Electronic Supplementary Material (ESI) for RSC Advances.
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Supplementary information

Title: Synthesis, biological evaluation and molecular modeling studies of phthalazin-1(2H)-one derivatives as novel cholinesterase inhibitors

Noemí Vila,[a, b] Pedro Besada,[a, b] Dolores Viña,[c] Mattia Sturlese,[d] Stefano Moro,[d] Carmen Terán[a, b, *]

[a] Departamento de Química Orgánica, Universidade de Vigo, 36310, Vigo, Spain

[b] Instituto de Investigación biomédica (IBI), Universidade de Vigo, 36310, Vigo, Spain

[c] Centro de Investigación en Medicina Molecular y Enfermedades Crónicas (CIMUS) Universidade de Santiago de Compostela,15782, Santiago de Compostela, Spain

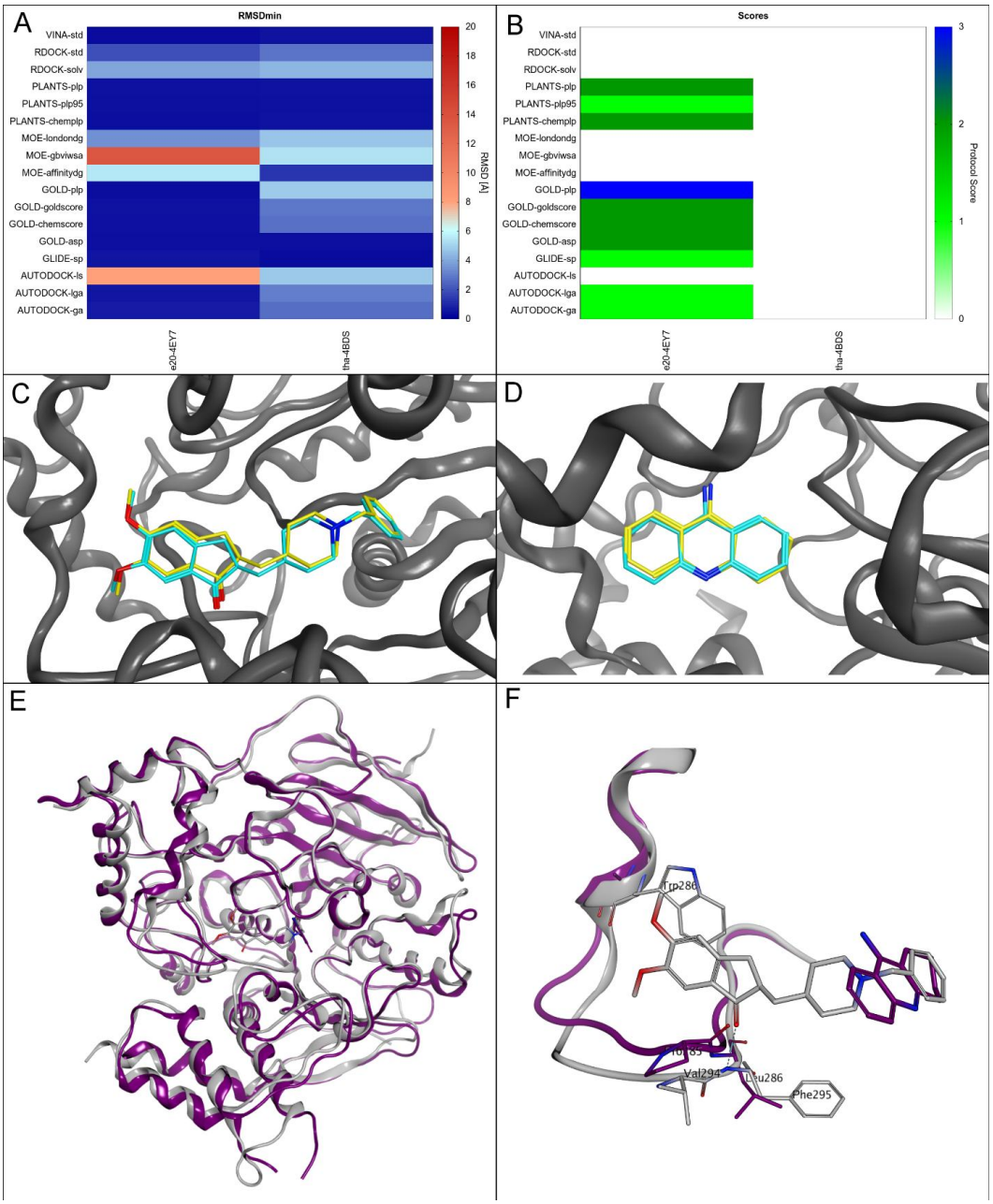
[d] Molecular Modeling Section (MMS), Dipartimento di Scienze del Farmaco, Università degli Studi di Padova, 35131, Padova, Italy

*To whom correspondence should be addressed.

