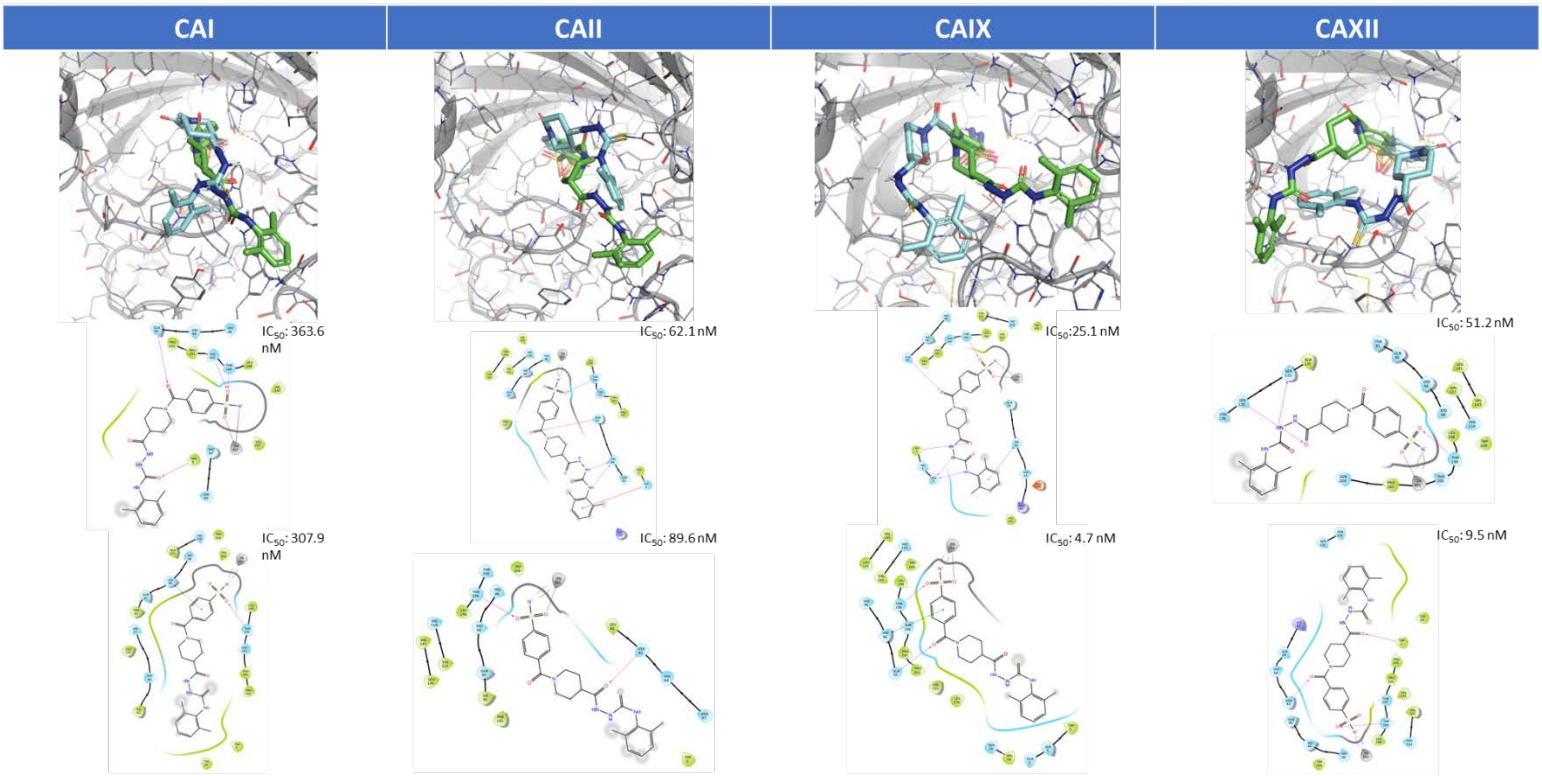


Figure **S3**: Compounds **5q** and **6l** best docking pose in CA I, CA II, CA IX and CA XII

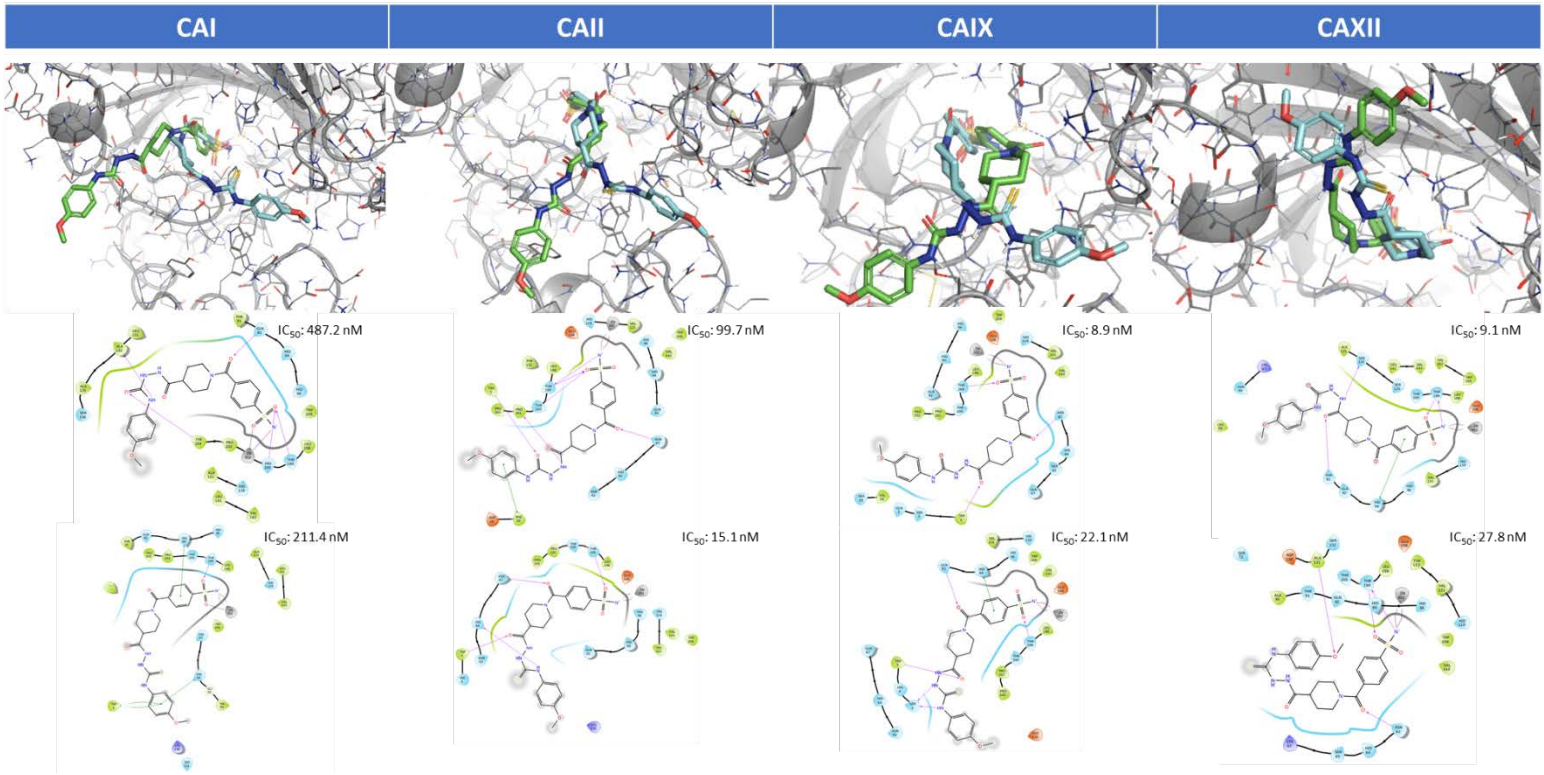
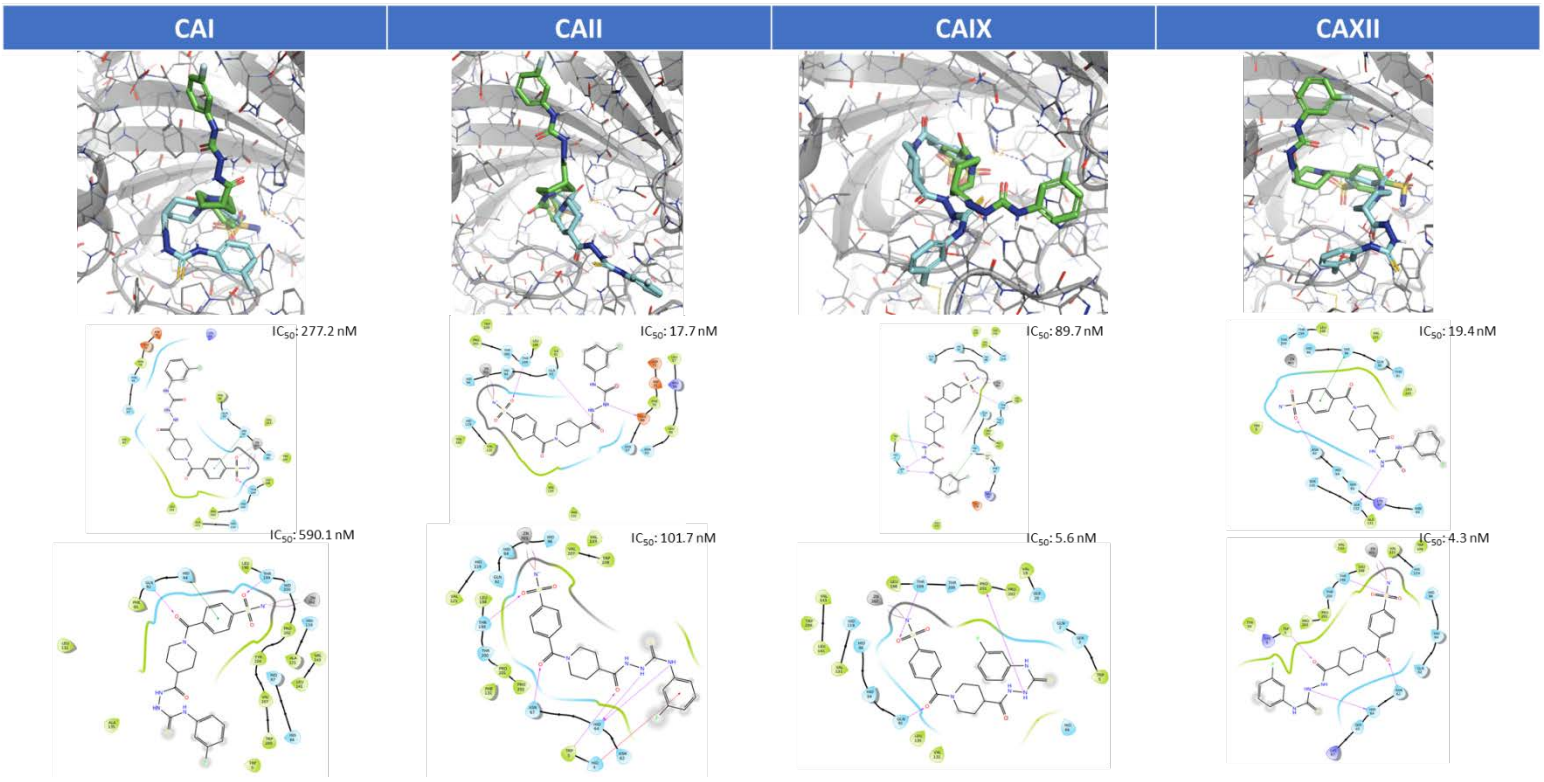
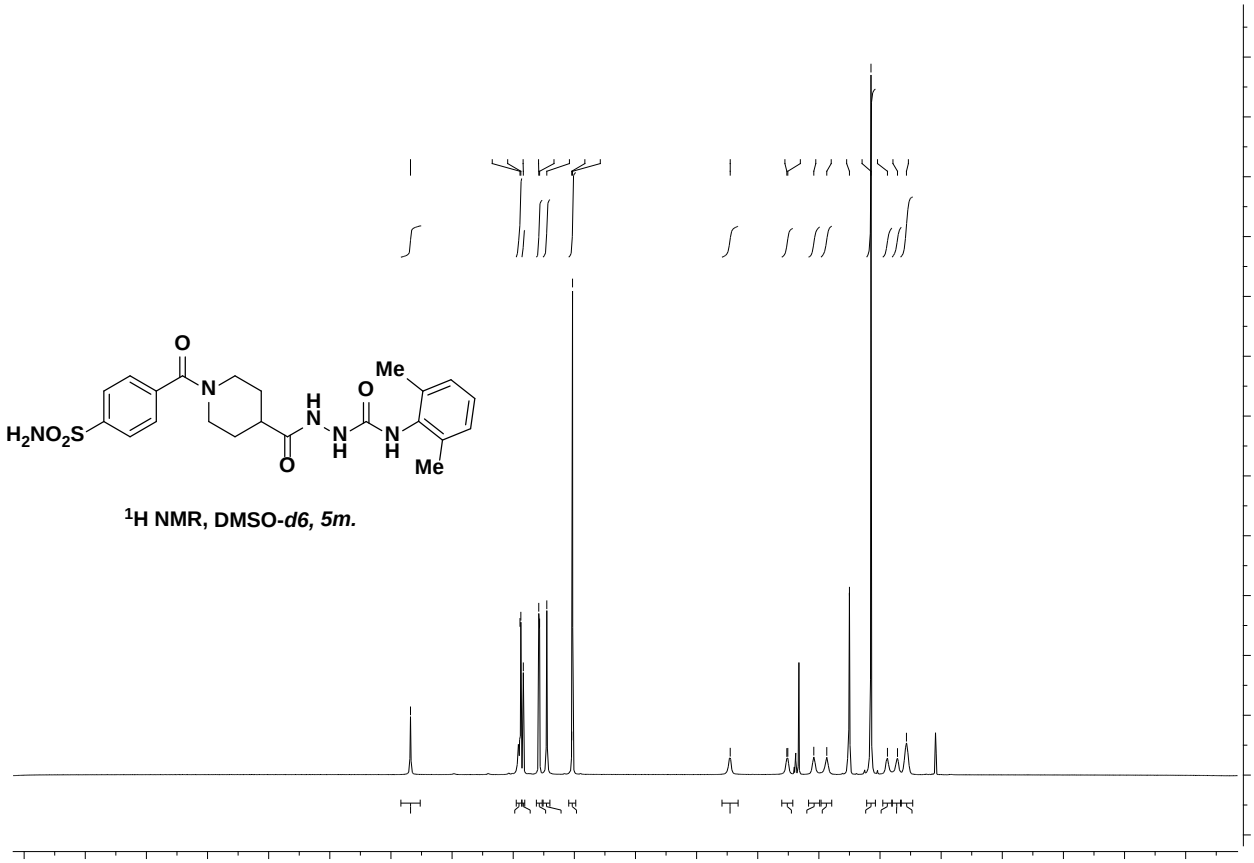


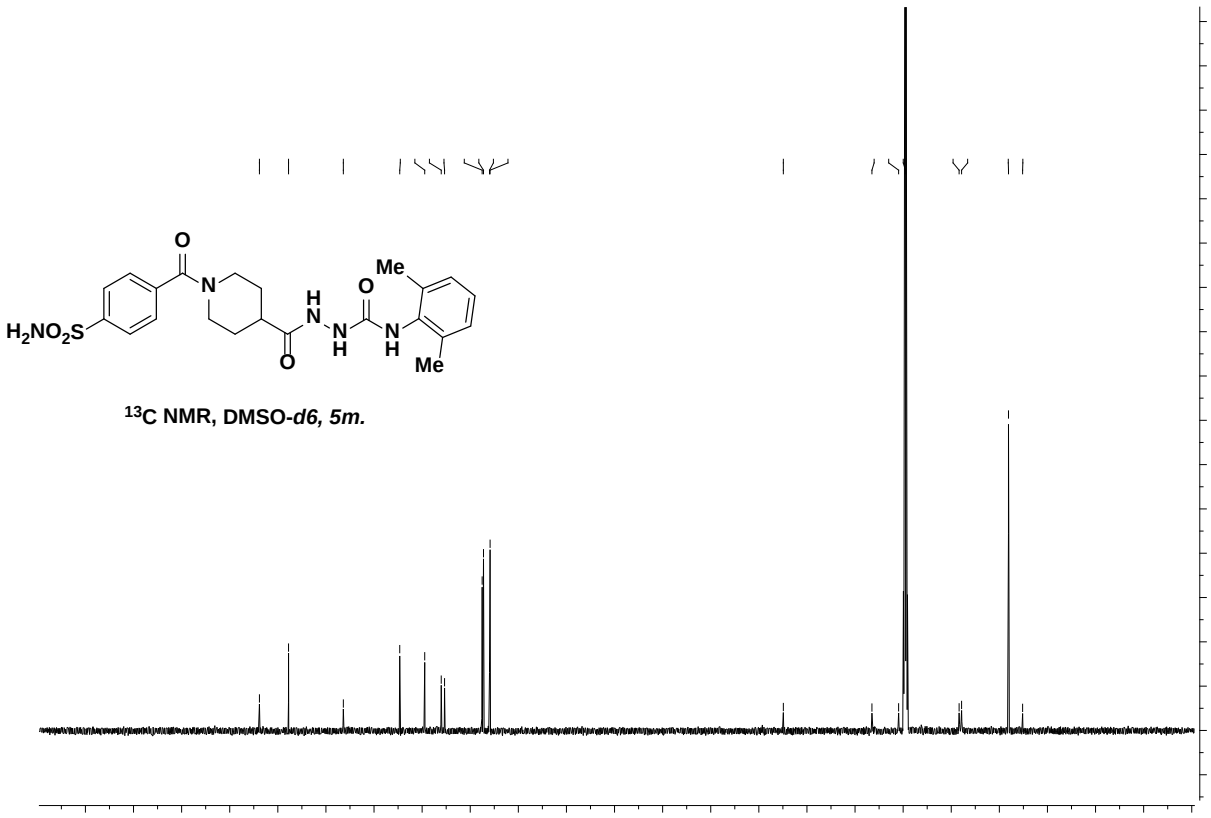
Figure **S4**: Compounds **5g** and **6o** best docking pose in CA I, CA II, CA IX and CA XII



