

## Supplementary data

### Synthesis and Molecular Docking Studies of Novel Bi-heterocyclic Propanamides as Anti-diabetic Agents having Mild Cytotoxicity

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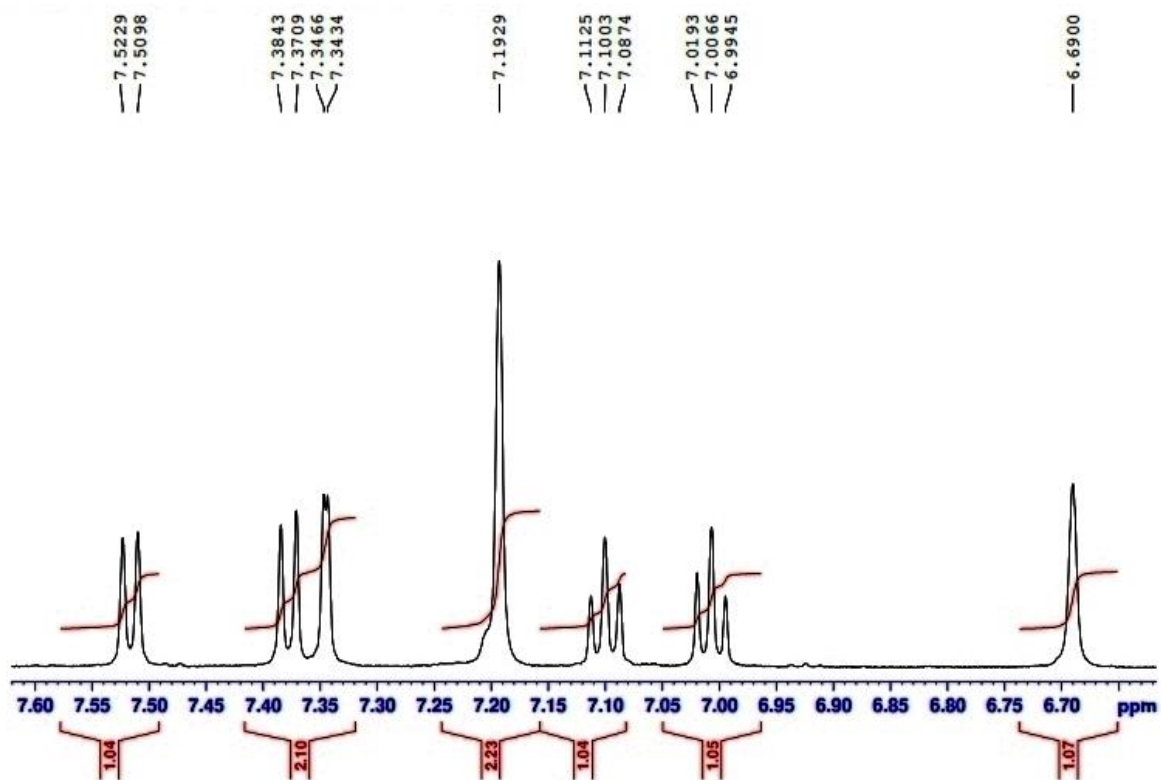
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**Figure S1:** Aromatic region of  $^1\text{H-NMR}$  spectrum of **8r**.