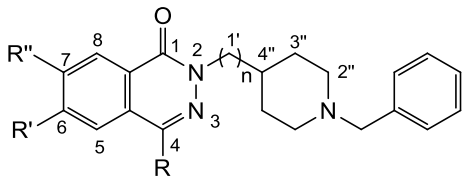
Phone: 34 986 812276

Fax: 34 986 812262

E.mail: mcteran@uvigo.es

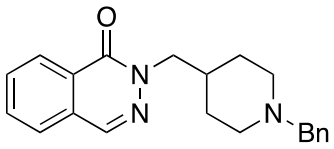


SI Figure 1. In panel A and B, the $RMSD_{min}$ and SCORE heat maps resulted from the Docking benchmark performed with Dockbench are shown. In A, the colour of the map corresponds to the minimum RMSD value obtained by the corresponding docking protocol (y-axis) and protein structure (x-axis). Similarly, in B the final score is presented using a white (weak performance) to blue (best performance) palette as colour scheme. In Panel C and D, the conformation resulted by the selected docking protocol (cyan) is superposed to the experimentally derived one (yellow) for donepezil and tacrine, respectively. In E, the superposition of the human AChE (PDB ID: 4EY7; light grey) and BuChE (PDB ID: 4BDS; violet) is reported using the ribbon representation. In panel F, the same superposition that in panel E is shown, but focusing only into the binding site, where the main differences were found (explicit residue sidechain). The donepezil and tacrine molecules as well as the residue sidechains were shown and colored according the complex they belong (AChE, light grey; BuChE, violet).



1a-j R = H, *p*-Tol, CH_3; R' = H, OCH_3;
R'' = H, OCH_3; n = 1,2,3

SI Figure 2. General structure and atom numbering of target compounds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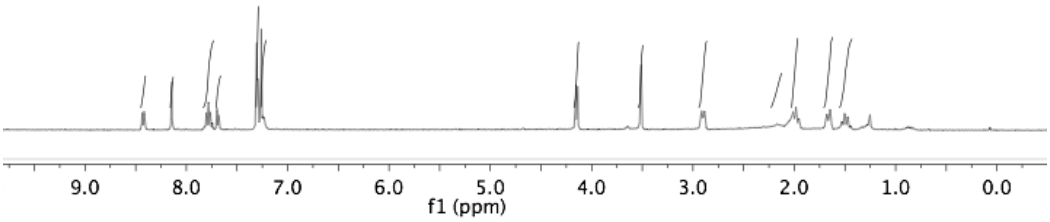
Bn