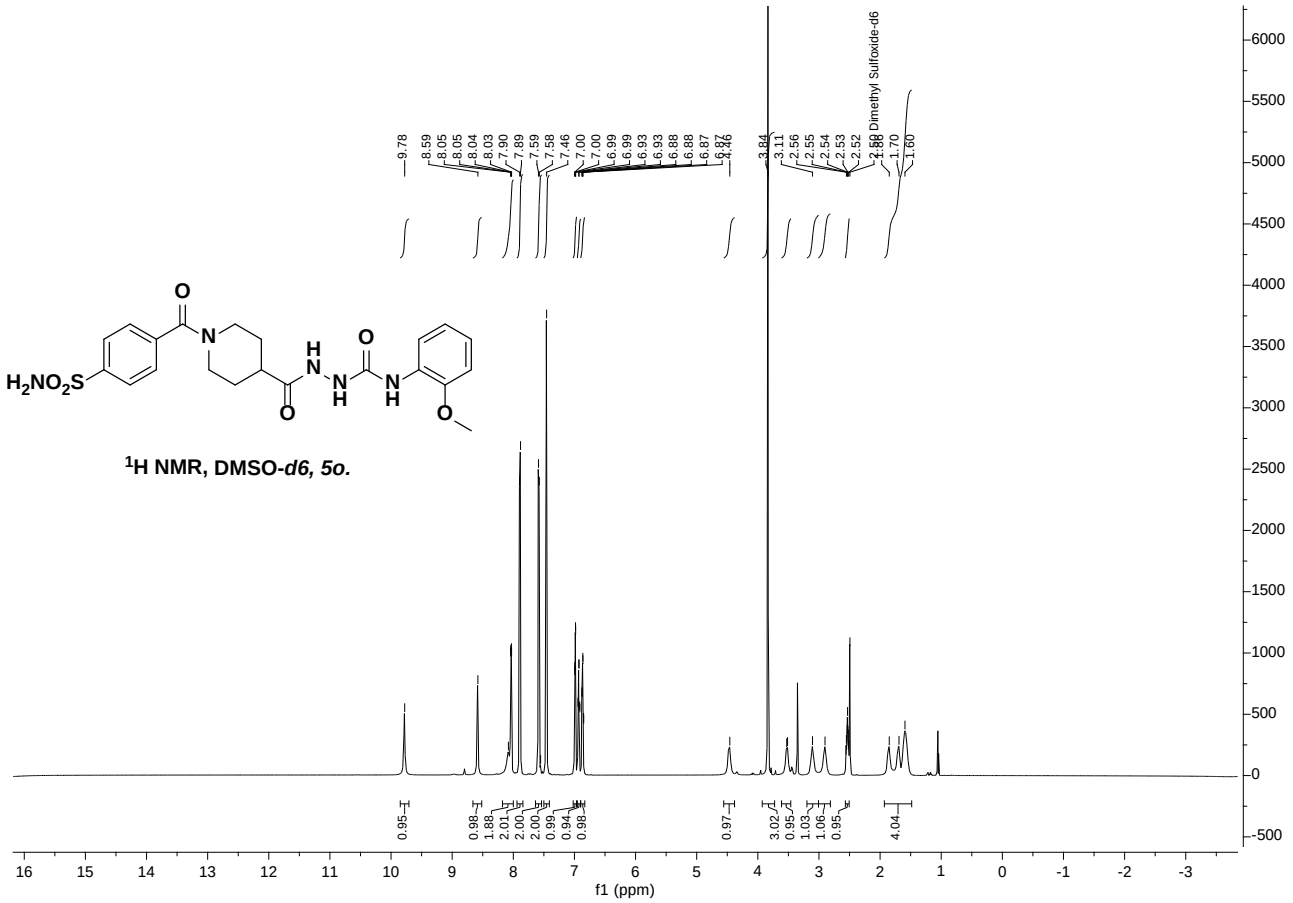
^{1}H, ^{13}C NMR Spectra for 5m, 5o, 6j, 6u



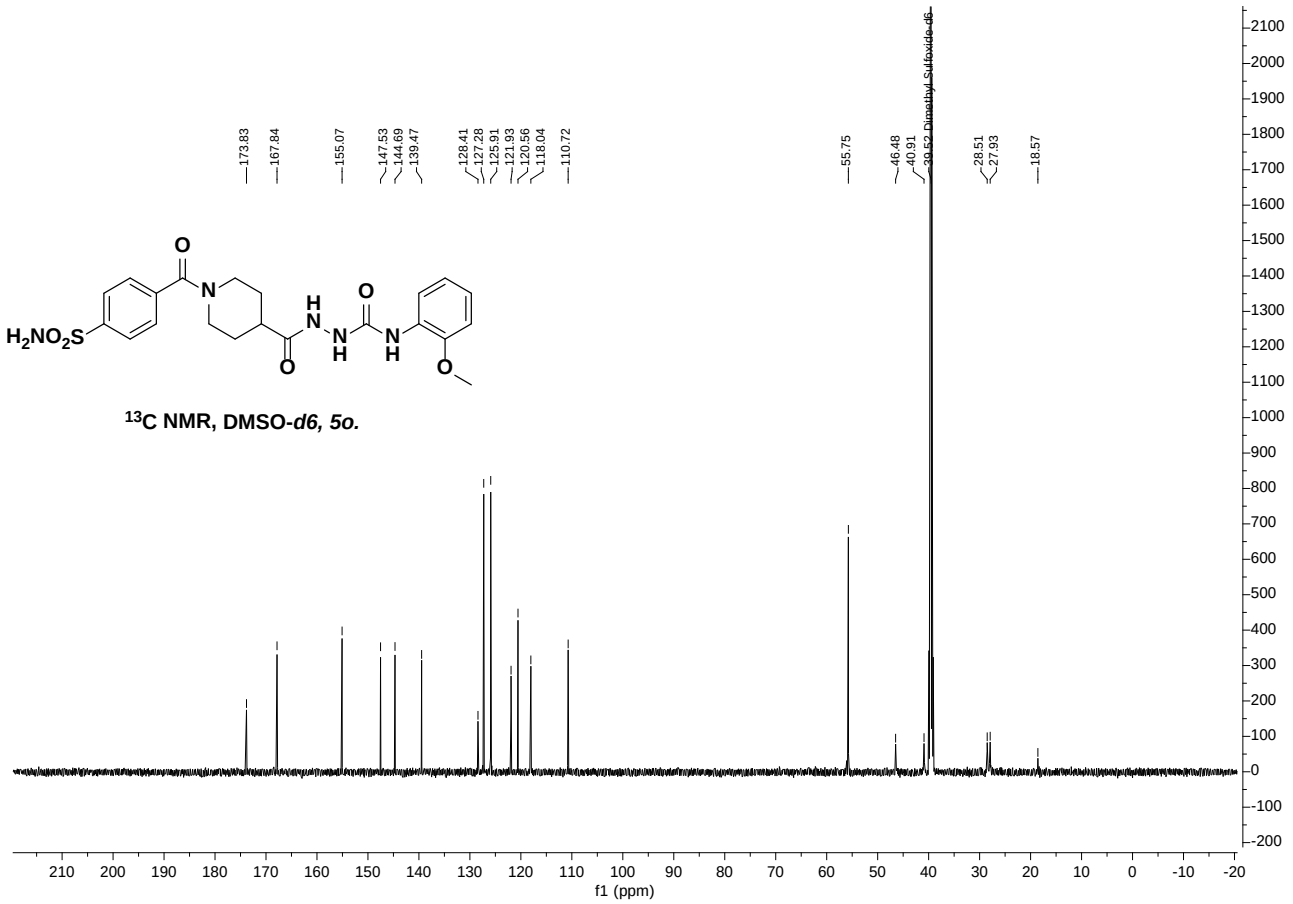
^{1}H NMR, DMSO-*d6*, *5m*.



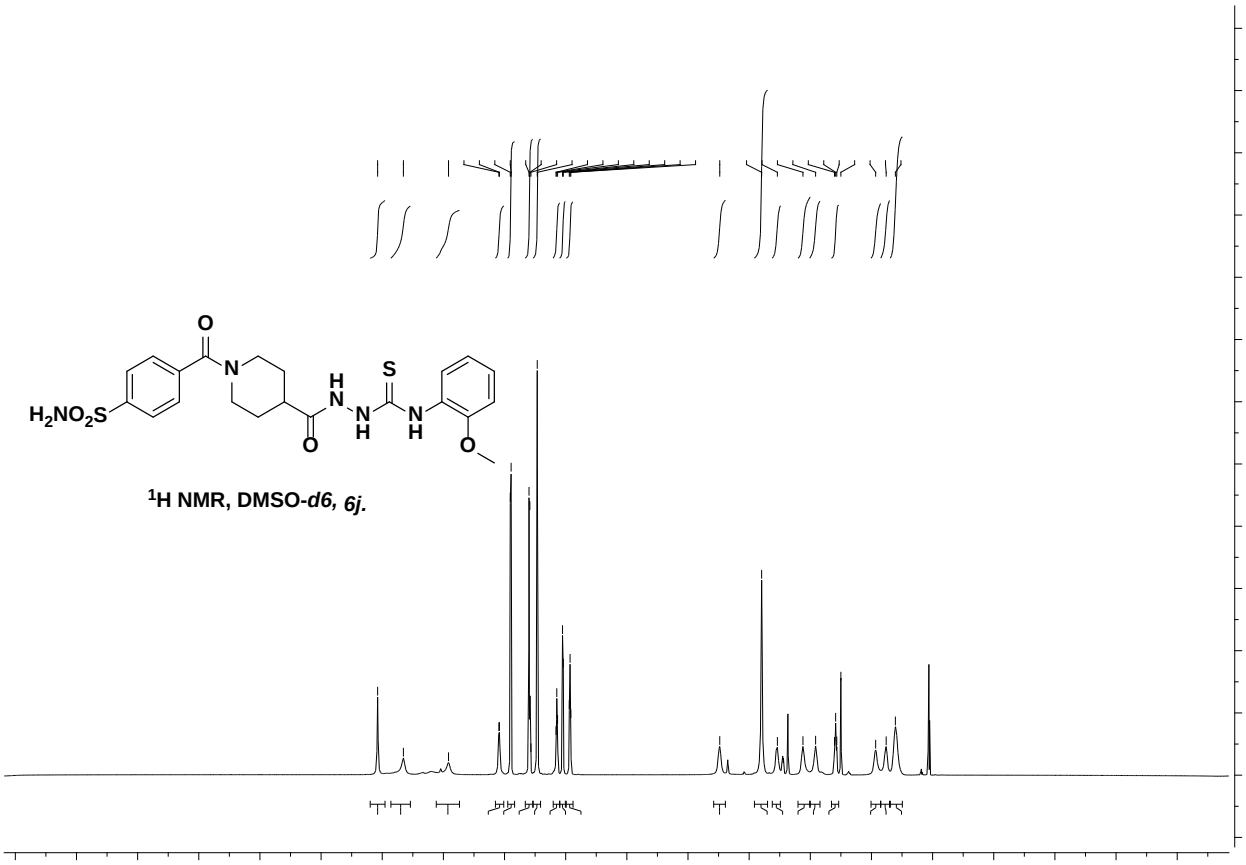
^{13}C NMR, DMSO-*d6*, *5m*.