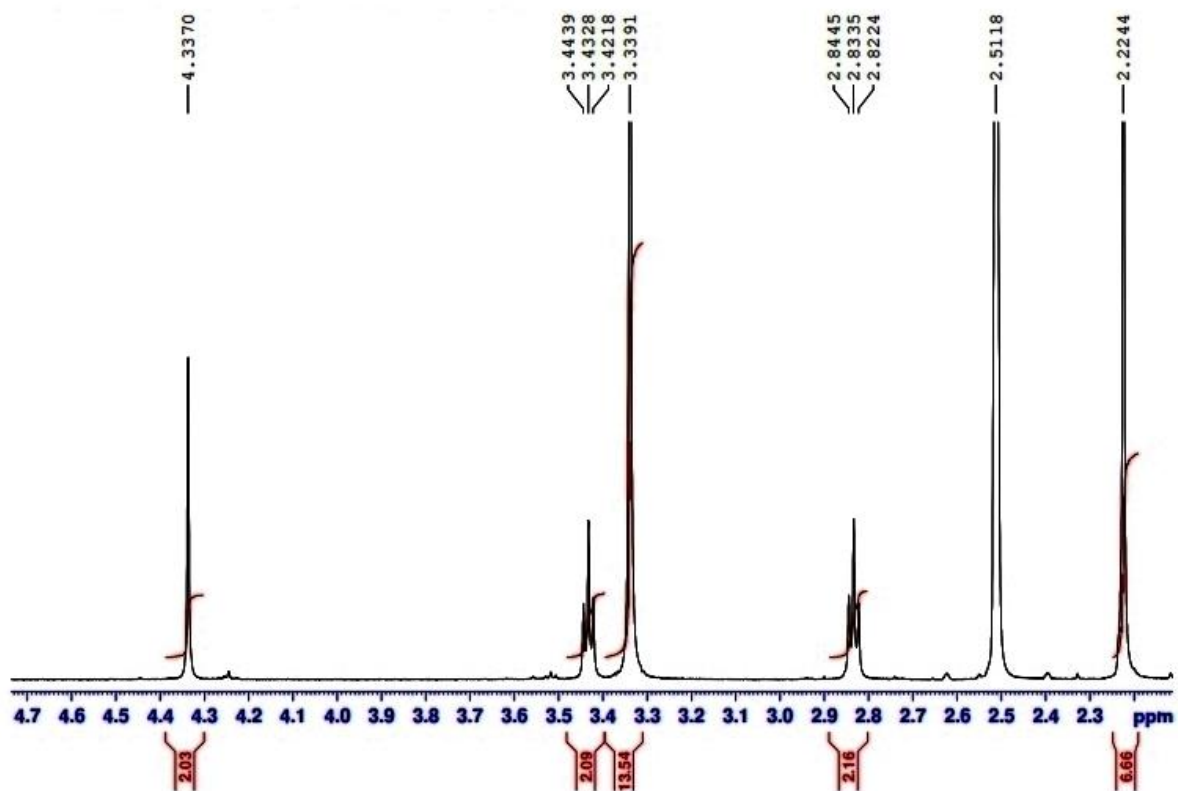
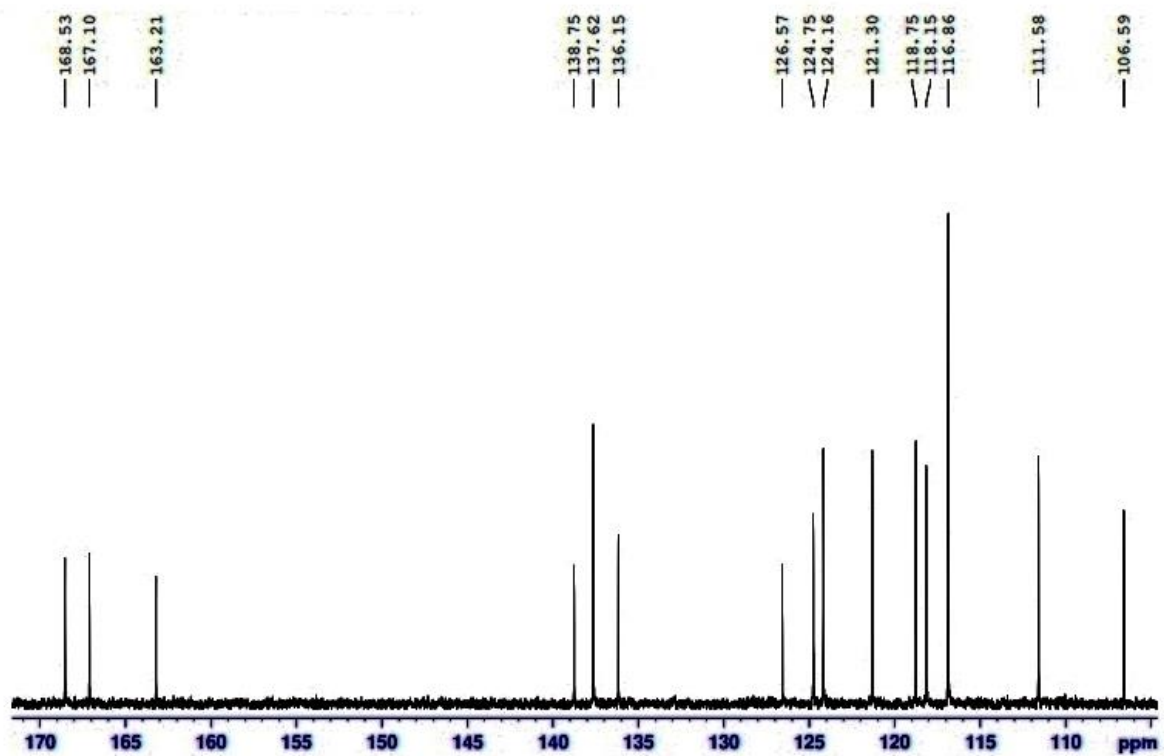
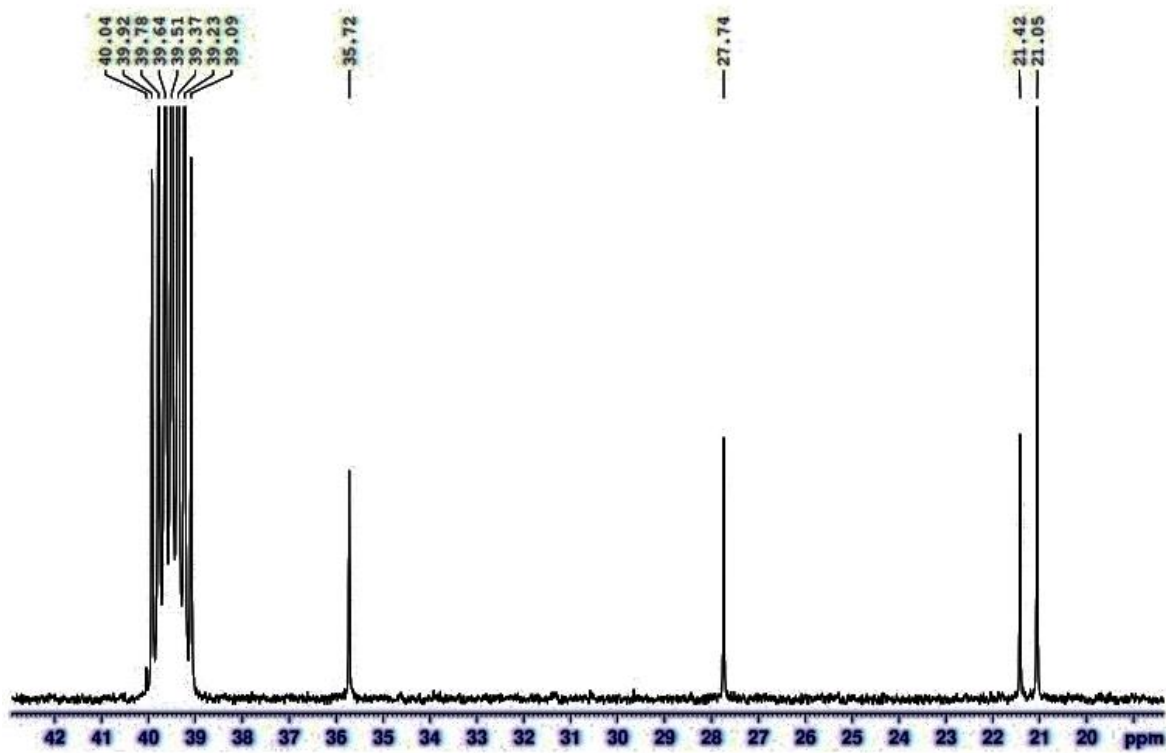


Figure S2: Aliphatic region of  $^1\text{H-NMR}$  spectrum of **8r**.