1a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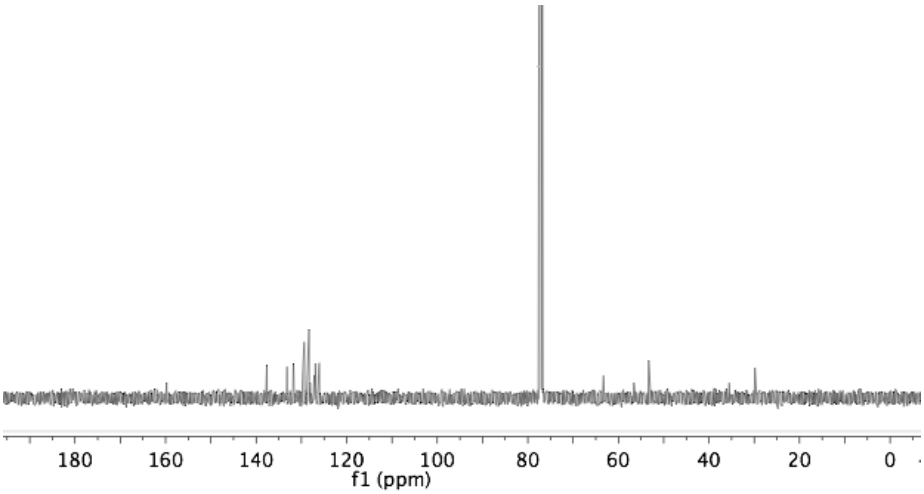
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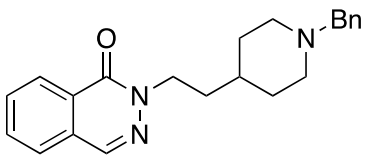
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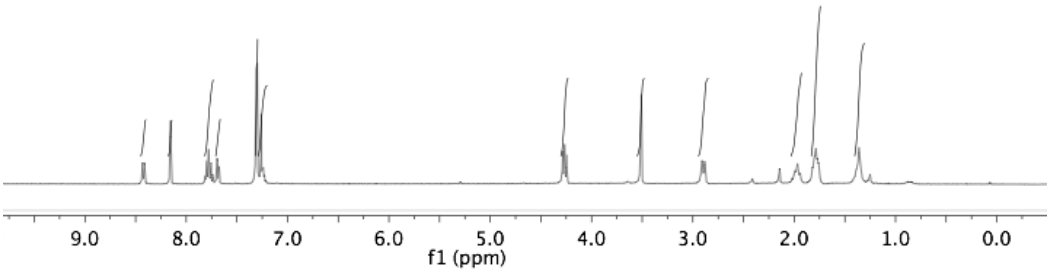
1b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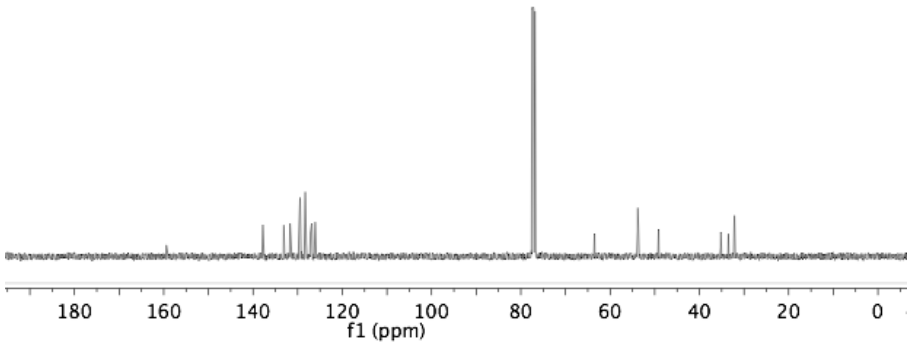
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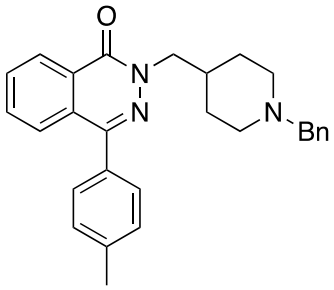
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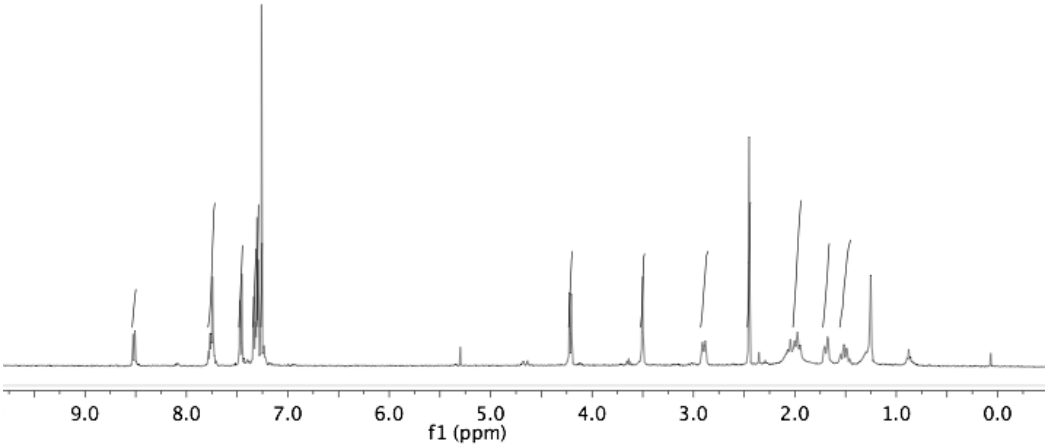
1c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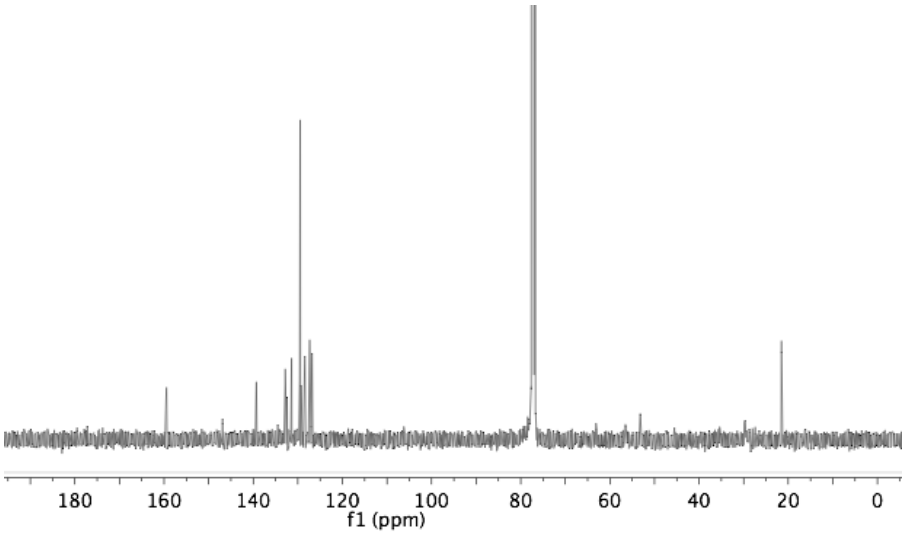
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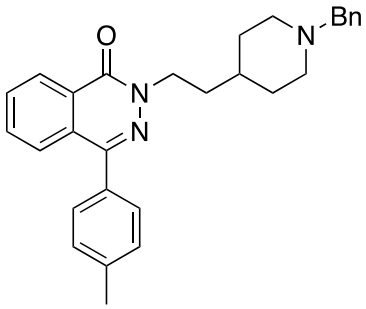
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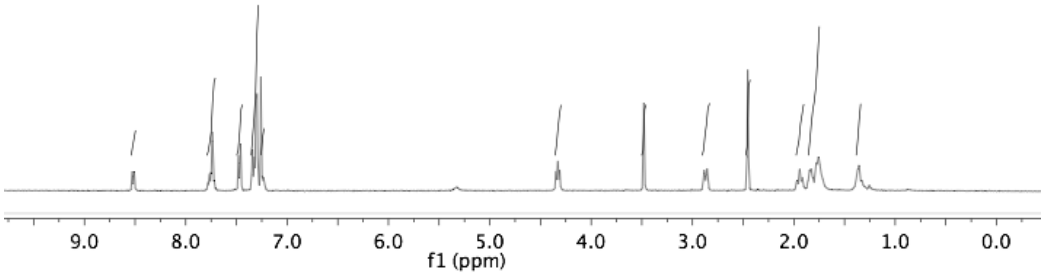
N
N
Bn