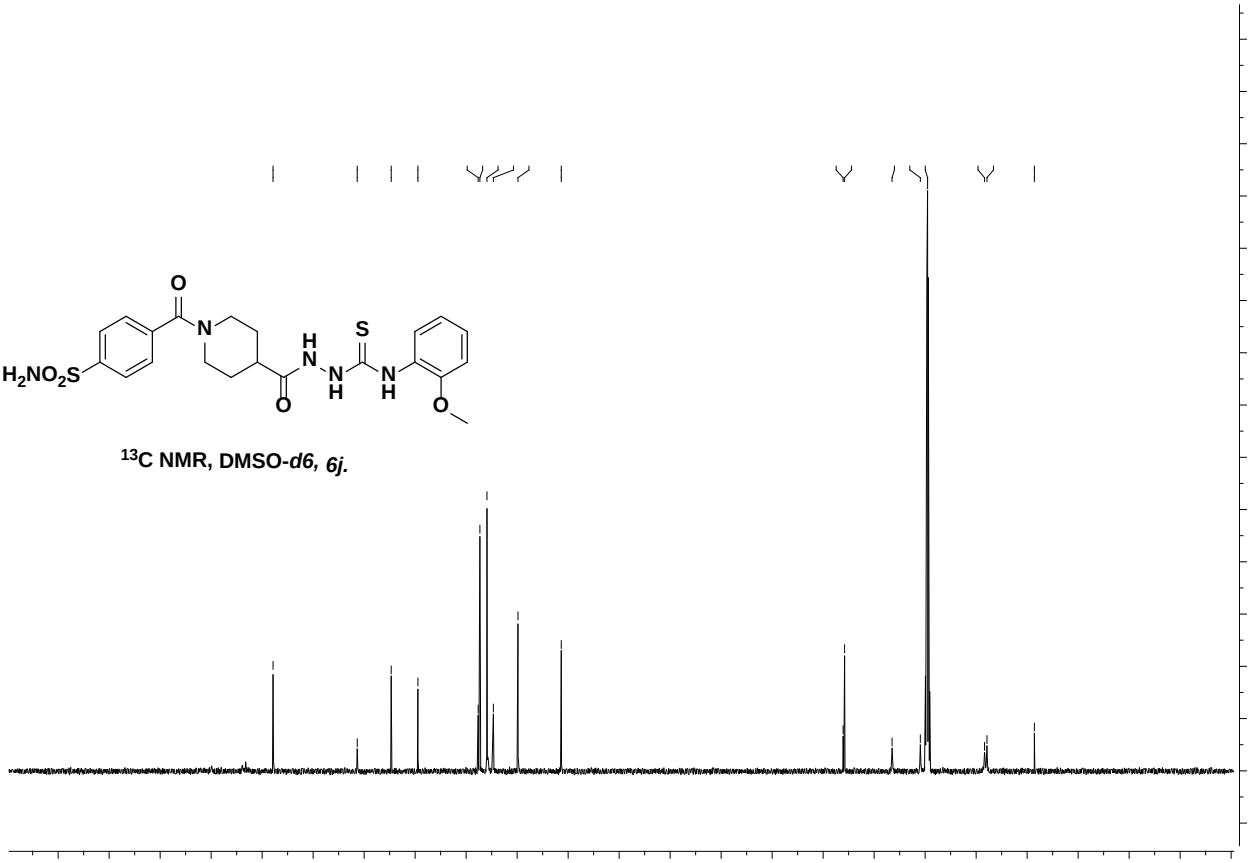
^{1}H NMR, DMSO-*d6, 5o.*



^{13}C NMR, DMSO-*d6, 5o.*



^{1}H NMR, DMSO-*d6, 6j.*



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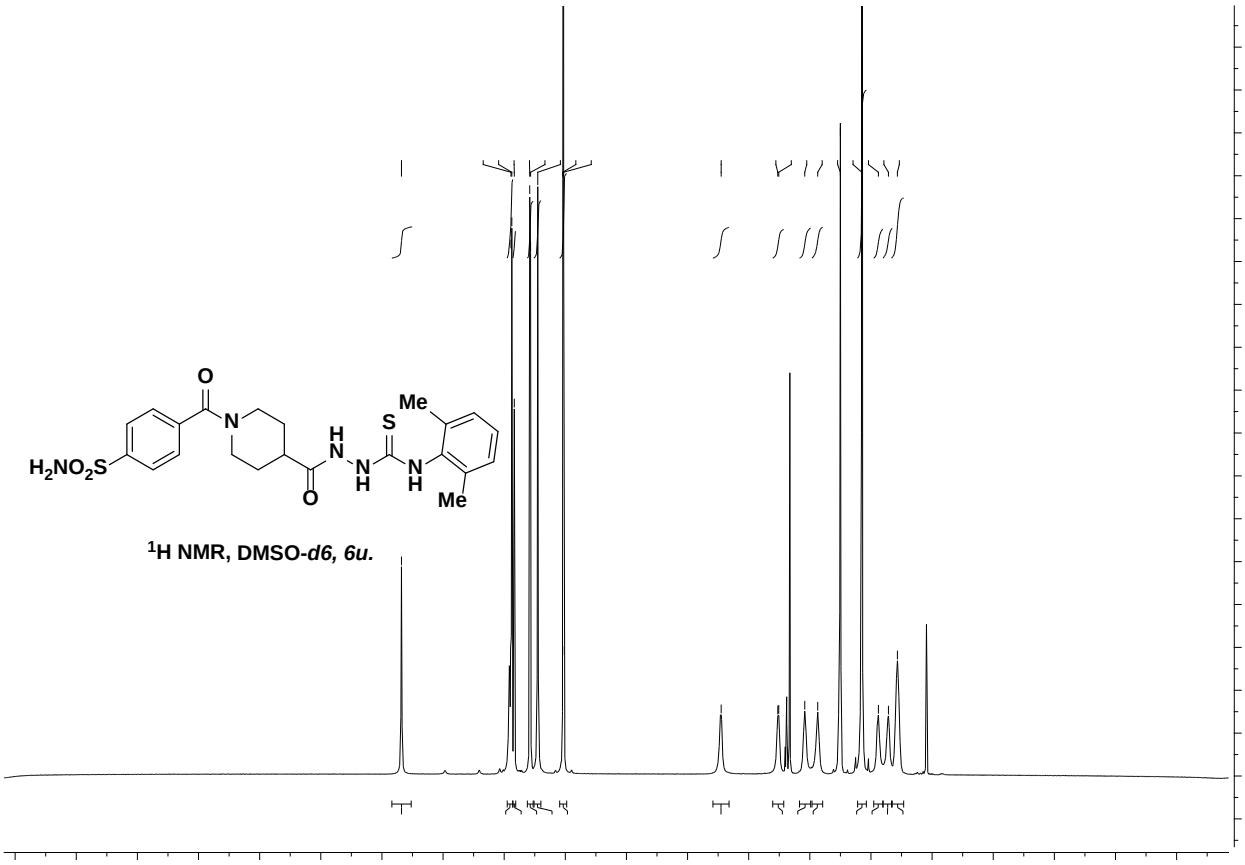
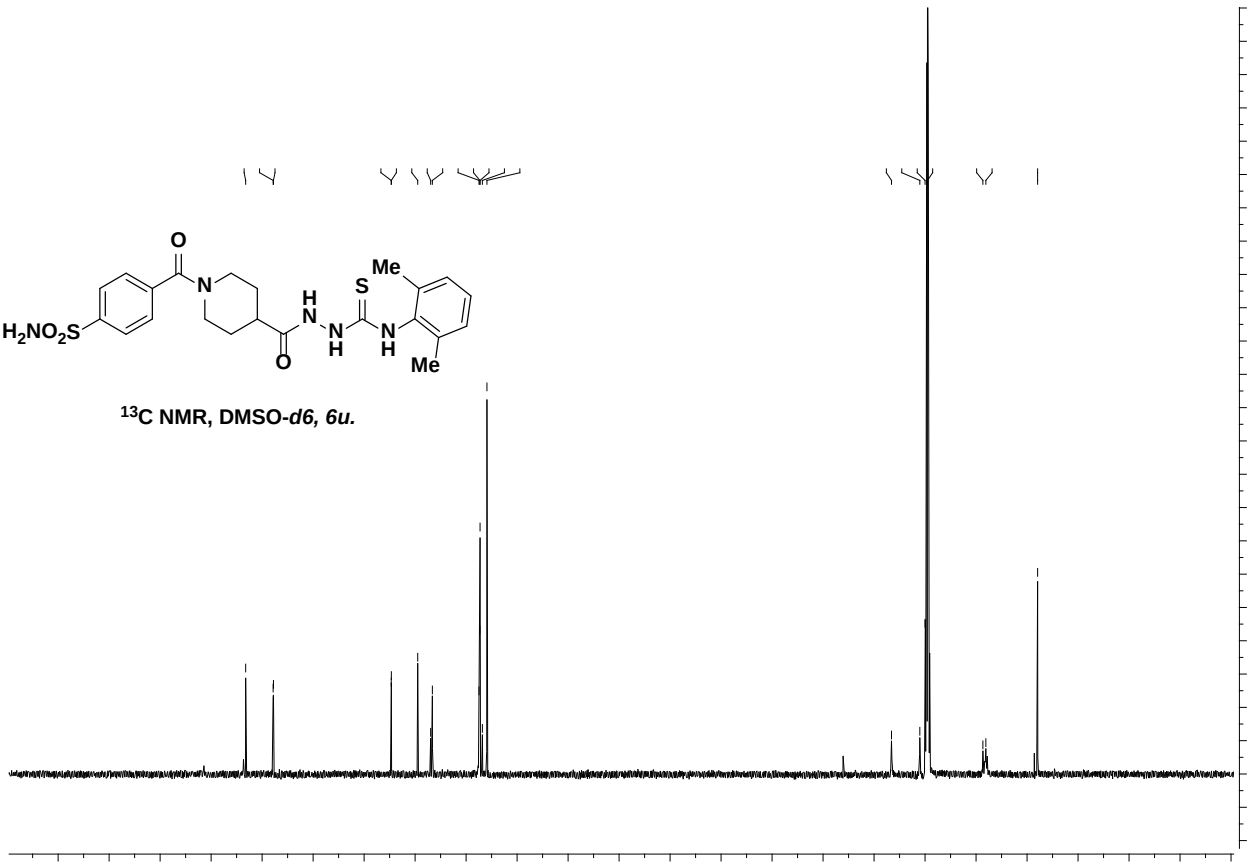
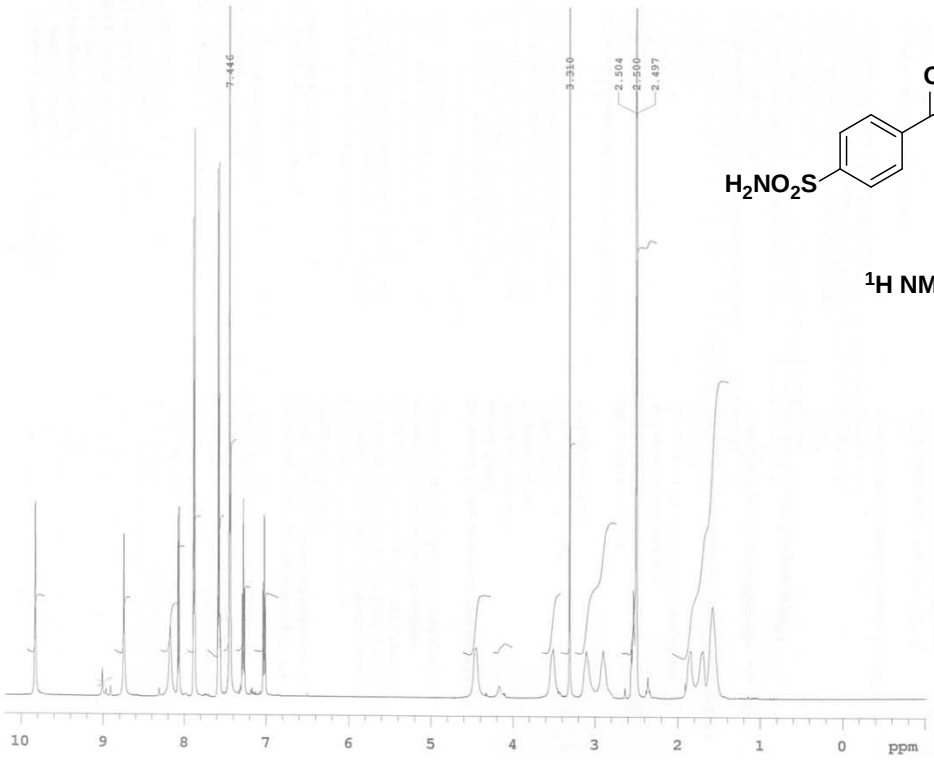
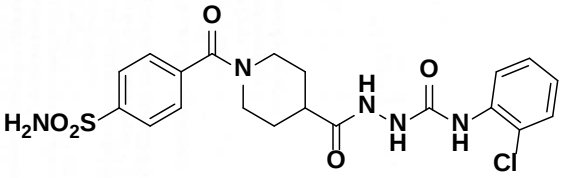