**Figure S3:** Downfield region of  $^{13}\text{C}$ -NMR spectrum of **8r**.



**Figure S4:** Upfield region of  $^{13}\text{C}$ -NMR spectrum of **8r**.

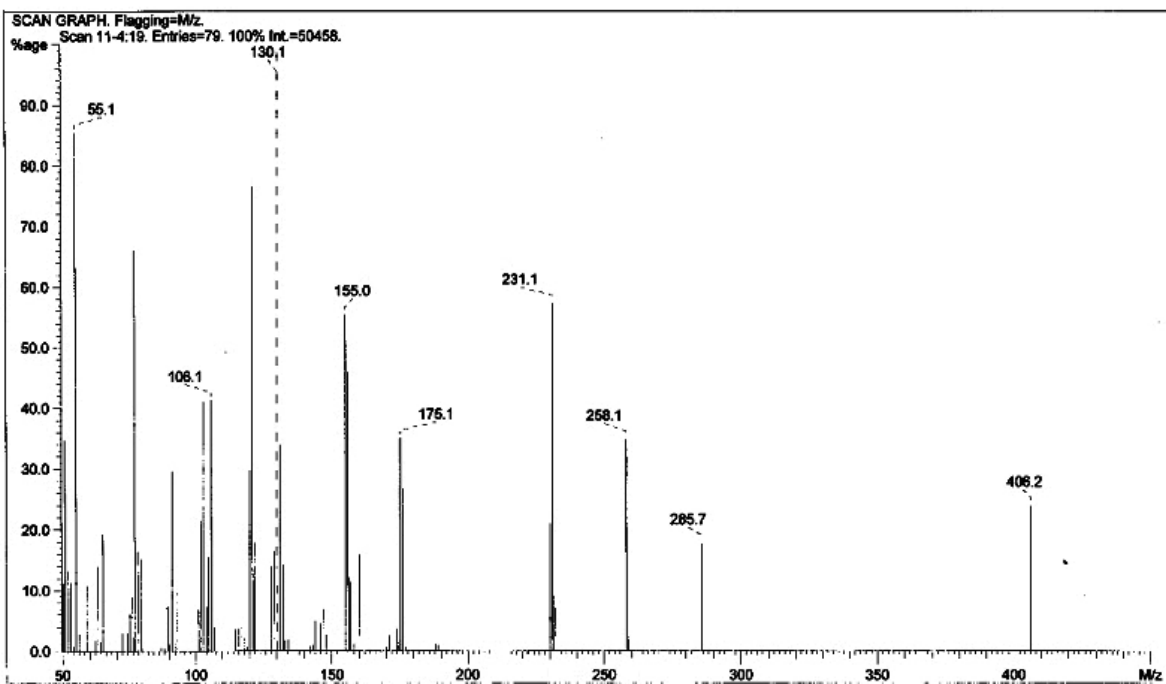
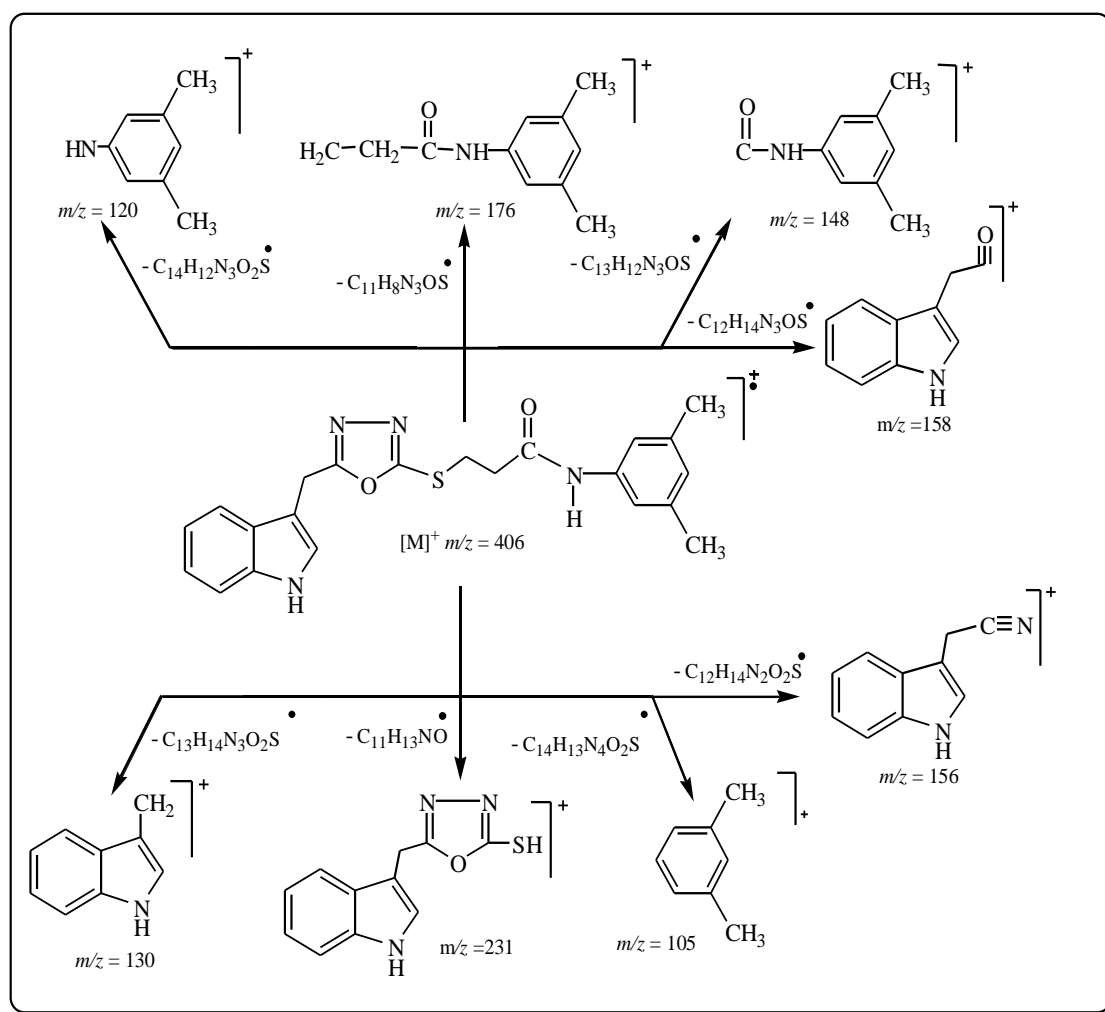
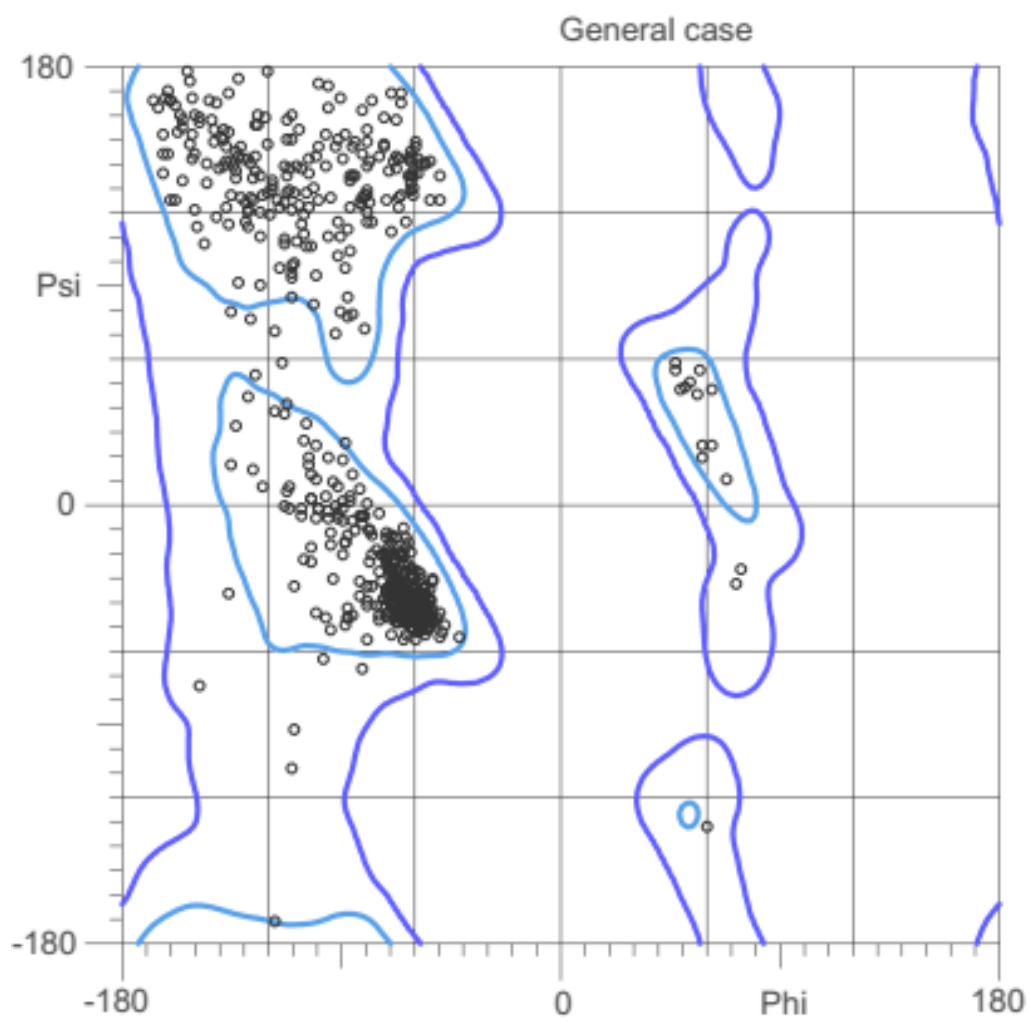