1d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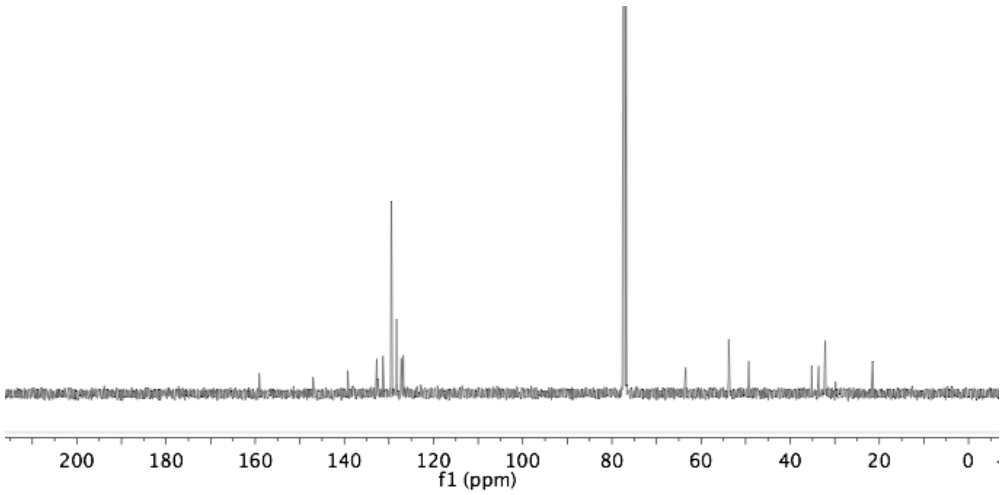
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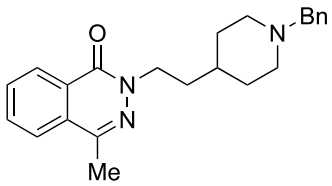
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Bn
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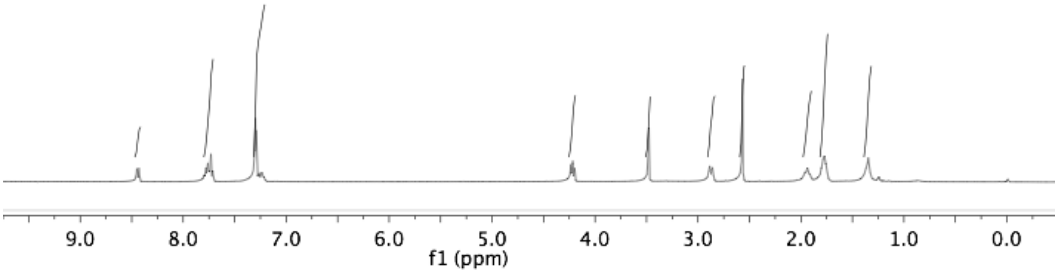
N
Me