^{1}H NMR, DMSO-*d6, 6u.*

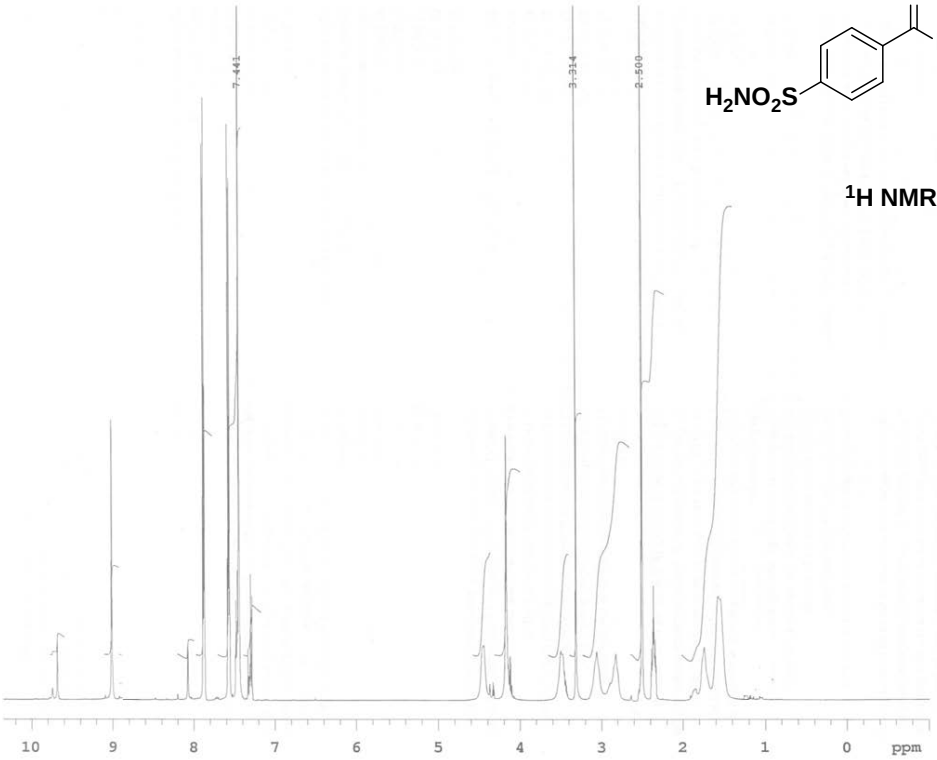


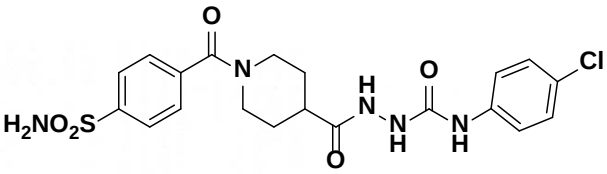
^{13}C NMR, DMSO-*d6, 6u.*



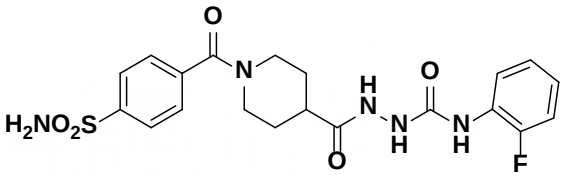


^{1}H NMR, DMSO-*d6, 5b.*

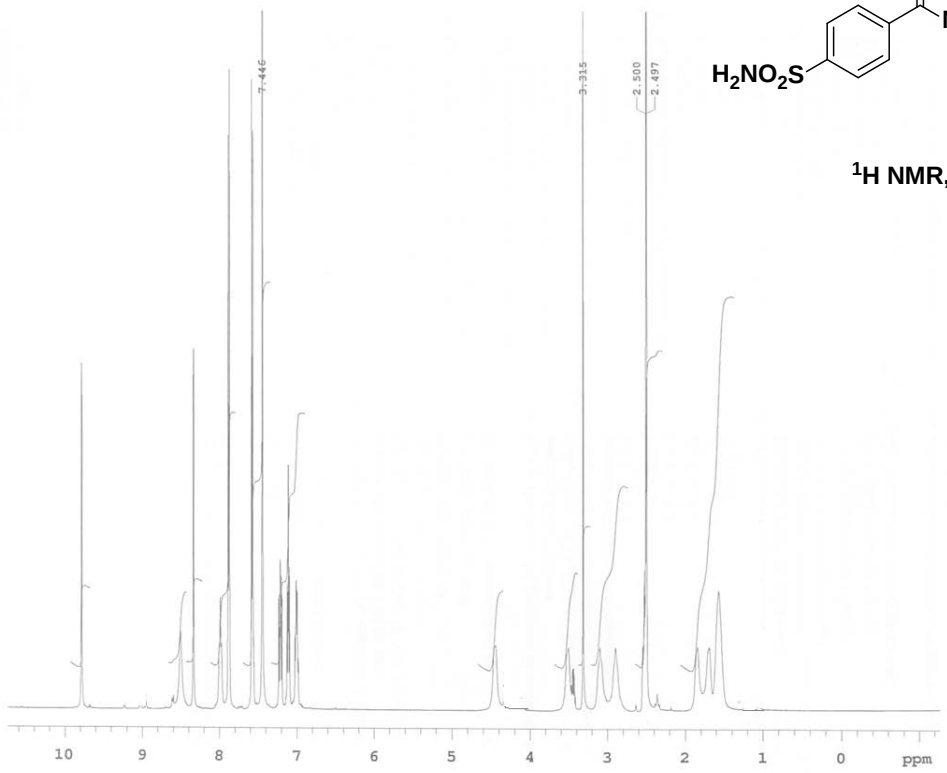


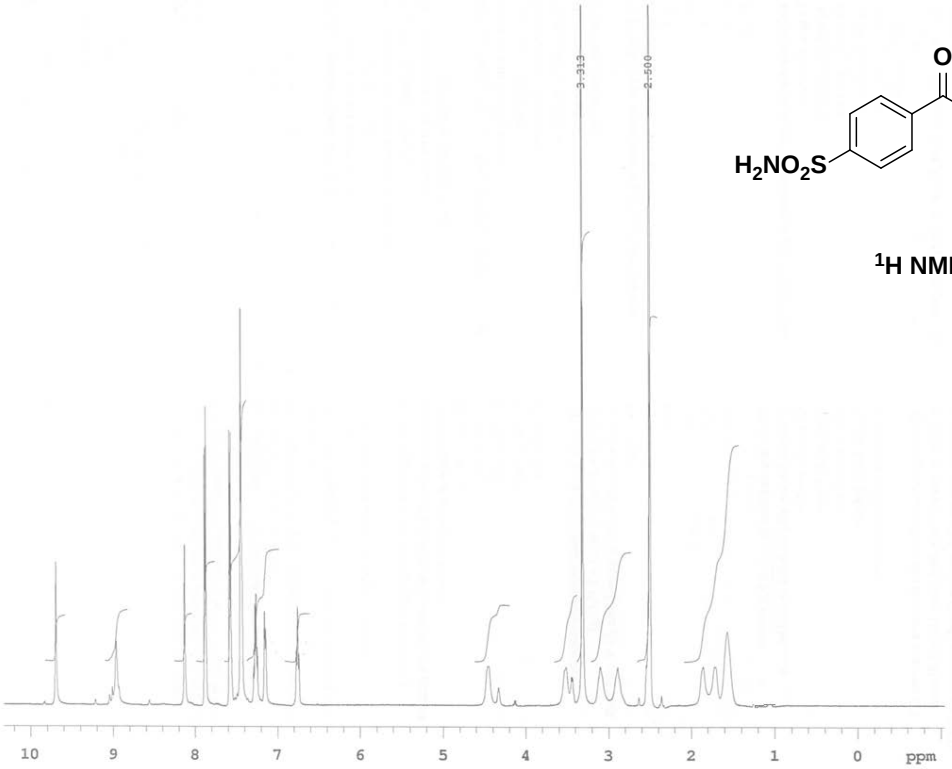


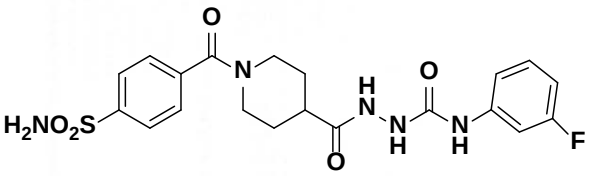
^{1}H NMR, DMSO-*d6, 5d.*



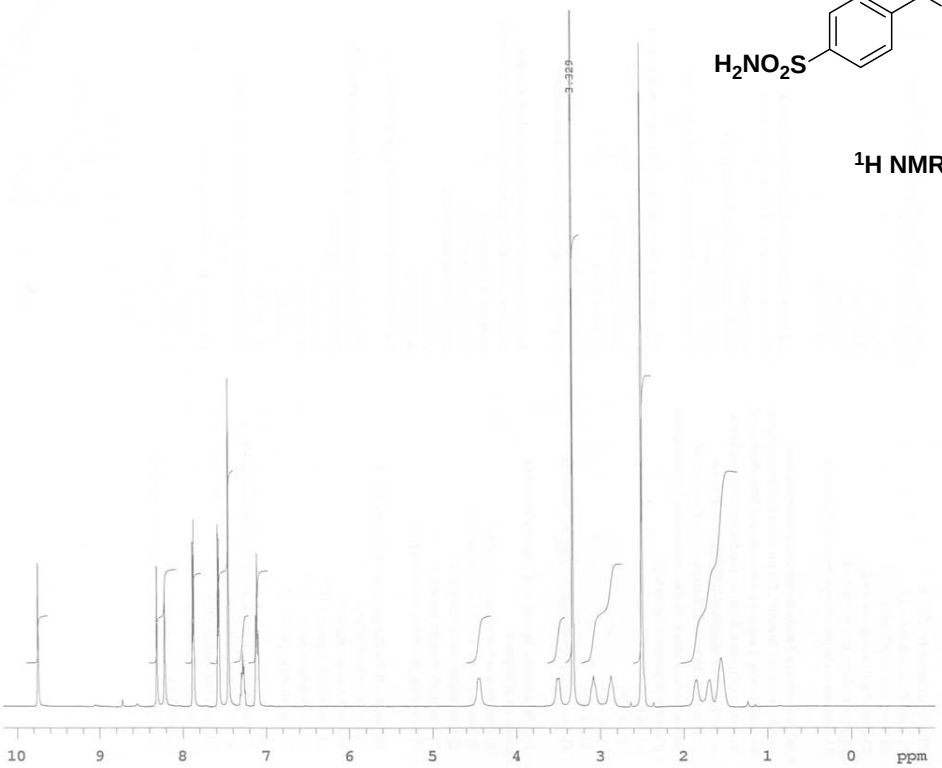
^{1}H NMR, DMSO-*d6, 5f.*

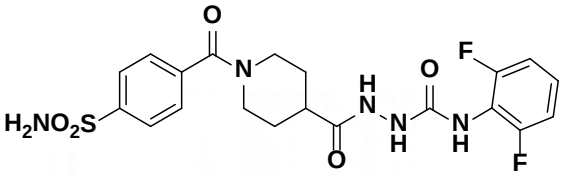




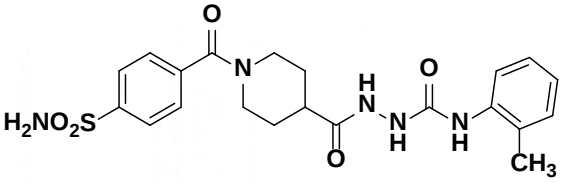


^{1}H NMR, DMSO-*d6, 5g*

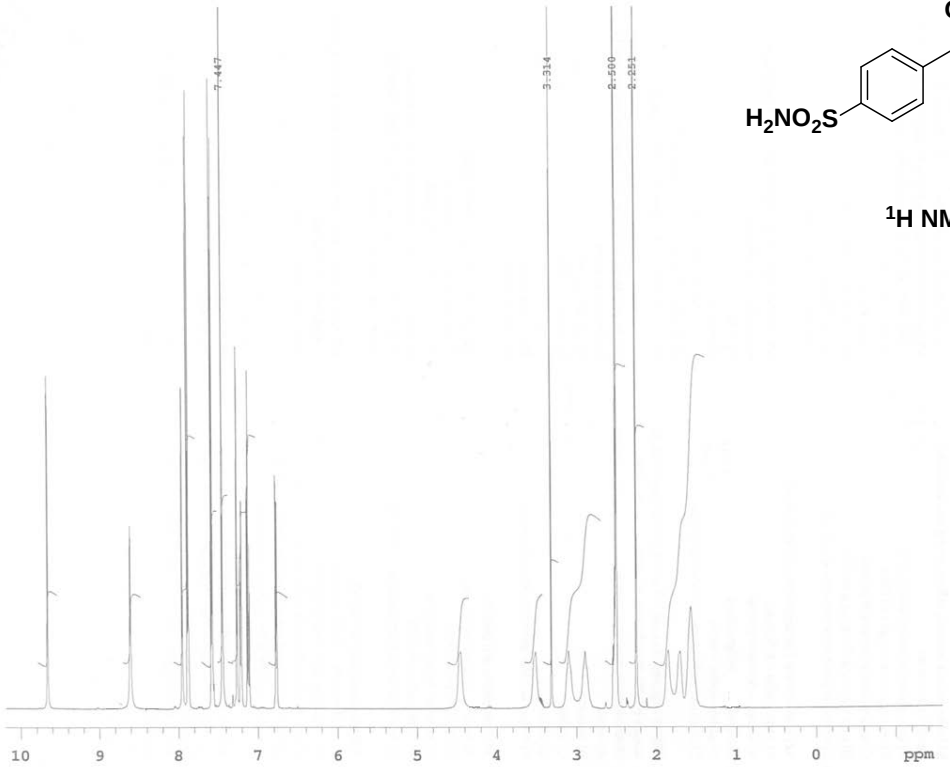


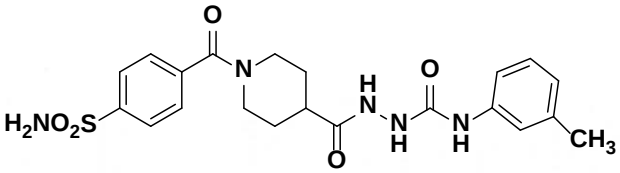


^{1}H NMR, DMSO-*d6, 5i*

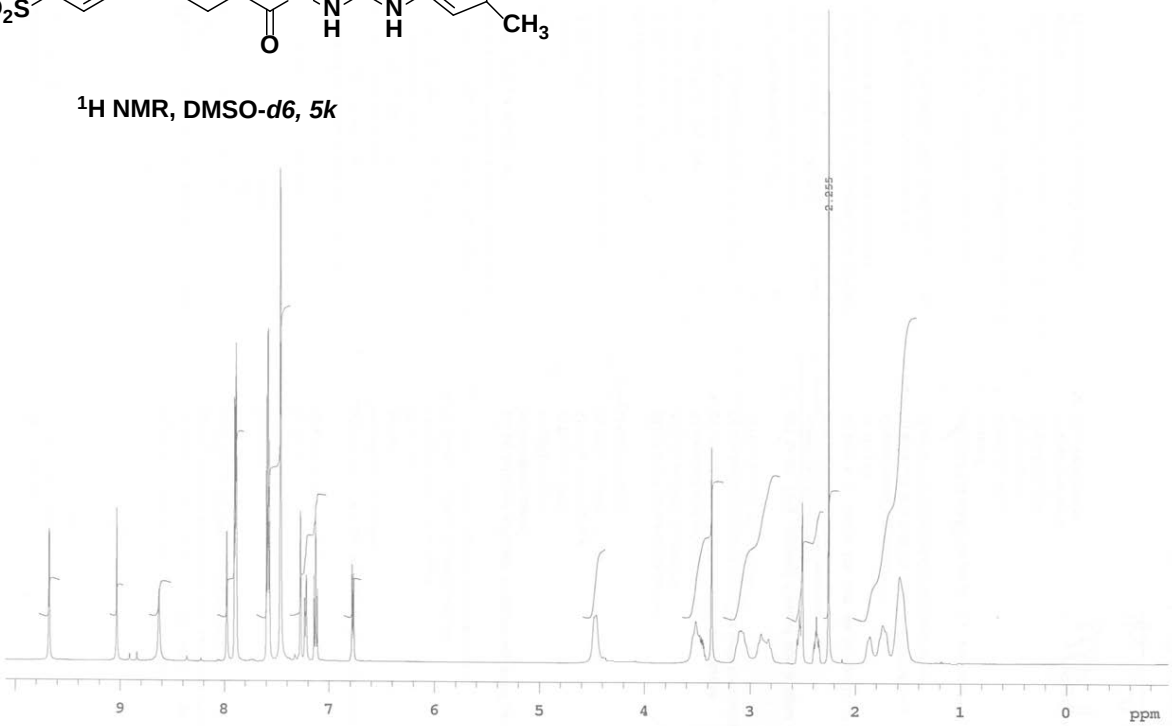


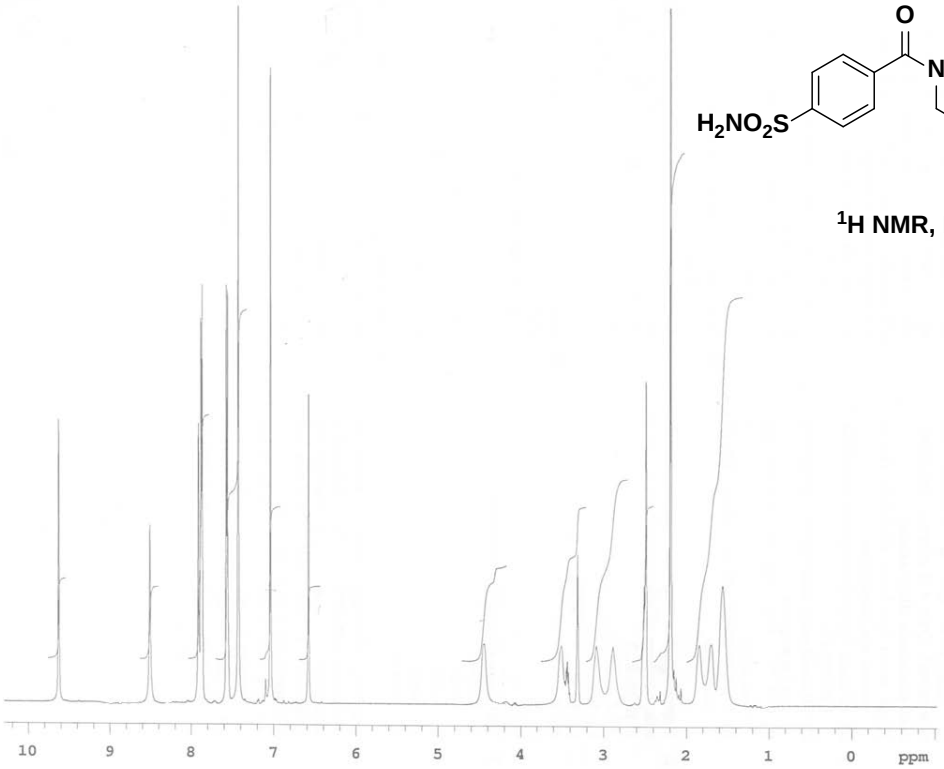
^{1}H NMR, DMSO-*d6, 5j*

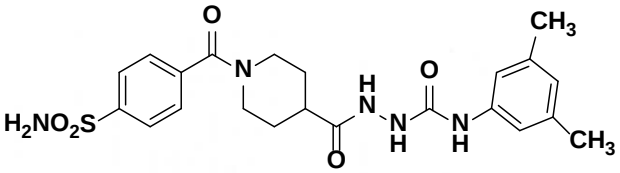




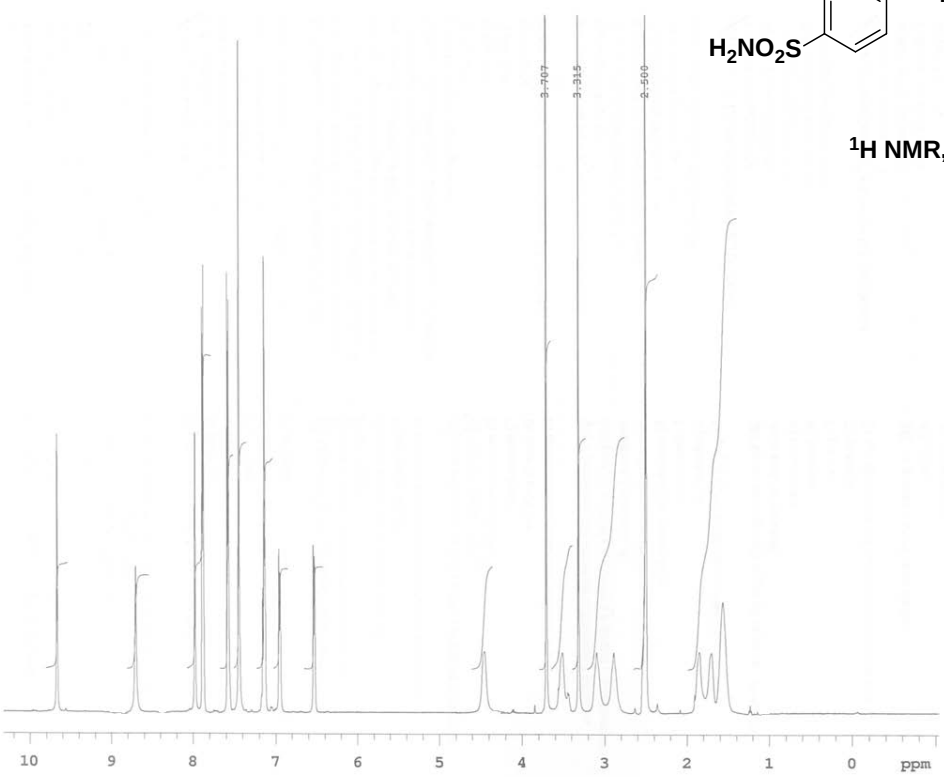
^{1}H NMR, DMSO-*d6, 5k*

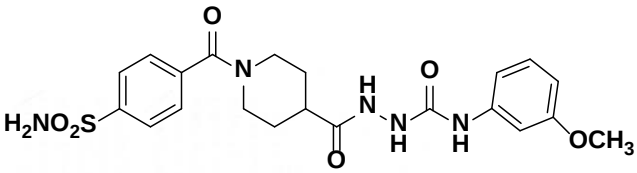




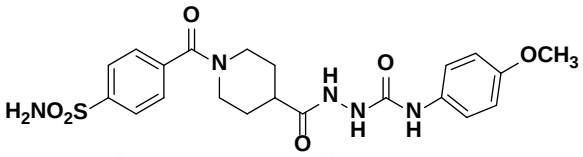