Figure S5: EI-MS spectrum of **8r**.

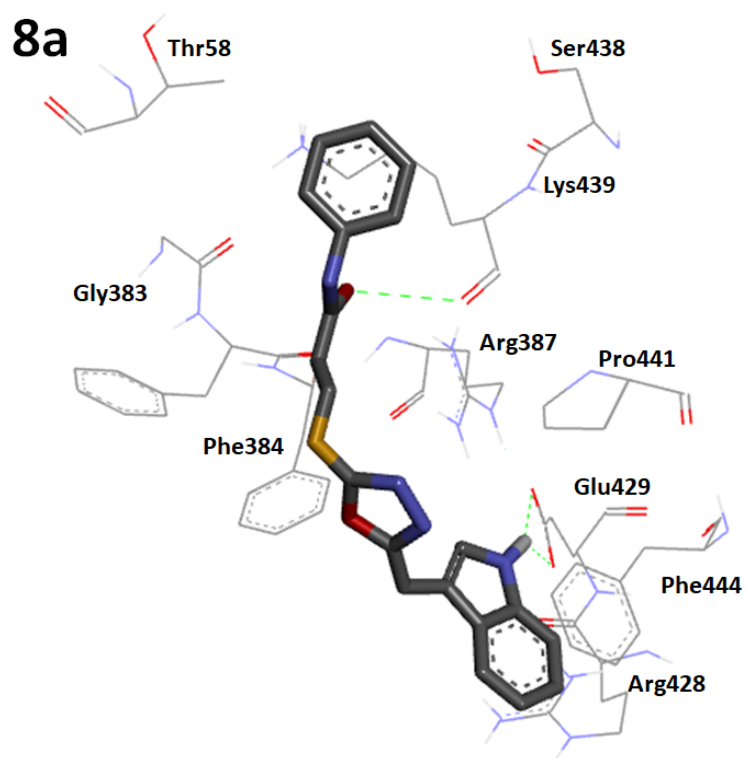


**Figure S6:** Fragmentation pattern of **8r**.

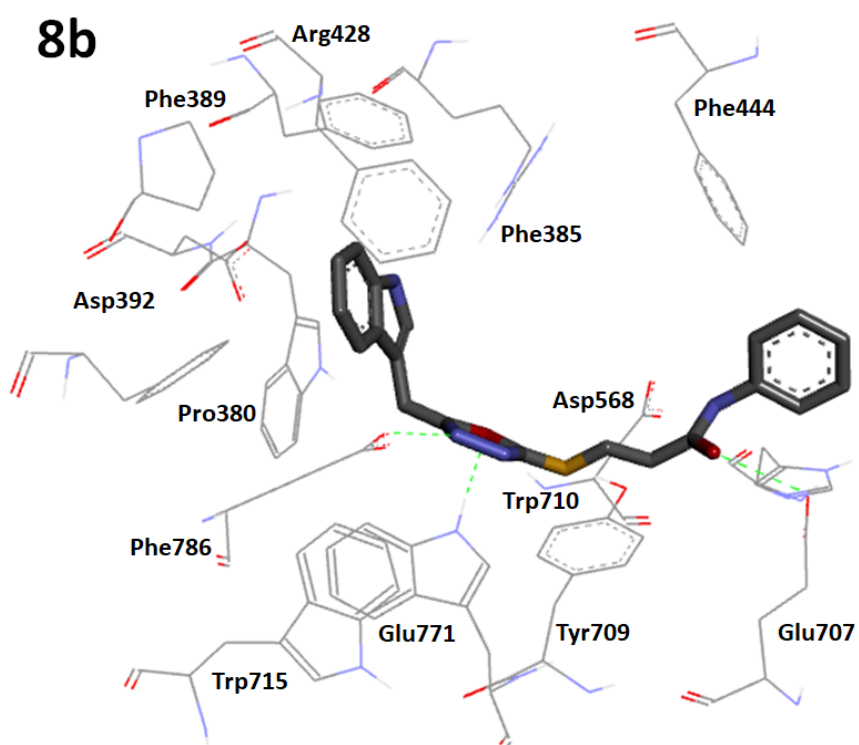


**Figure S7:** Ramachandran graph.

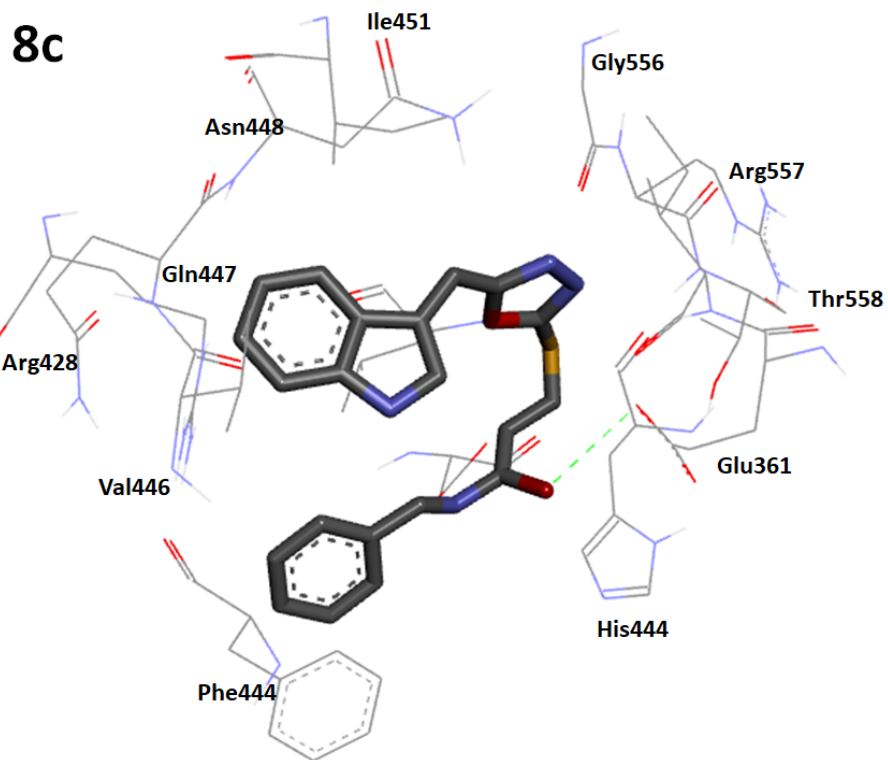