1e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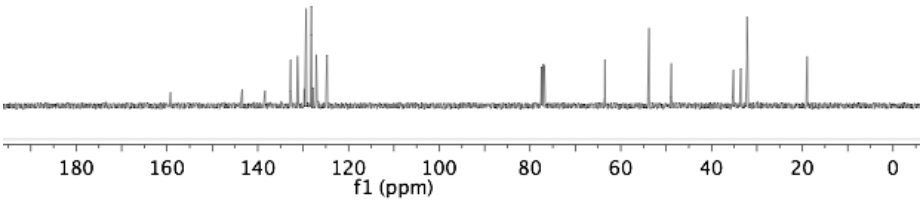
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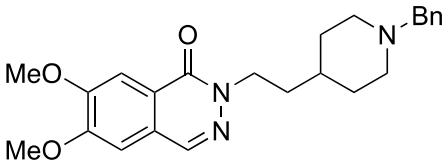
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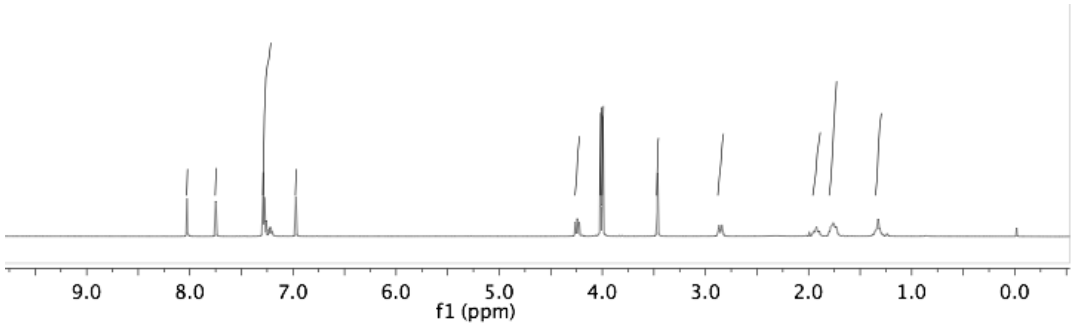
MeO
N
MeO
N