^{1}H NMR, DMSO-*d6, 5n*

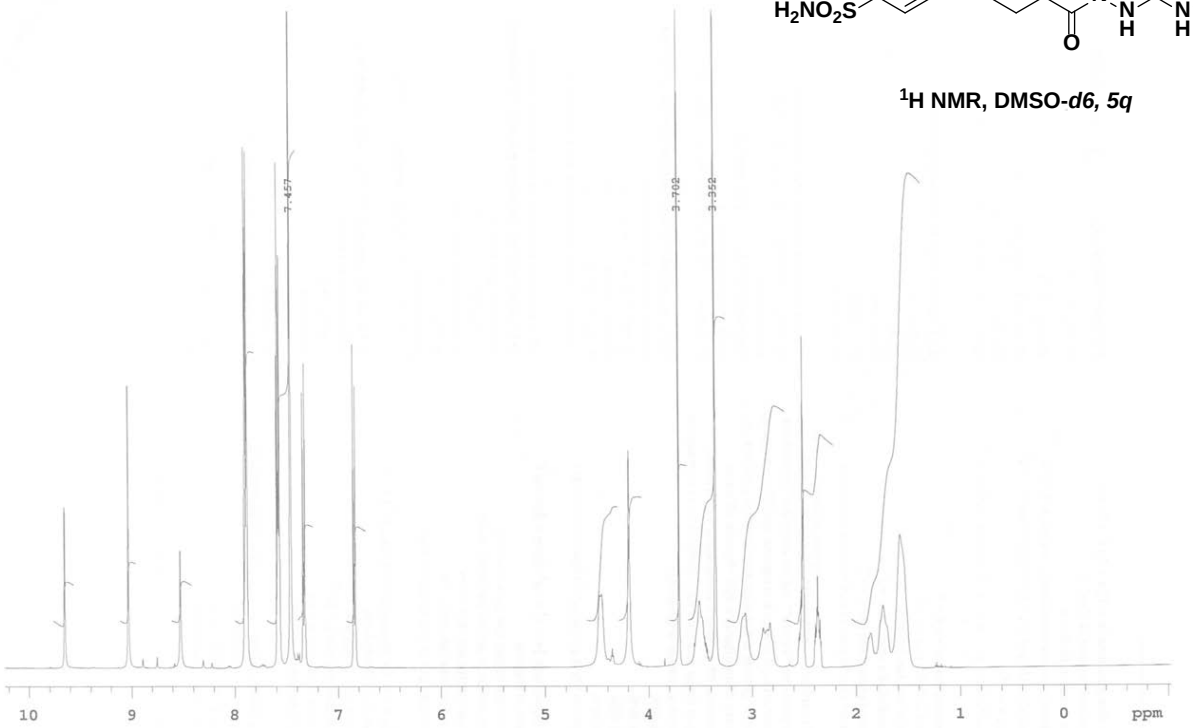


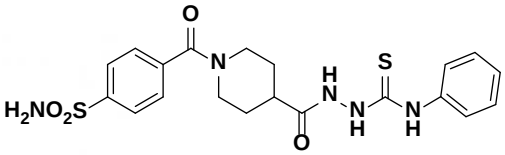


^{1}H NMR, DMSO-*d6, 5p*

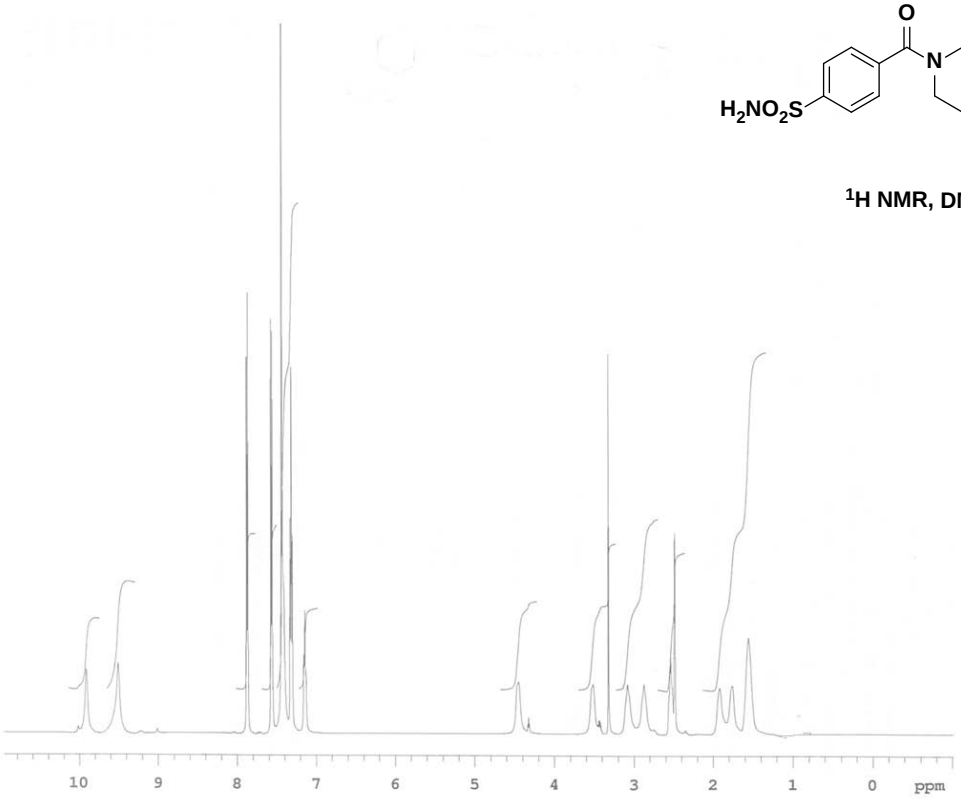


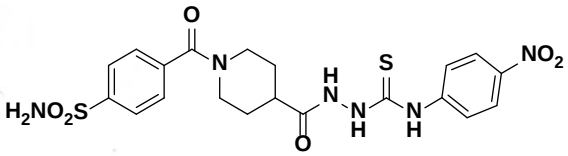
^{1}H NMR, DMSO-*d6, 5q*



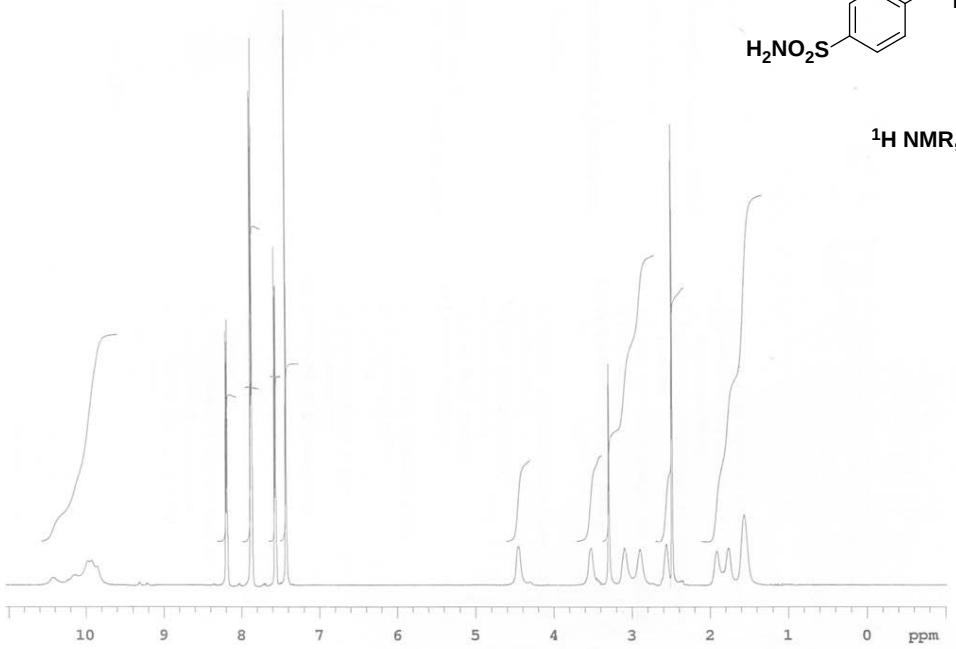


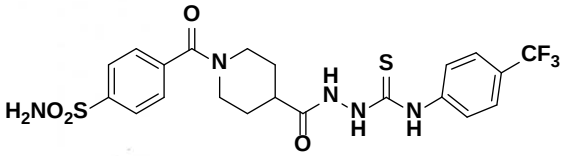
^{1}H NMR, DMSO-*d6, 6a*



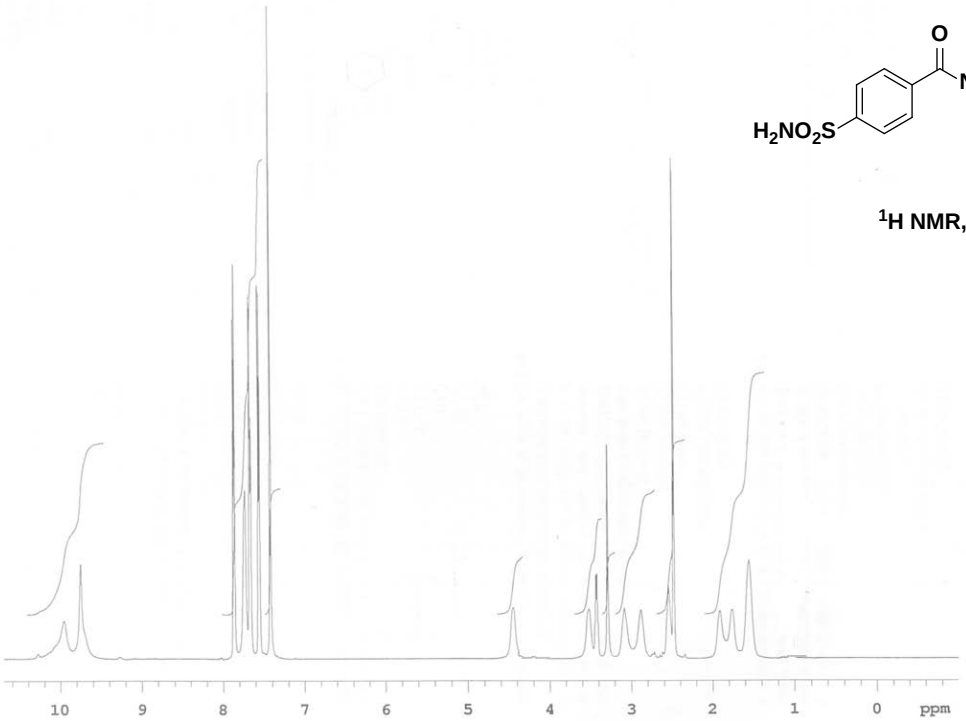


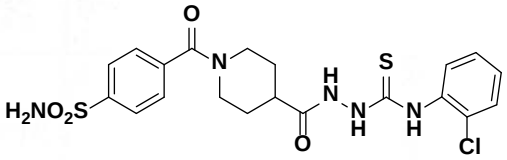
^{1}H NMR, DMSO-*d6, 6b*



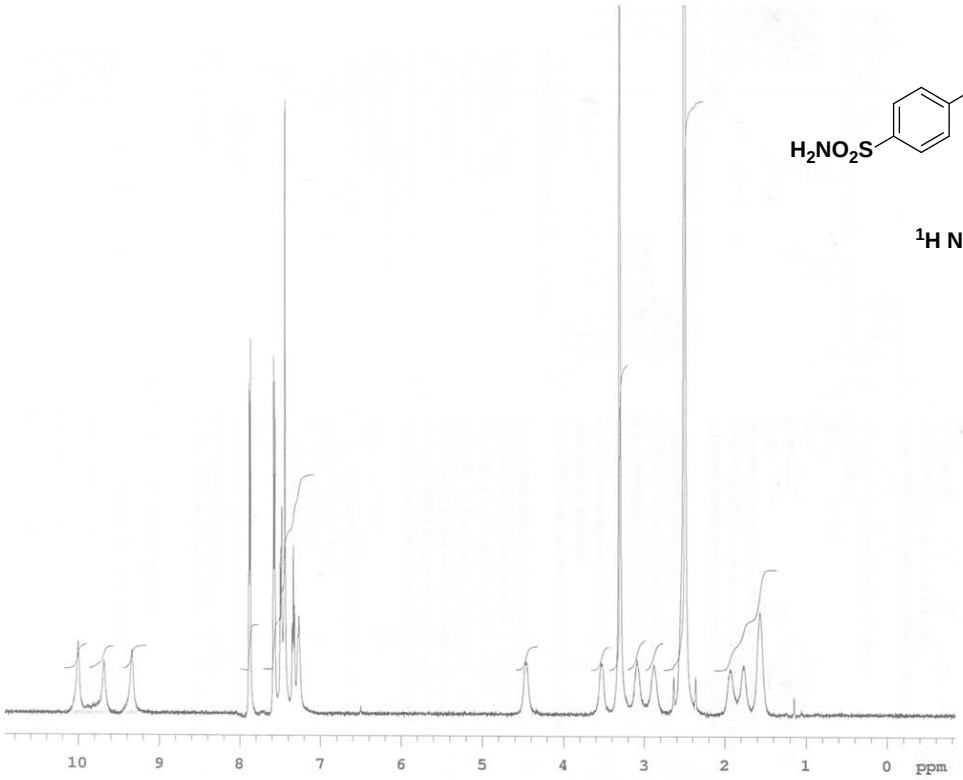


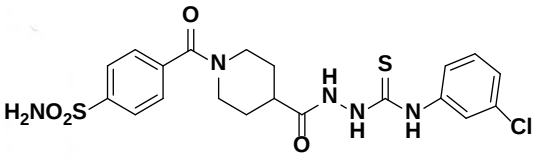
^{1}H NMR, DMSO-*d6, 6c*



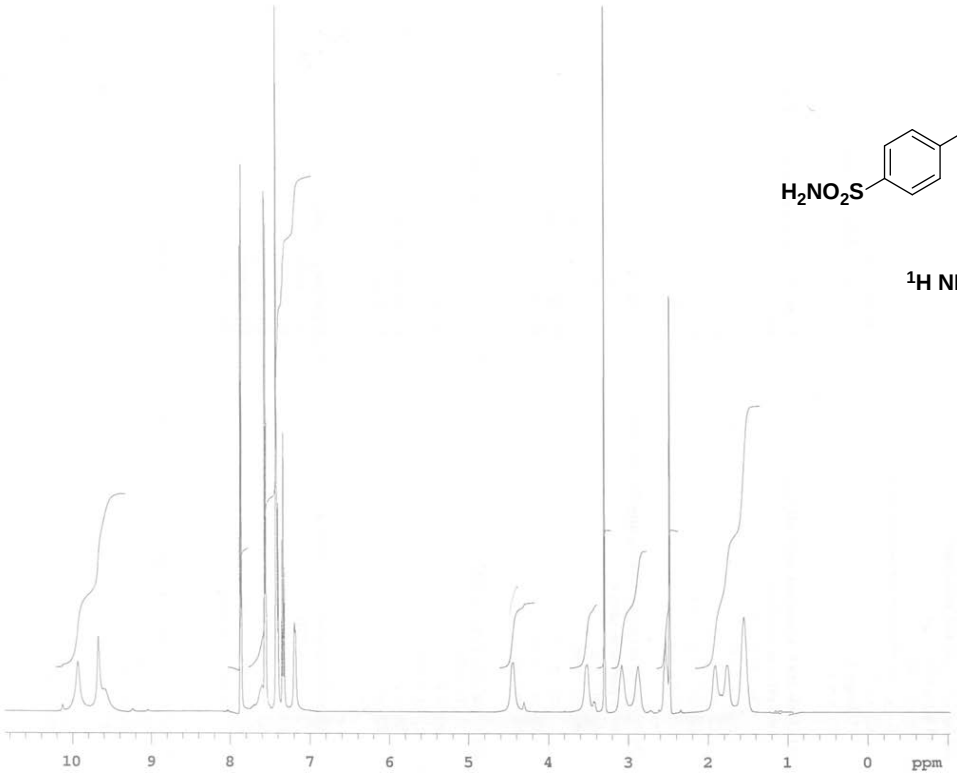


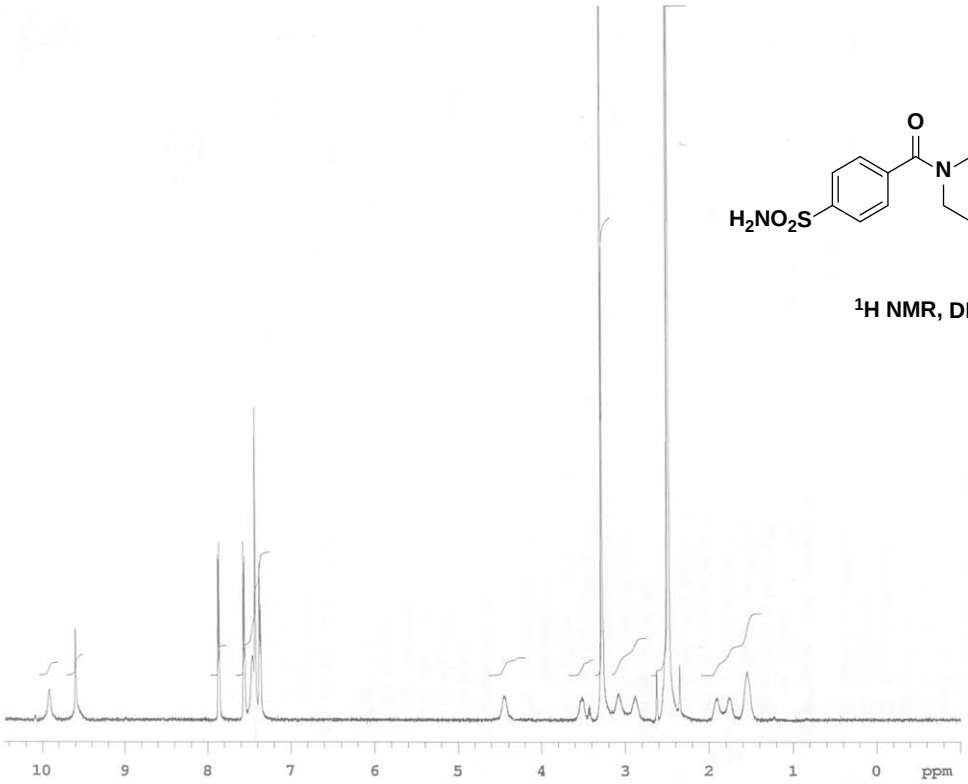
^{1}H NMR, DMSO-*d6, 6d*

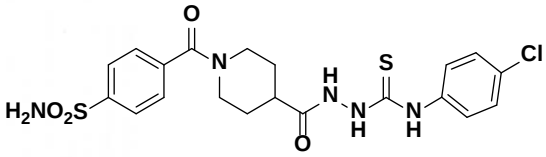




^{1}H NMR, DMSO-*d6, 6e*







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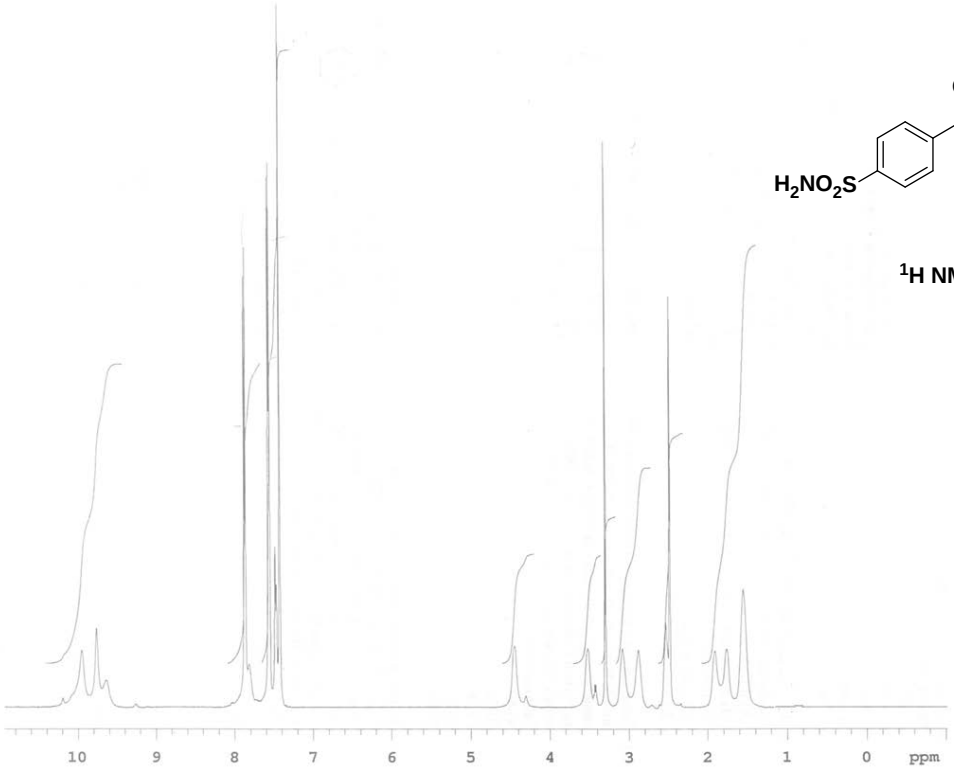
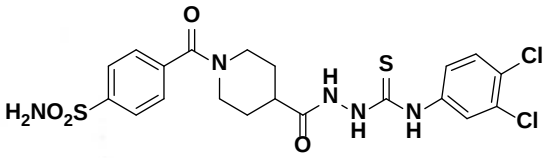
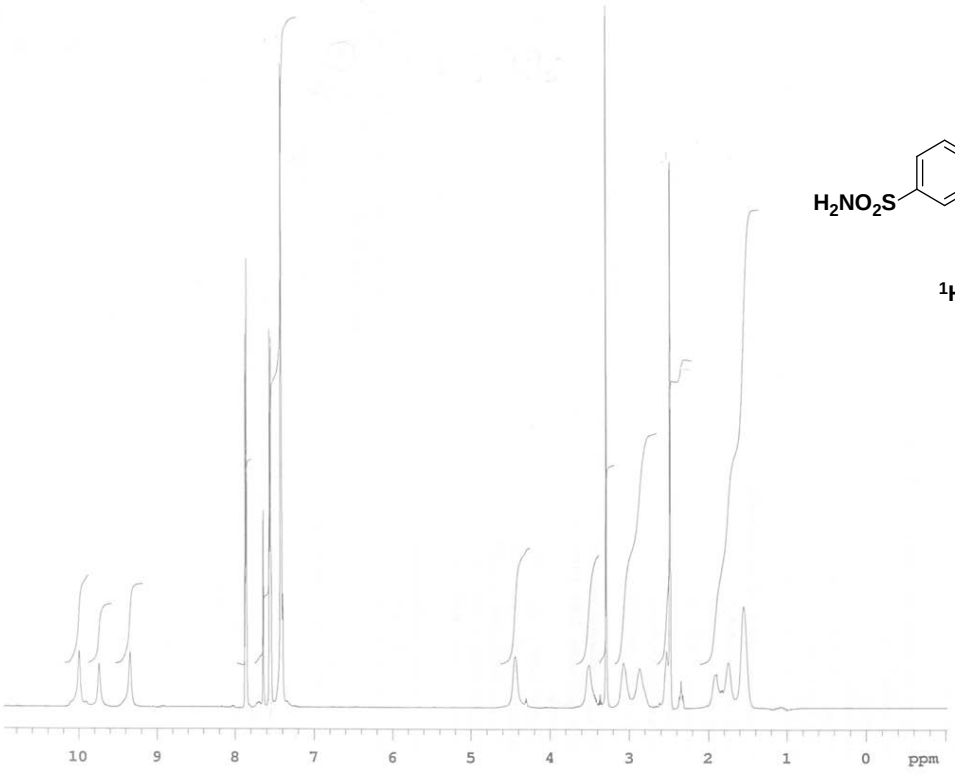
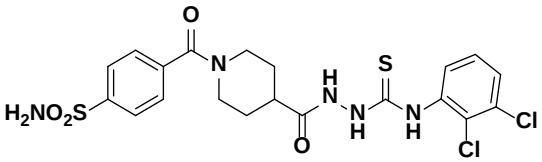