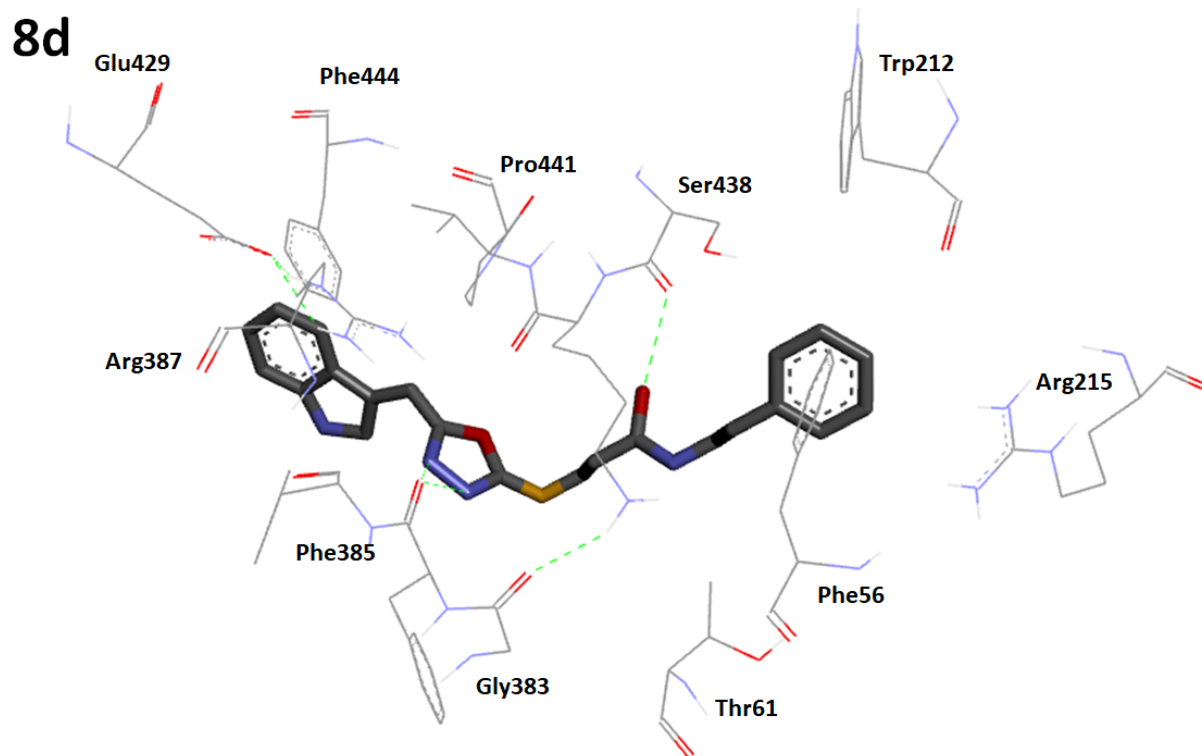
**Figure S8:** Docking of **8a** with  $\alpha$ -glucosidase.



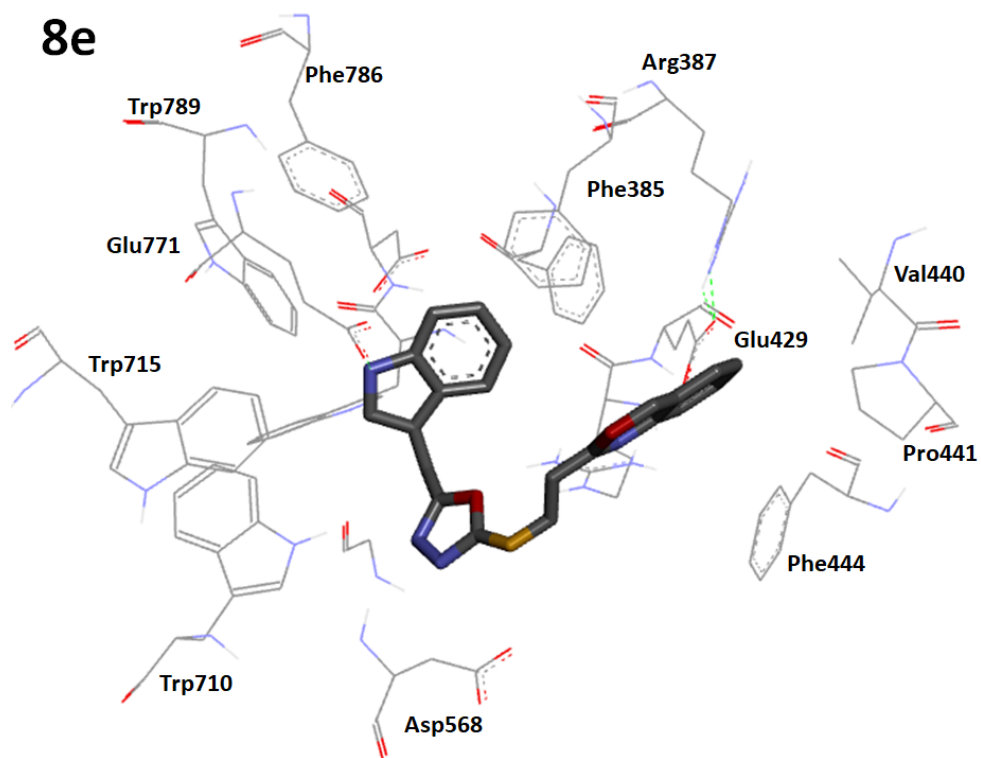
**Figure S9:** Docking of **8b** with  $\alpha$ -glucosidase.