1f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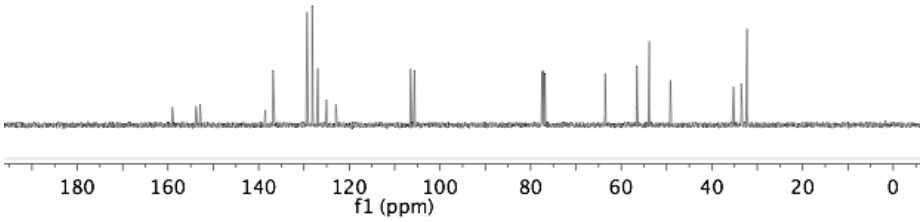
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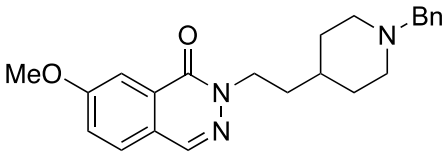
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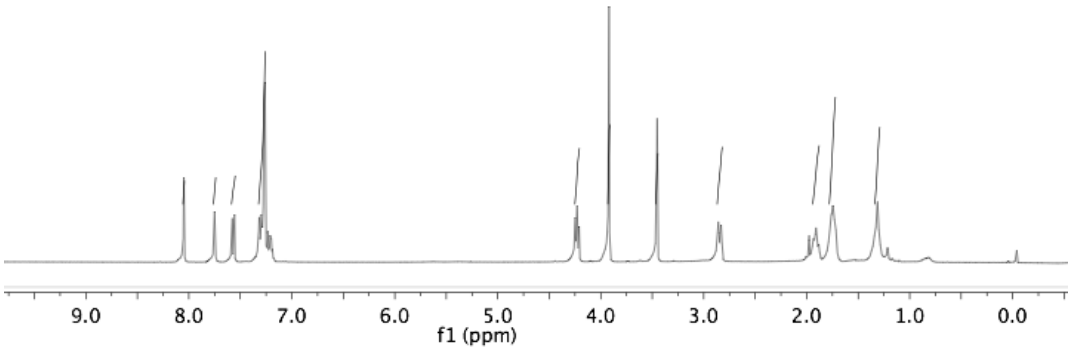
N
Bn

1g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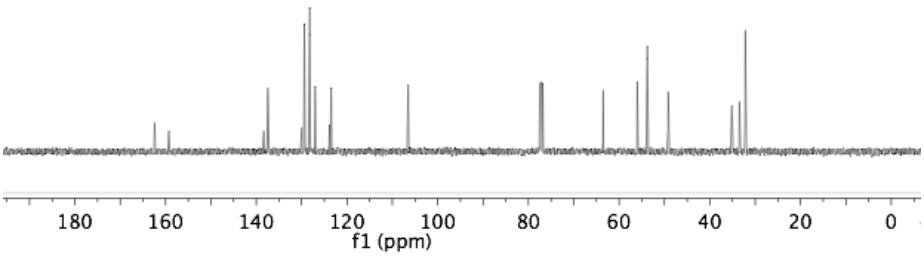
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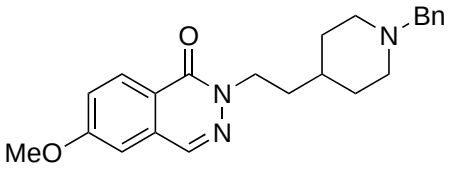
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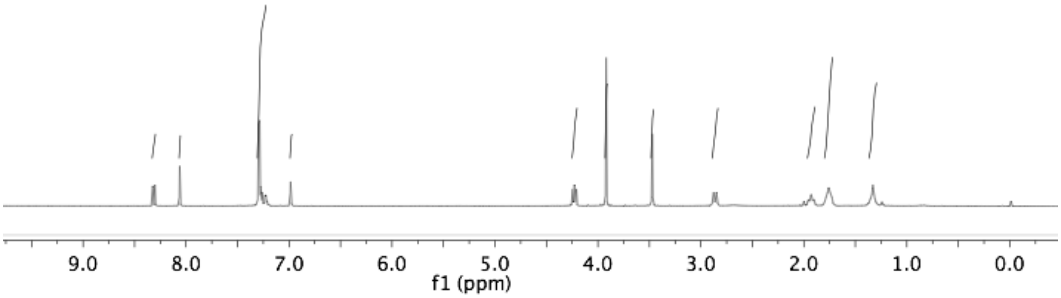
MeO