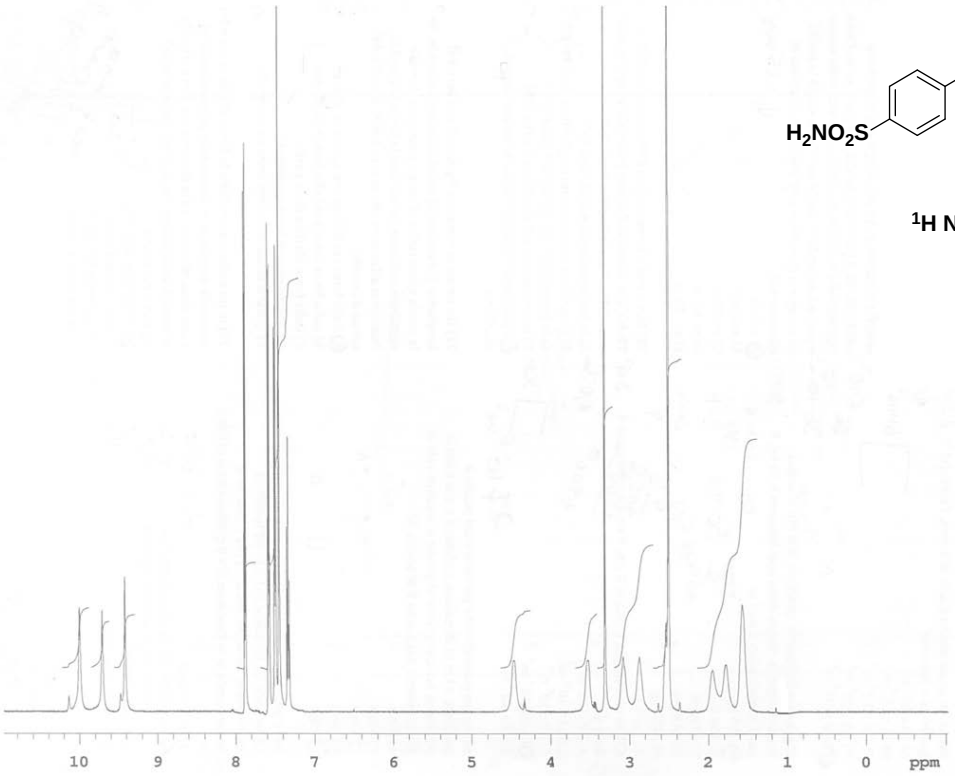


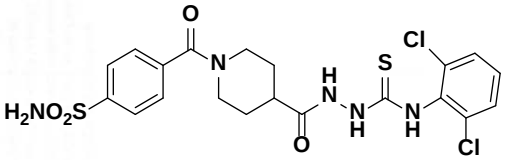
^{1}H NMR, DMSO-*d6, 6g*



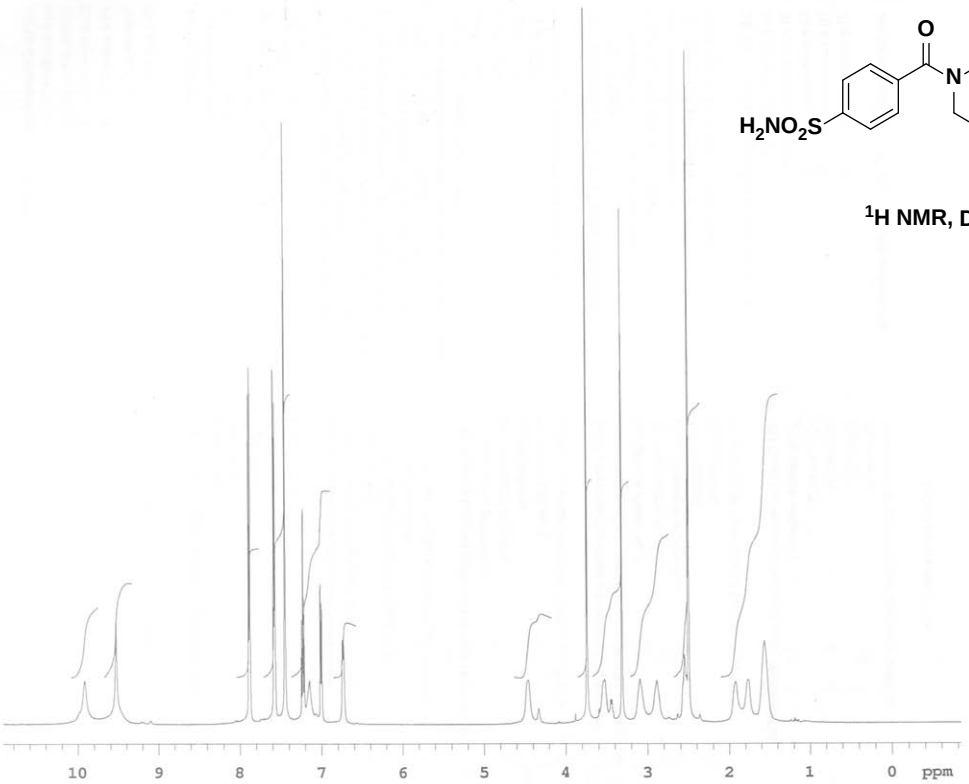


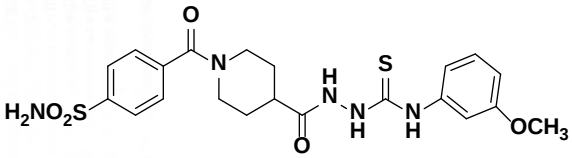
^{1}H NMR, DMSO-*d6, 6h*



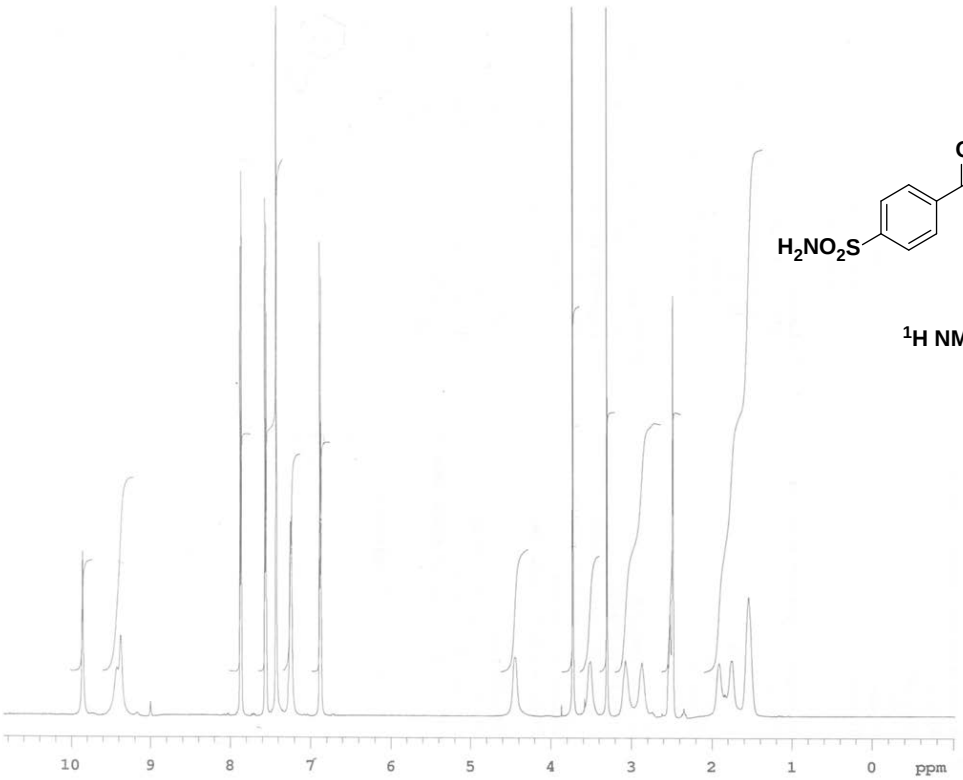


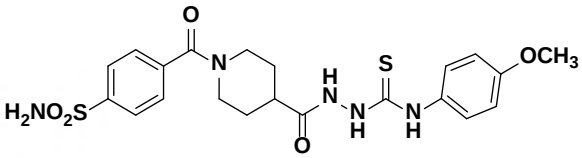
^{1}H NMR, DMSO-*d6, 6i*



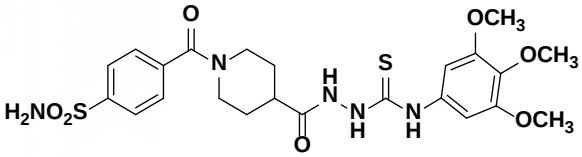


^{1}H NMR, DMSO-*d6, 6k*

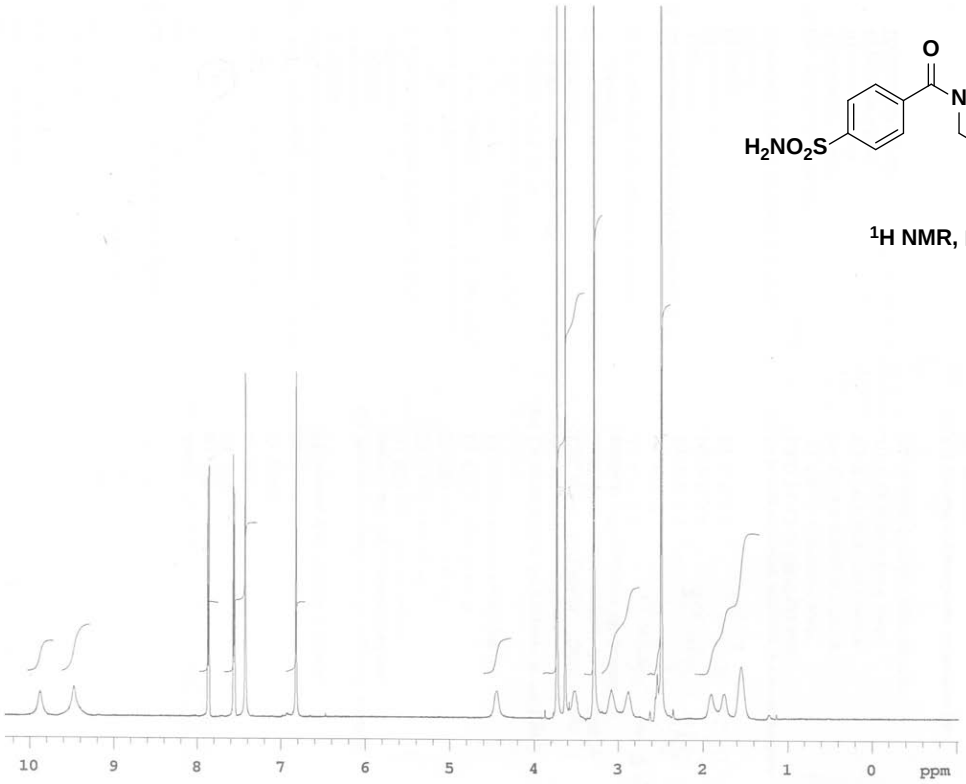


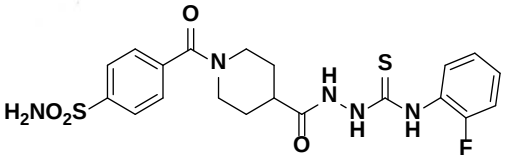


^{1}H NMR, DMSO-*d6, 6l*

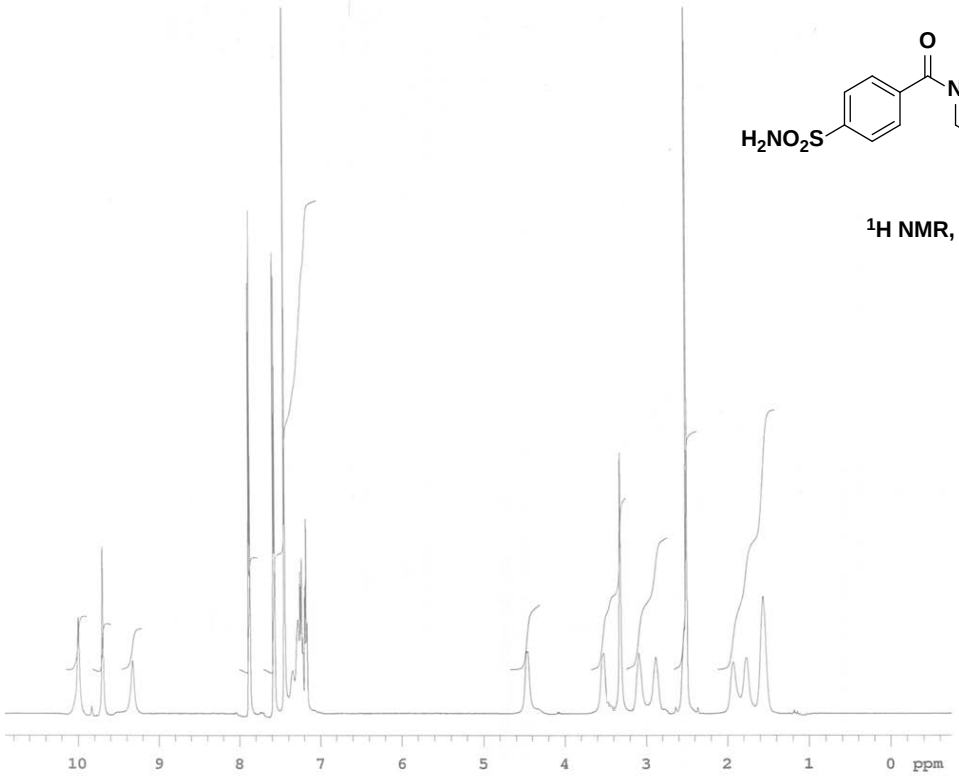


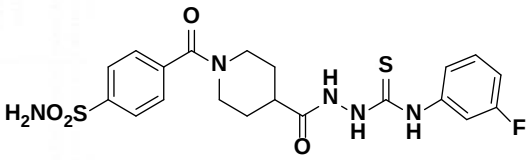
^{1}H NMR, DMSO-*d6, 6m*



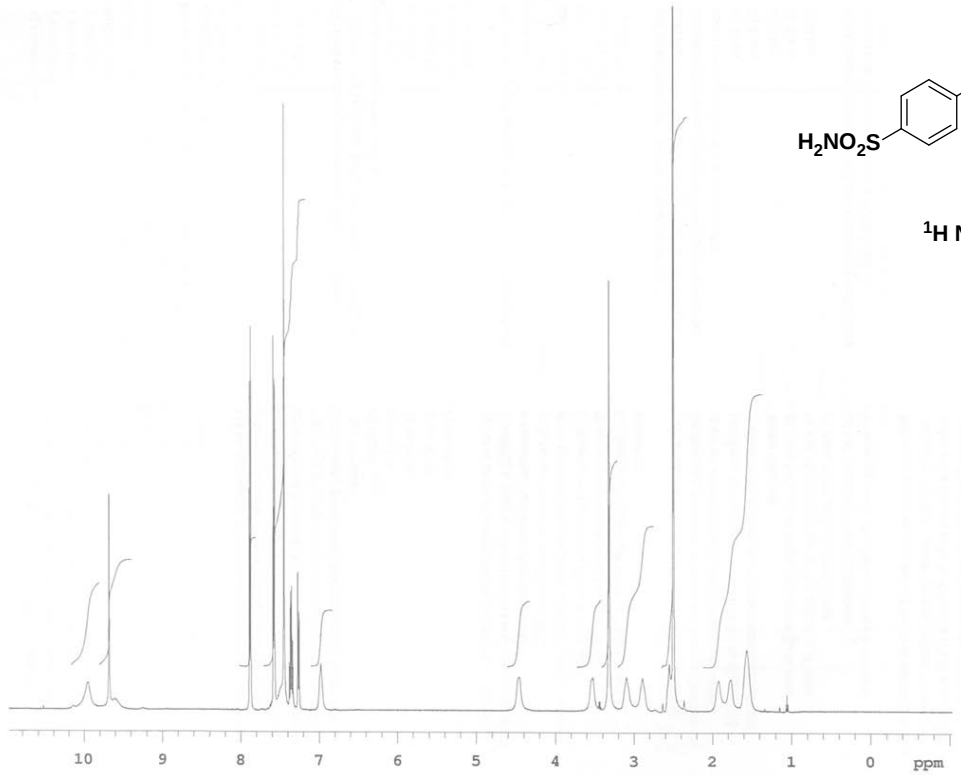


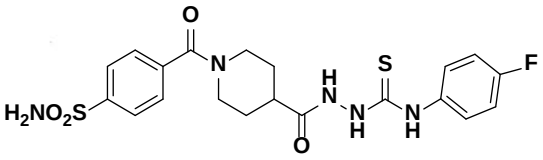
^{1}H NMR, DMSO-*d6, 6n*



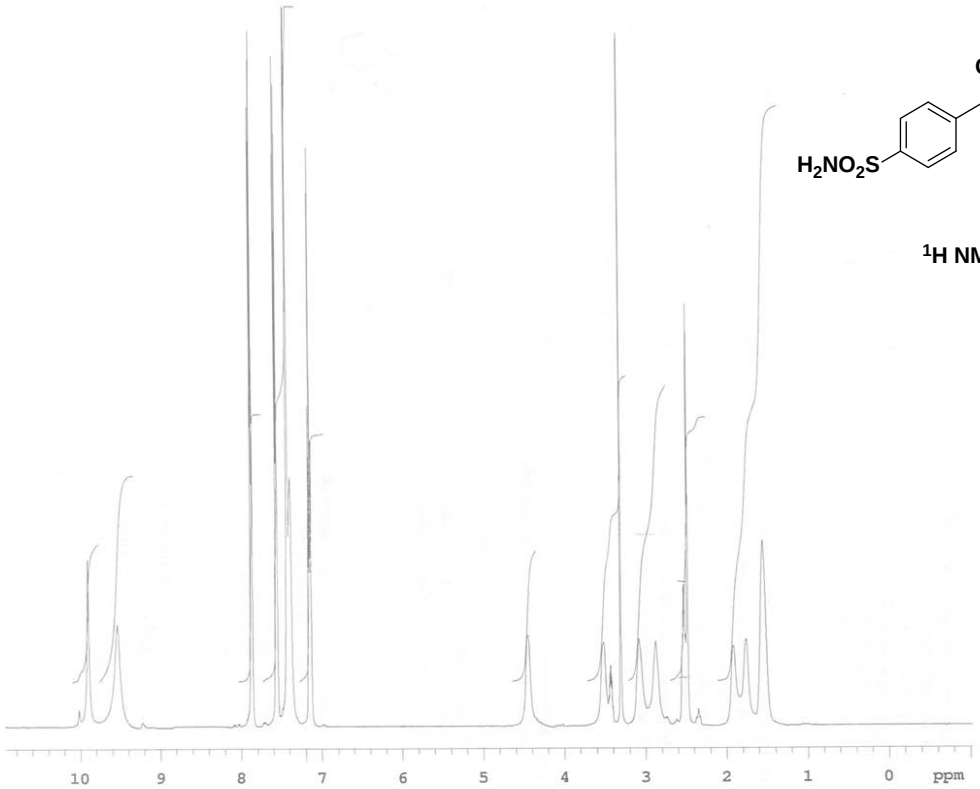


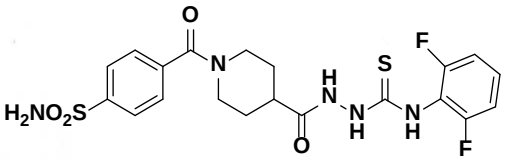
^{1}H NMR, DMSO-*d6, 6o*



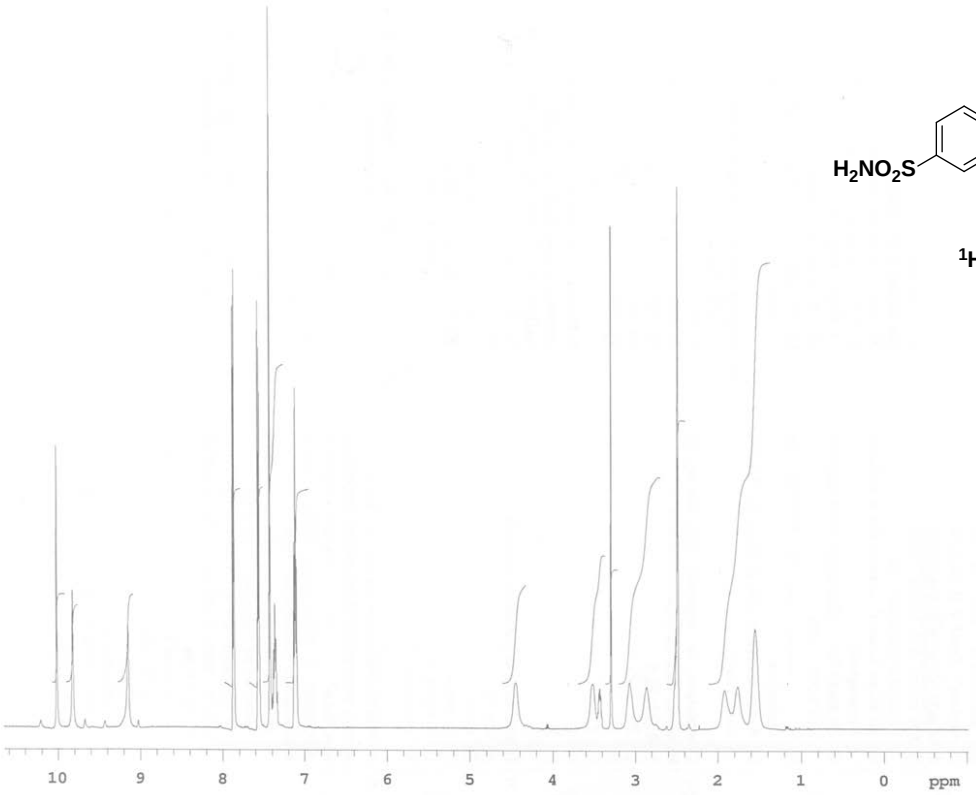


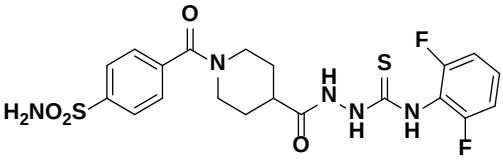
^{1}H NMR, DMSO-*d6, 6p*



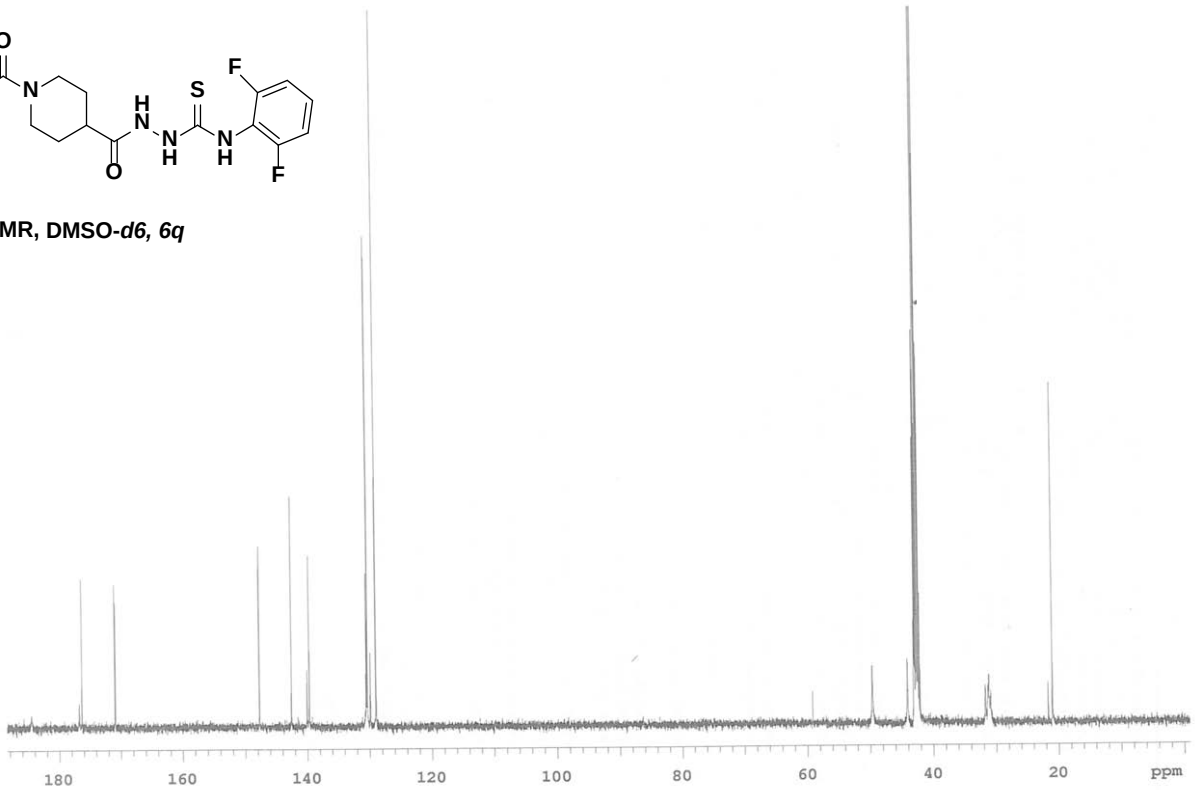


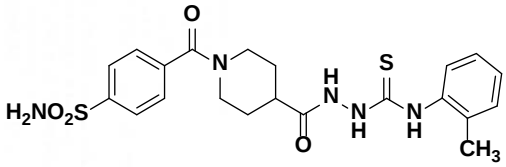
^{1}H NMR, DMSO-*d6, 6q*



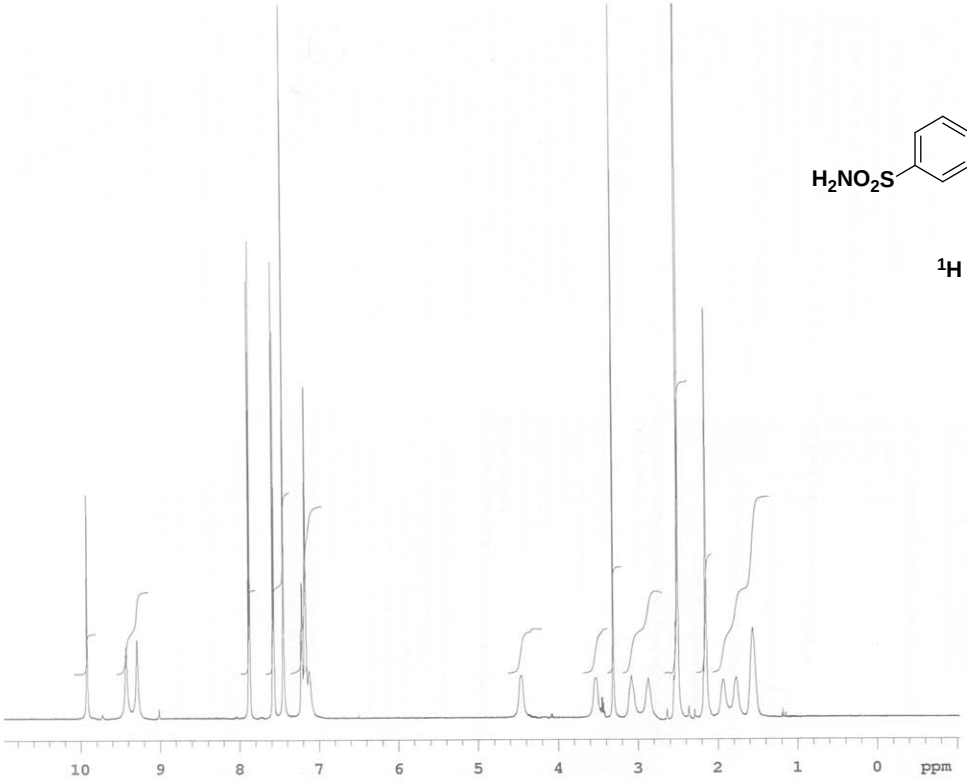


^{13}C NMR, DMSO-*d6, 6q*

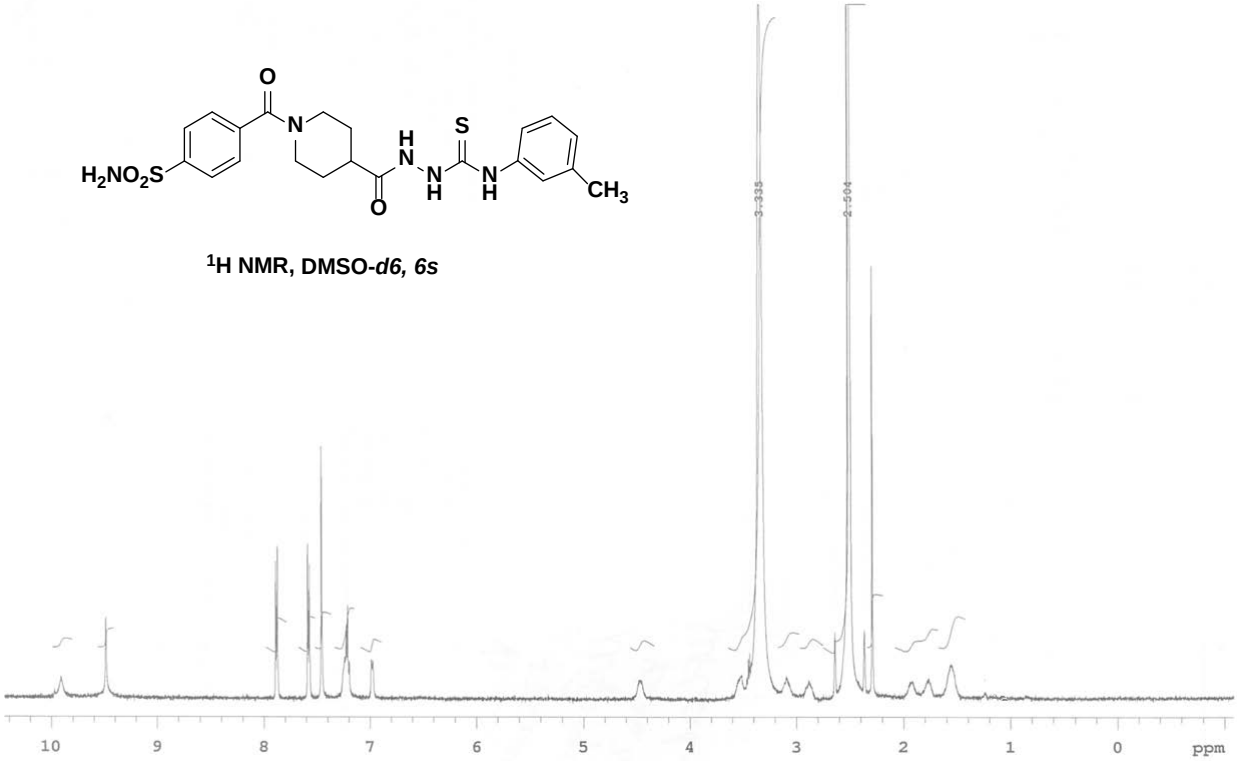


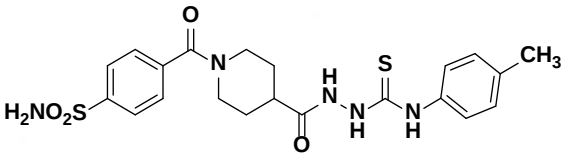


^{1}H NMR, DMSO-*d6, 6r*

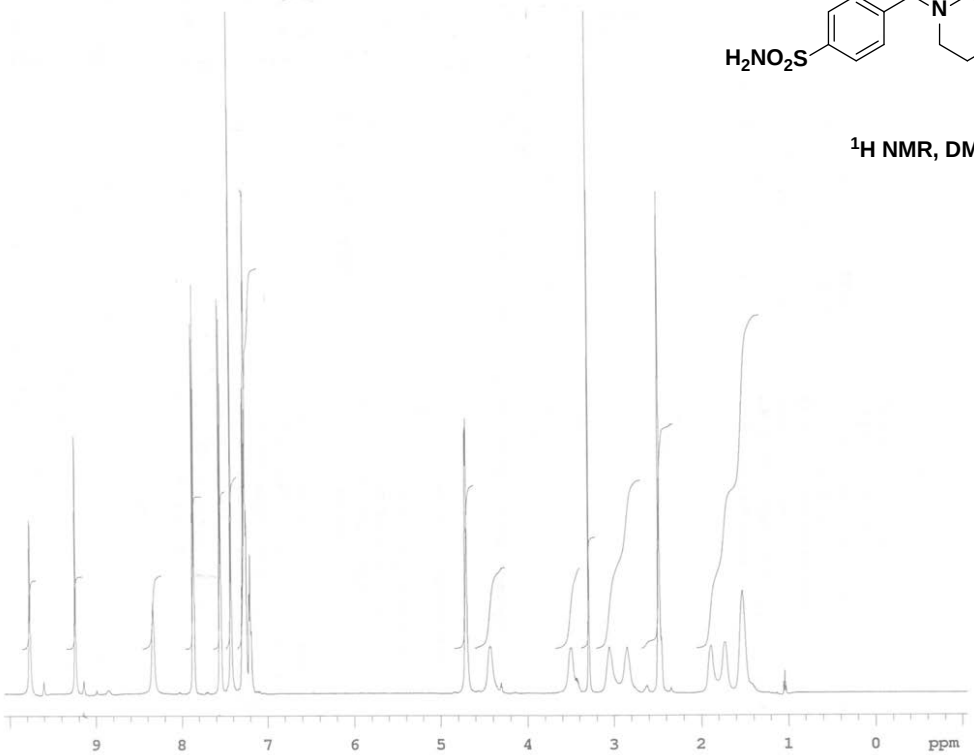


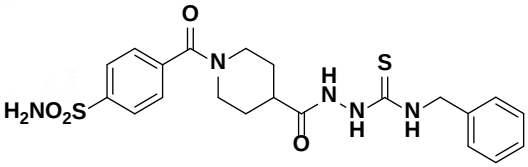
^{1}H NMR, DMSO-*d6, 6s*



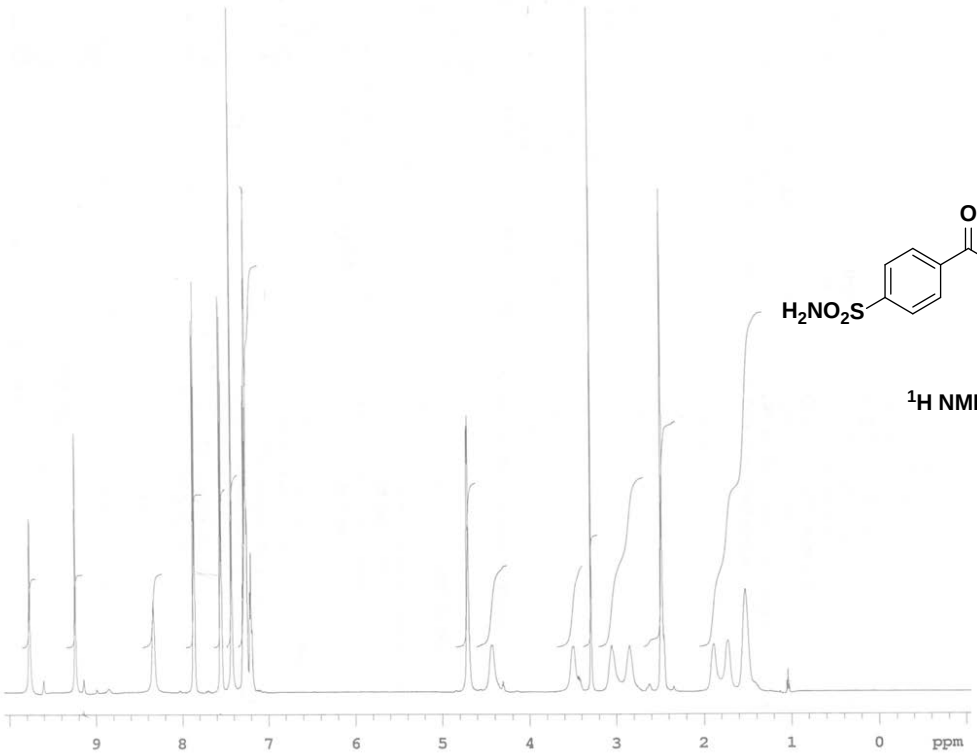


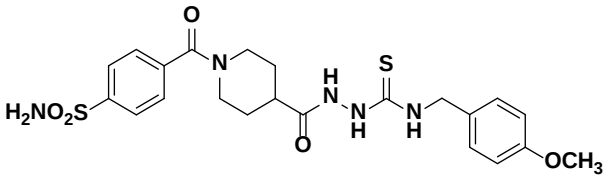
^{1}H NMR, DMSO-*d6, 6t*



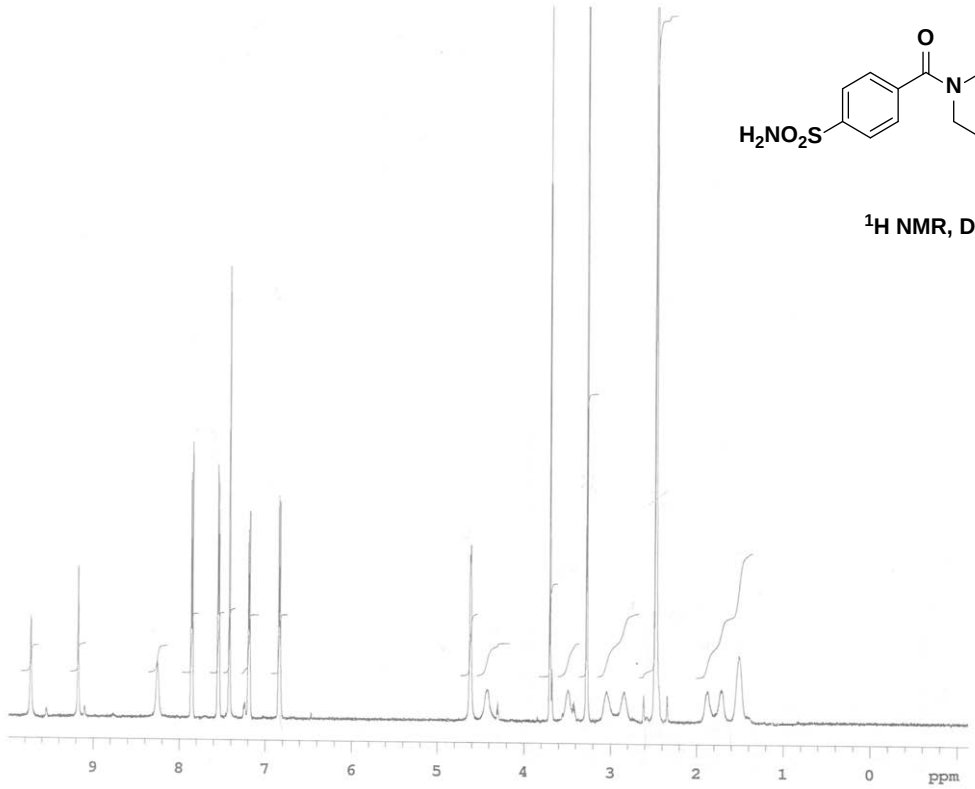


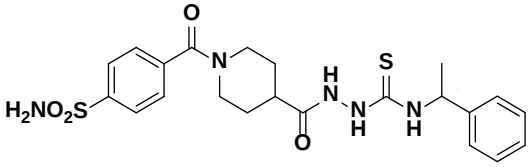
^{1}H NMR, DMSO-*d6, 6v*



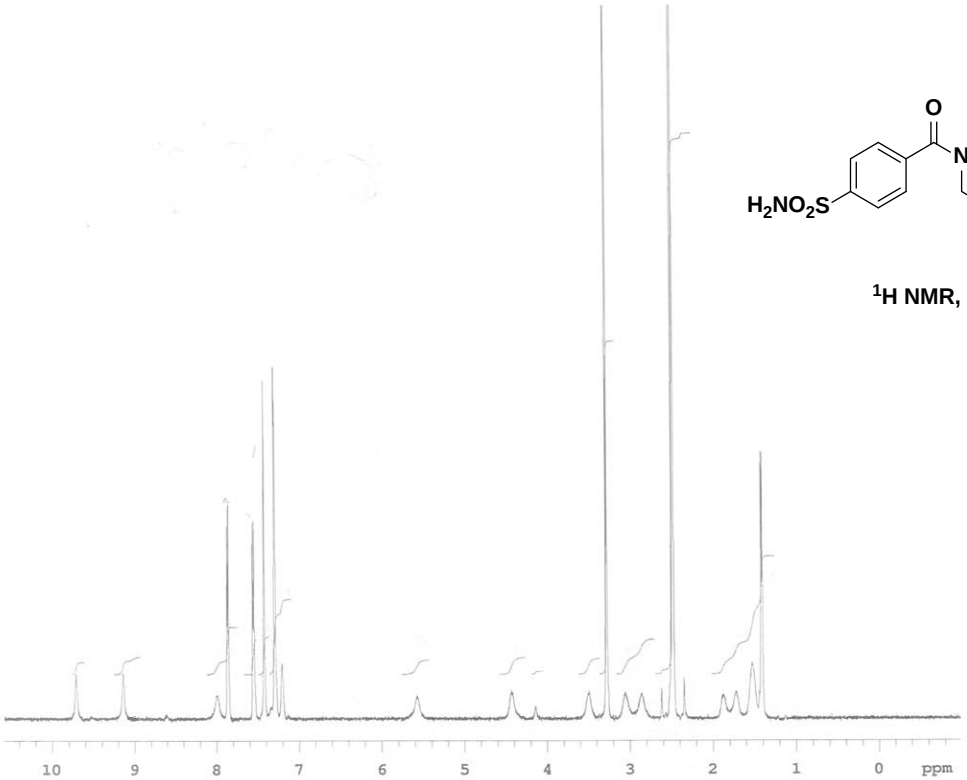


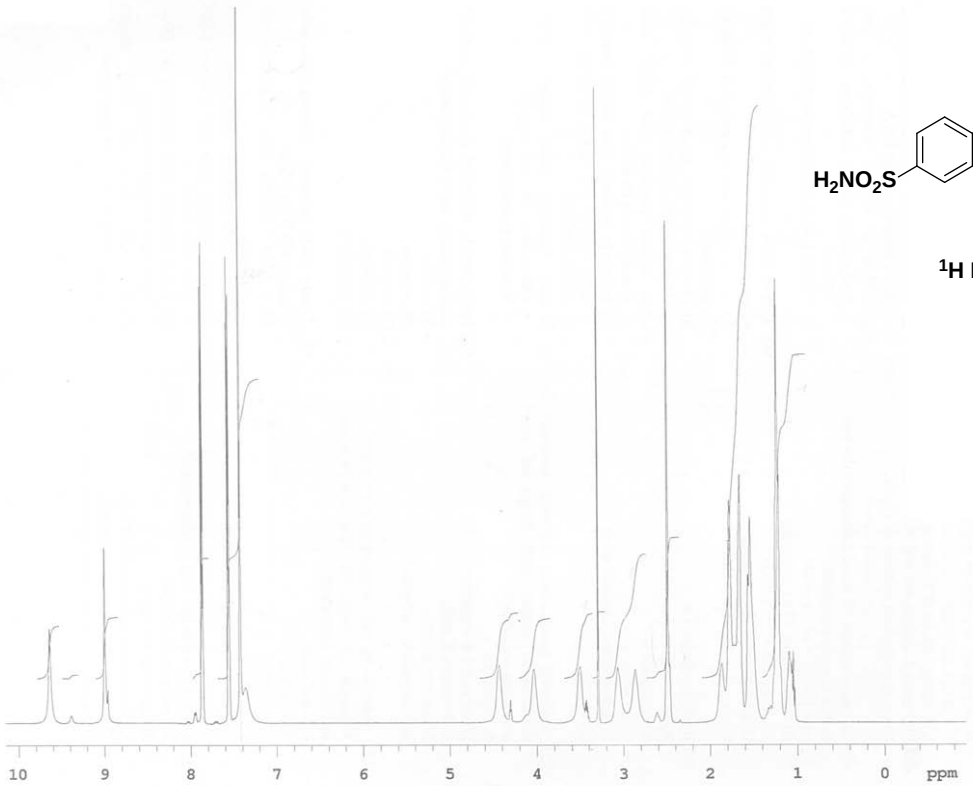