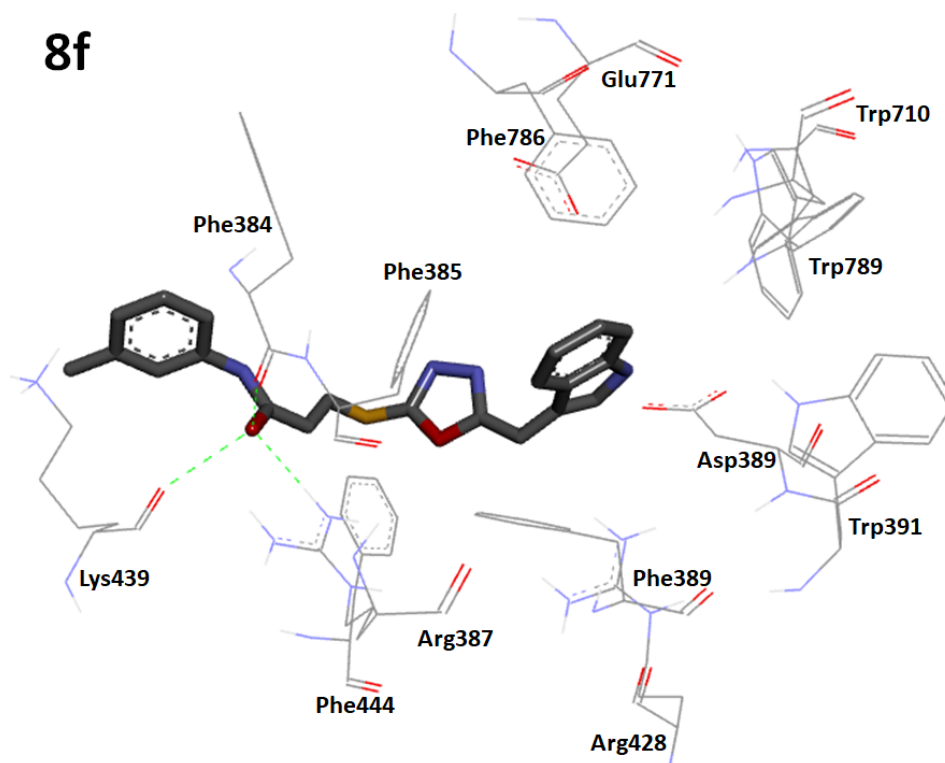
**Figure S10:** Docking of **8c** with  $\alpha$ -glucosidase.



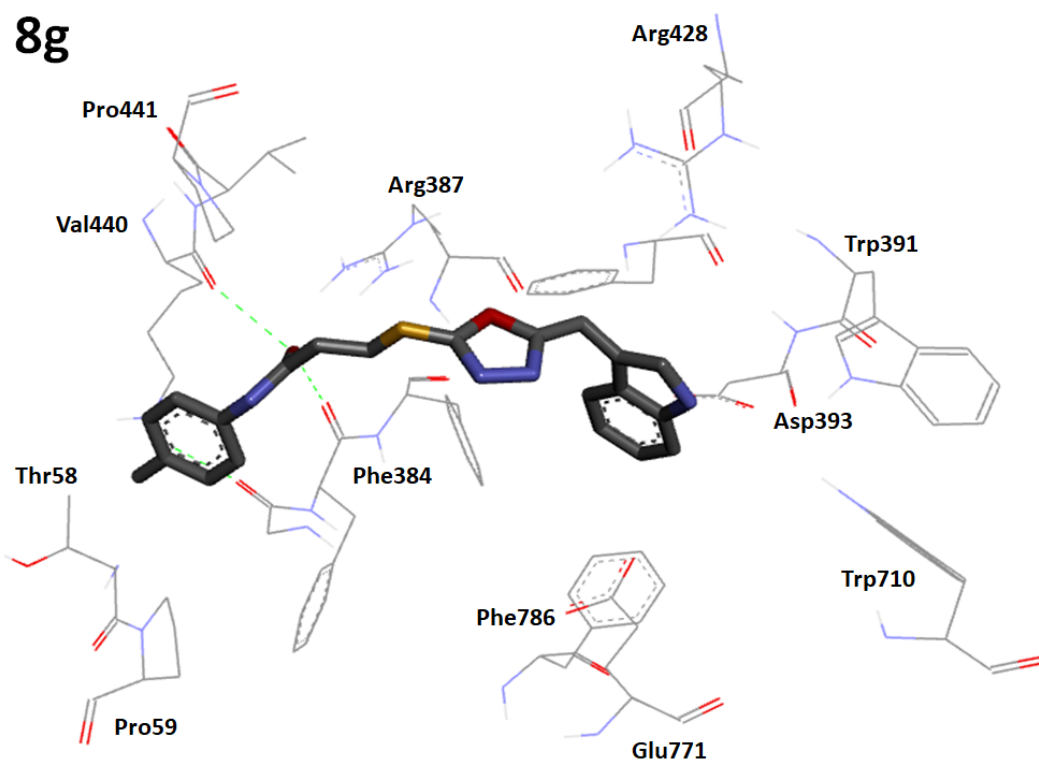
**Figure S11:** Docking of **8d** with  $\alpha$ -glucosidase.



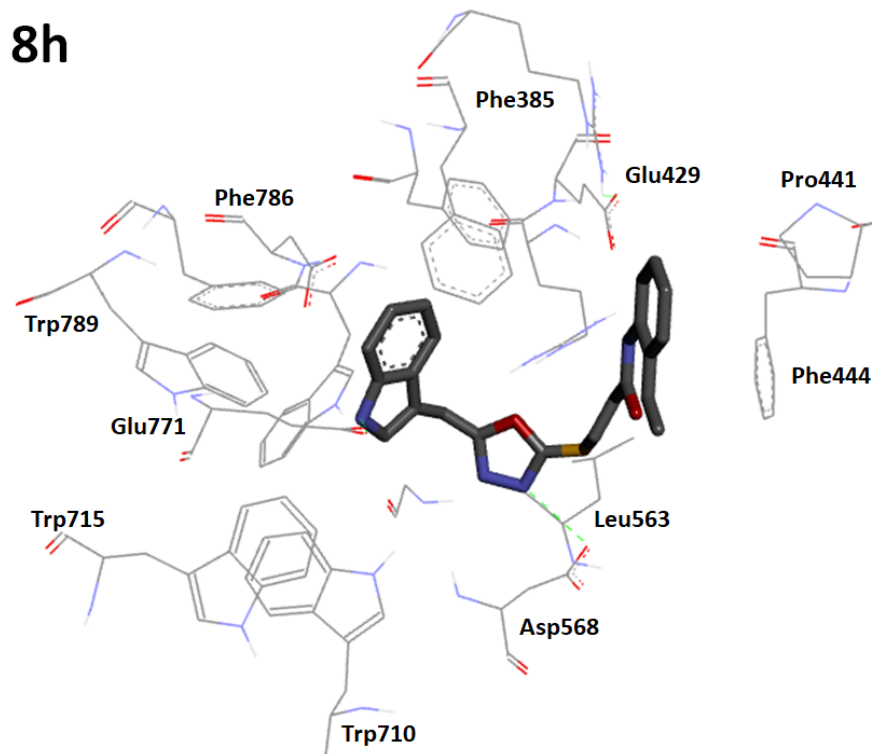
**Figure S12:** Docking of **8e** with  $\alpha$ -glucosidase.