1h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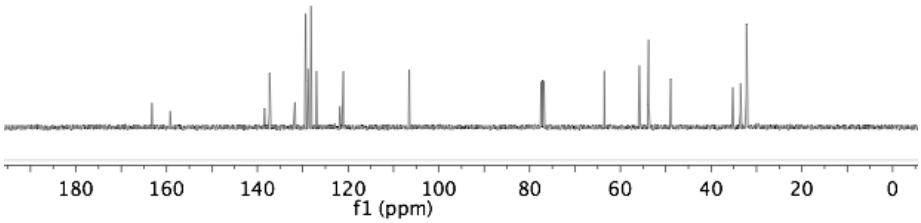
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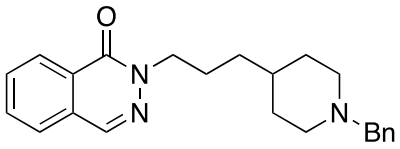
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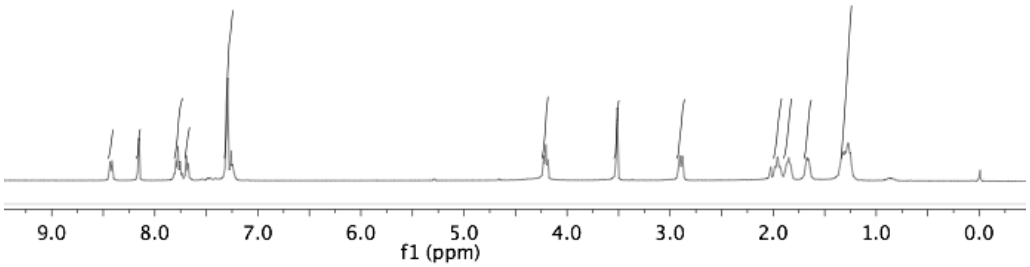
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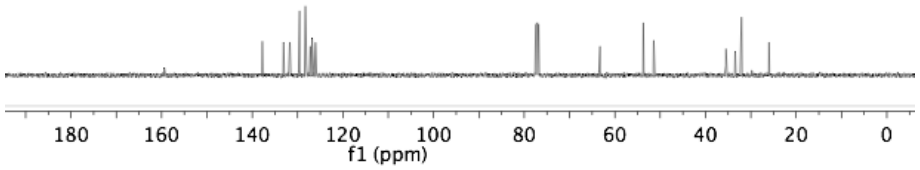
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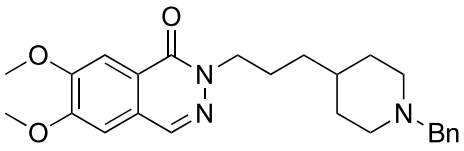
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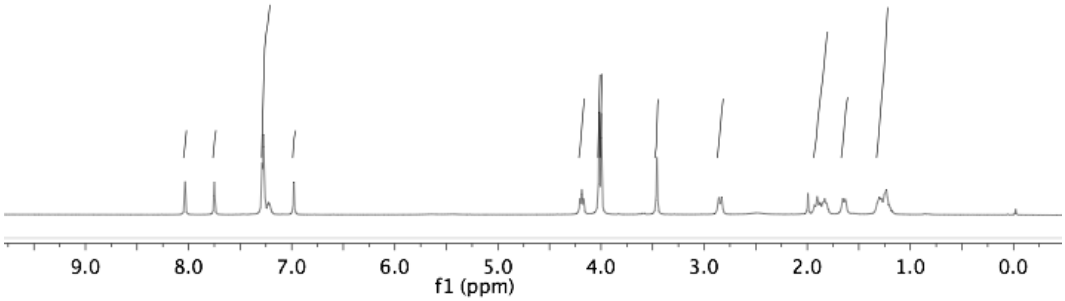
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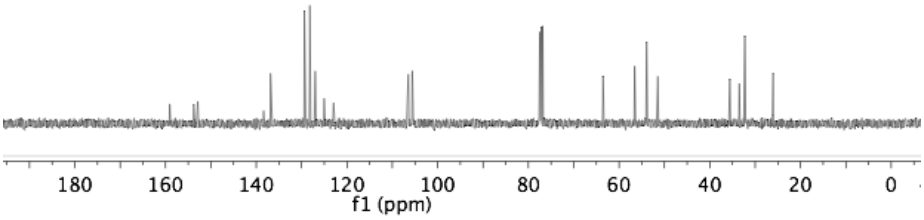
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