^{1}H NMR, DMSO-*d6, 6w*

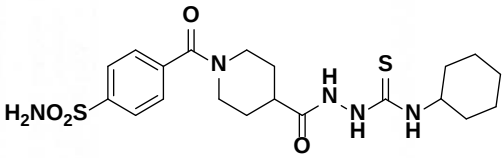




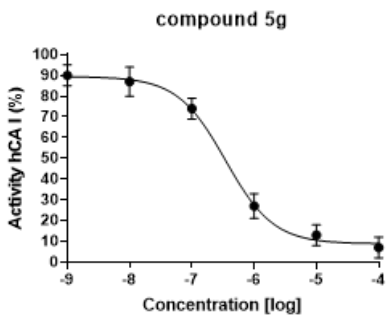
^{1}H NMR, DMSO-*d6, 6x*

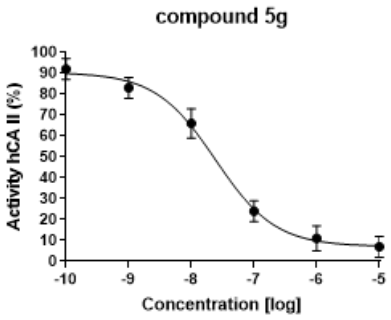


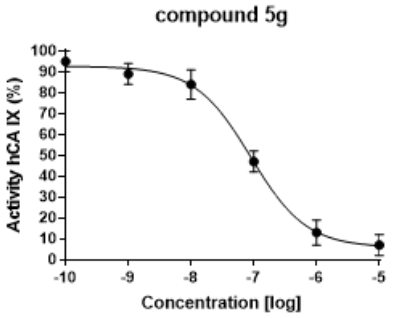


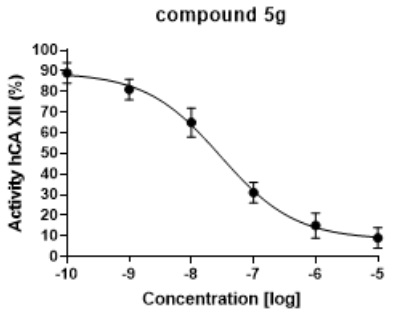


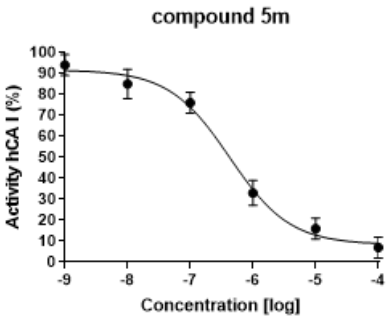
^{1}H NMR, DMSO-*d6*, *6y*

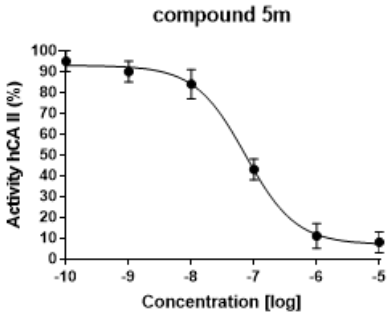

compound 5g
Activity hCA I (%)
Concentration [log]

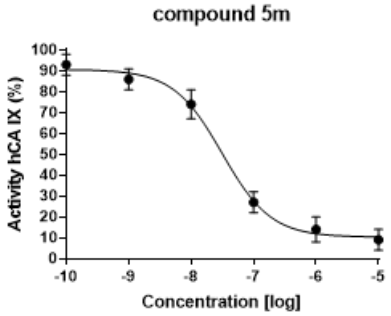

compound 5g
Activity hCA II (%)
Concentration [log]

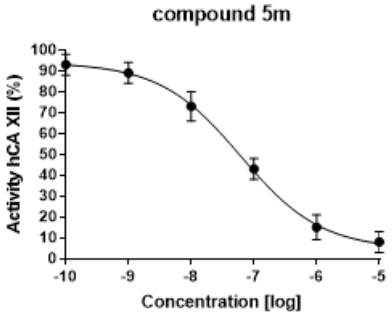

compound 5g
Activity hCA IX (%)
Concentration [log]

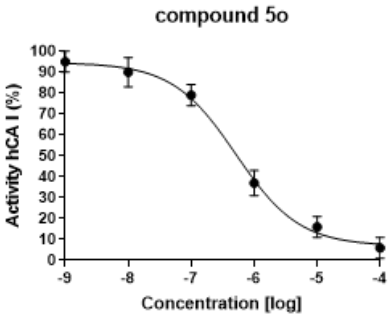

compound 5g
Activity hCA XII (%)
Concentration [log]

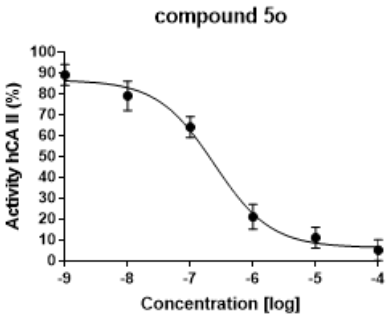

compound 5m
Activity hCA I (%)
Concentration [log]

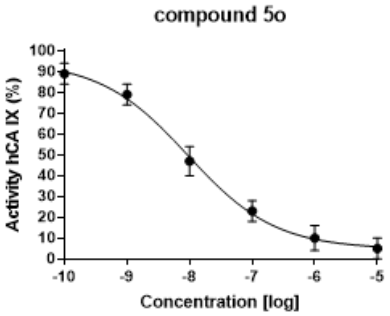

compound 5m
Activity hCA II (%)
Concentration [log]

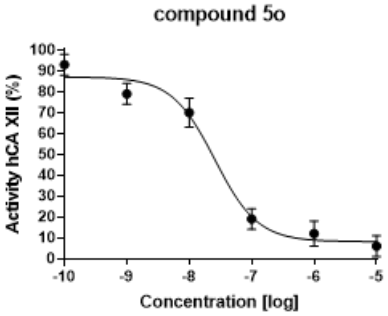

compound 5m
Activity hCA IX (%)
Concentration [log]

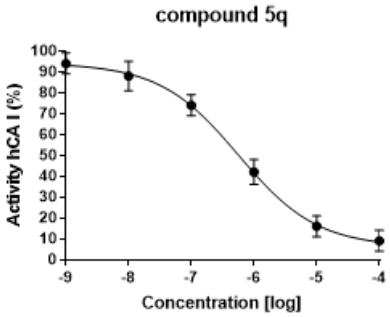

compound 5m
Activity hCA XII (%)
Concentration [log]

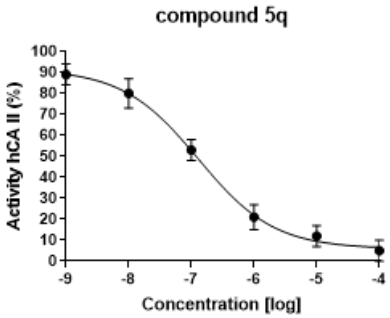

compound 5o
Activity hCA I (%)
Concentration [log]

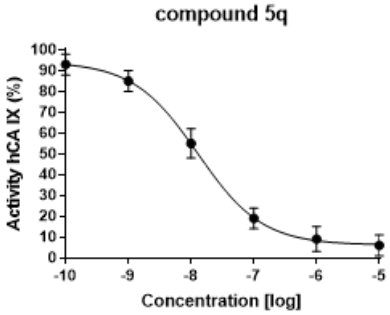

compound 5o
Activity hCA II (%)
Concentration [log]

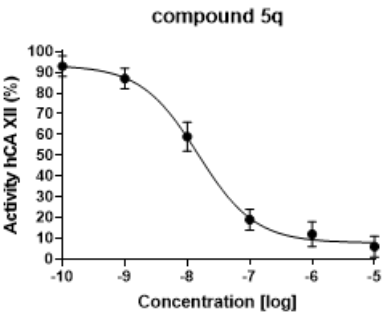

compound 5o
Activity hCA IX (%)
Concentration [log]

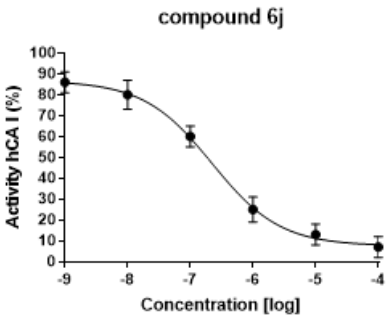

compound 5o
Activity hCA XII (%)
Concentration [log]

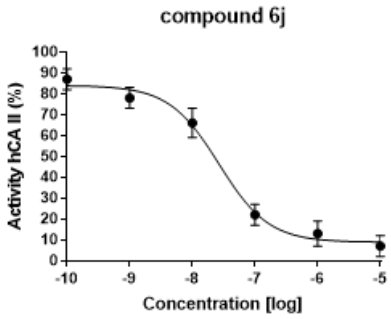

compound 5q
Activity hCA I (%)
Concentration [log]

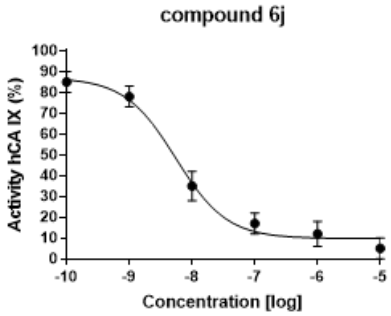

compound 5q
Activity hCA II (%)
Concentration [log]