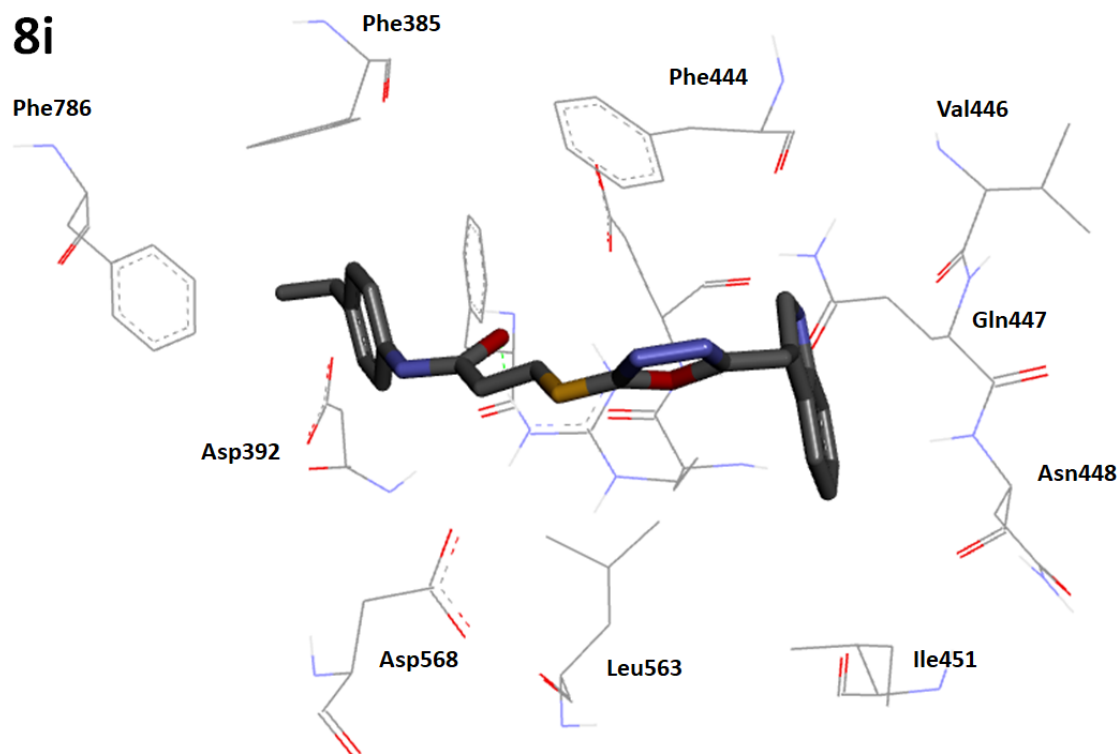
**Figure S13:** Docking of **8f** with  $\alpha$ -glucosidase.



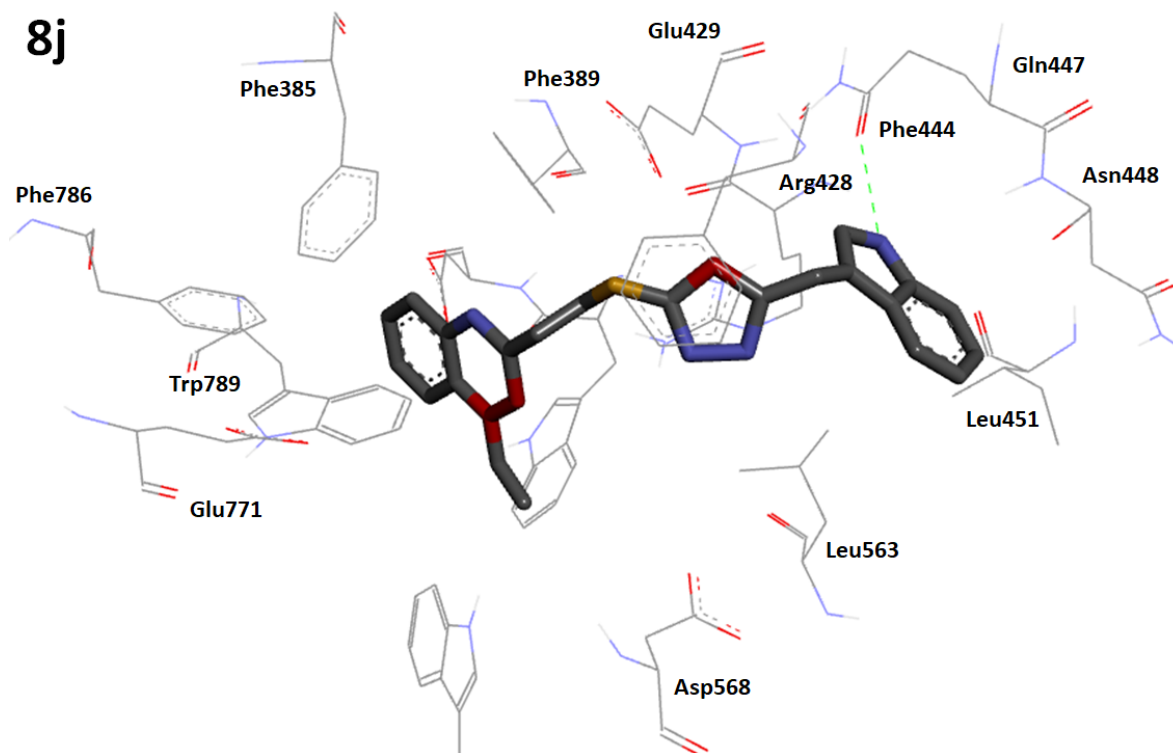
**Figure S14:** Docking of **8g** with  $\alpha$ -glucosidase.