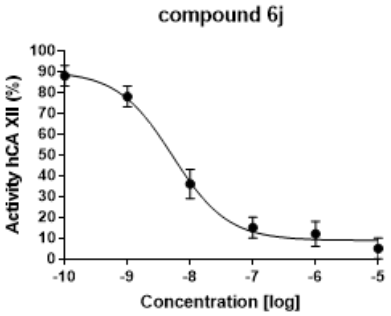

compound 5q
Activity hCA IX (%)
Concentration [log]


compound 5q
Activity hCA XII (%)
Concentration [log]


compound 6j
Activity hCA I (%)
Concentration [log]


compound 6j
Activity hCA II (%)
Concentration [log]


compound 6j
Activity hCA IX (%)
Concentration [log]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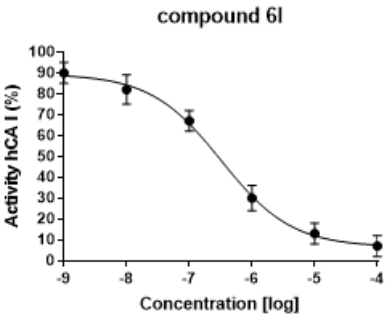
Activity hCA XII (%)
Concentration [log]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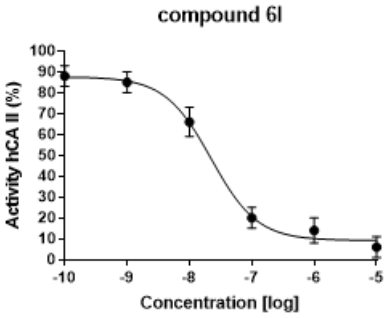
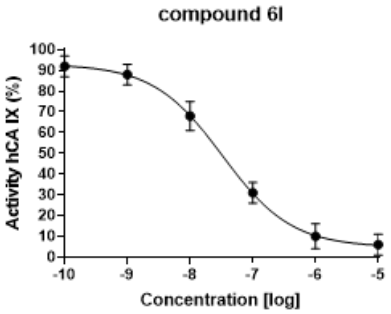
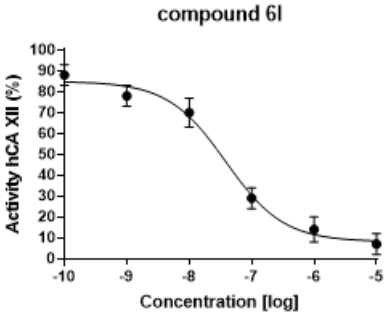
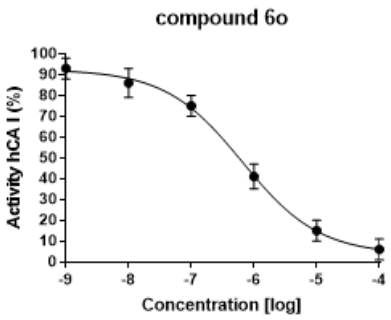
Activity hCA I (%)
Concentration [log]


compound 6l
Activity hCA II (%)
Concentration [log]


compound 6l
Activity hCA IX (%)
Concentration [log]


compound 6l
Activity hCA XII (%)
Concentration [log]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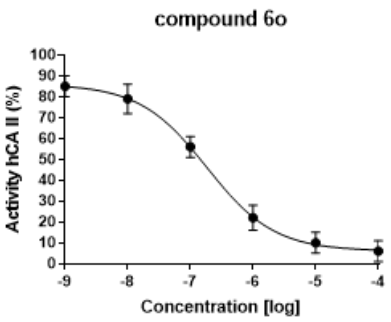
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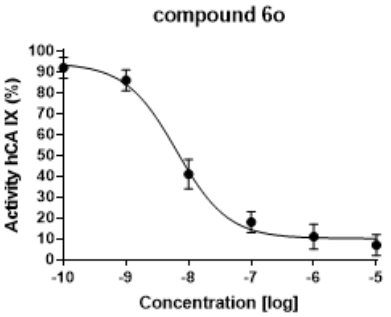
Activity hCA II (%)
Concentration [log]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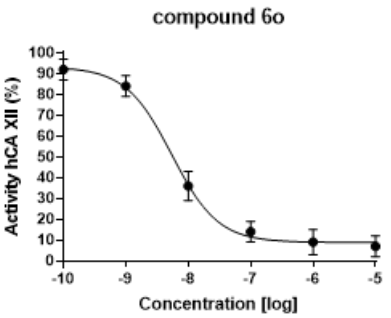
Activity hCA IX (%)
Concentration [log]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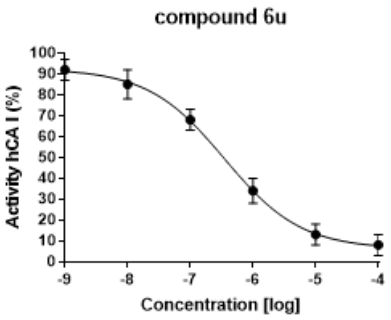
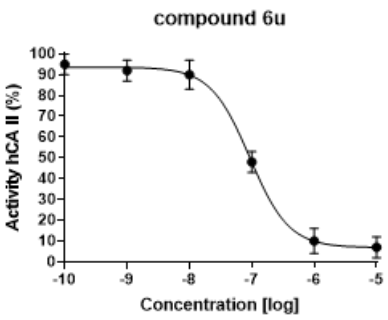
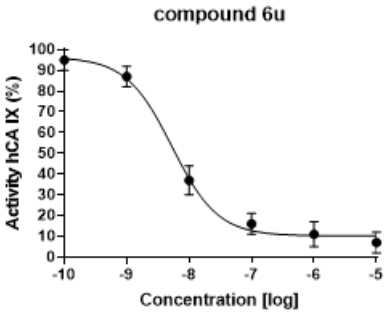
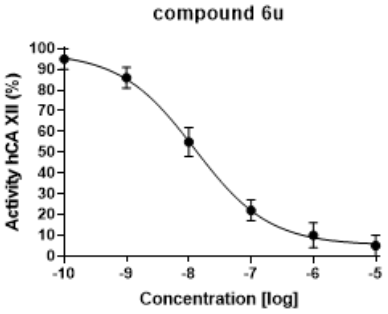
Activity hCA XII (%)
Concentration [log]


compound 6u
Activity hCA I (%)
Concentration [log]


compound 6u
Activity hCA II (%)
Concentration [log]


compound 6u
Activity hCA IX (%)
Concentration [log]


compound 6u
Activity hCA XII (%)
Concentration [log]