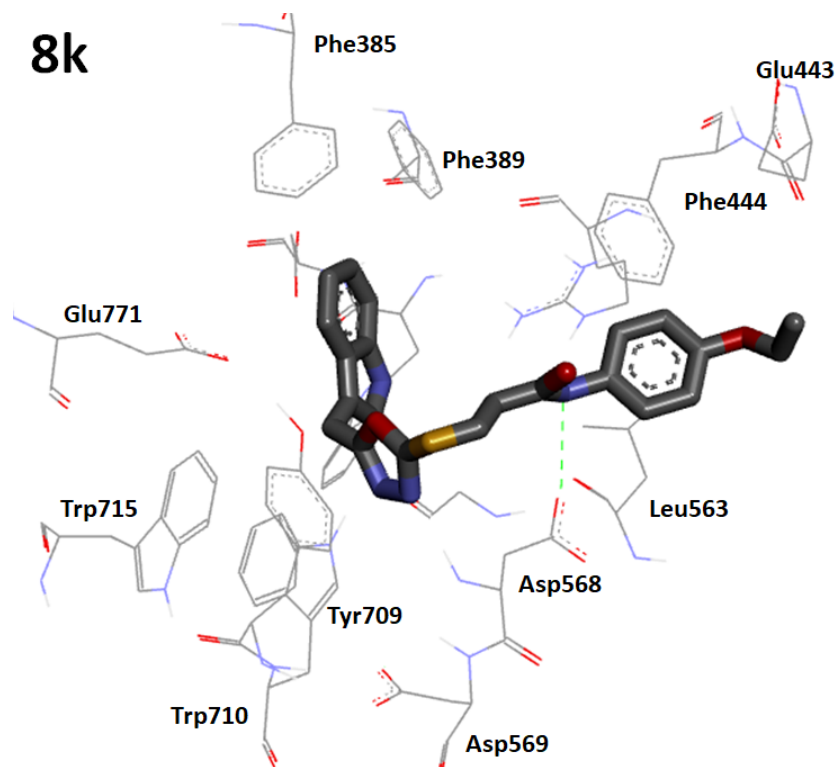
**Figure S15:** Docking of **8h** with  $\alpha$ -glucosidase.



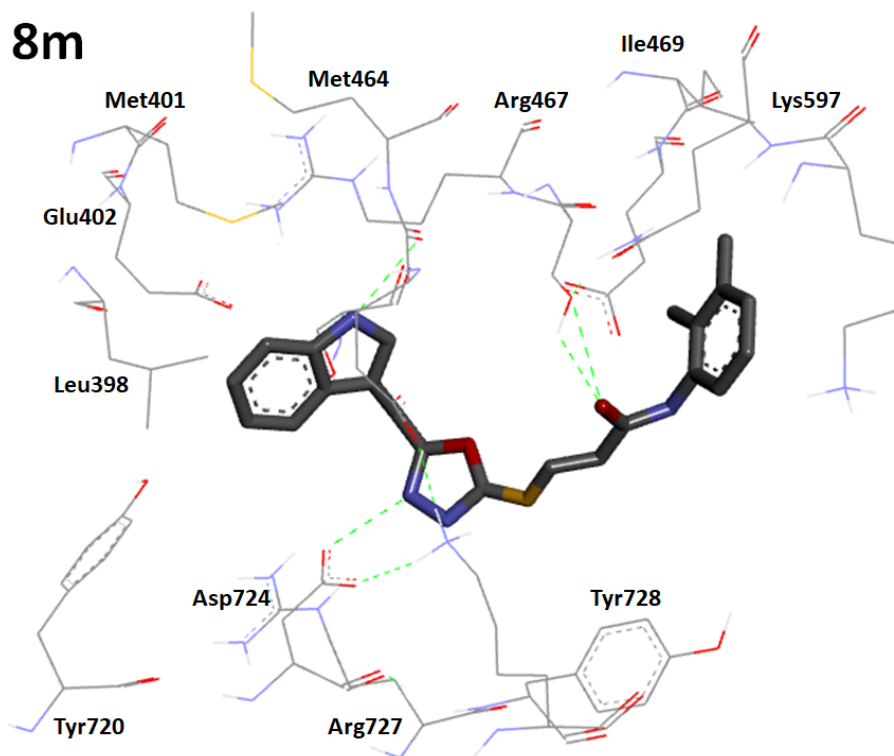
**Figure S16:** Docking of **8i** with  $\alpha$ -glucosidase.



**Figure S17:** Docking of **8j** with  $\alpha$ -glucosidase.

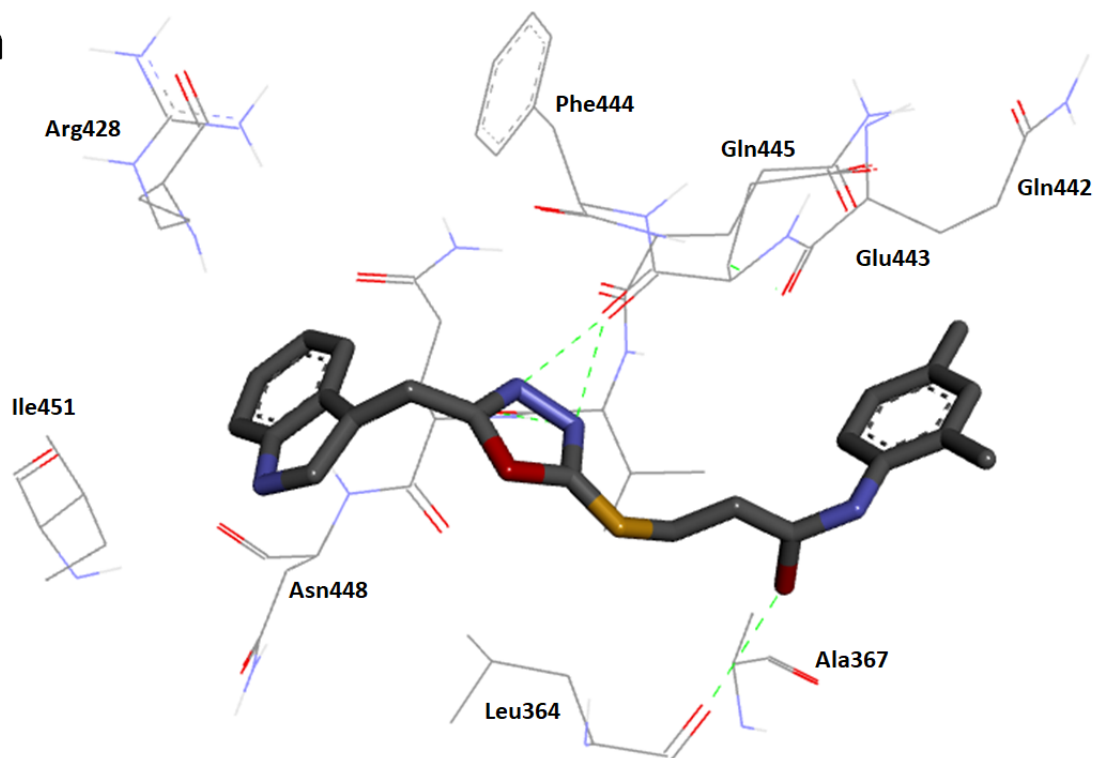


**Figure S18:** Docking of **8k** with  $\alpha$ -glucosidase.



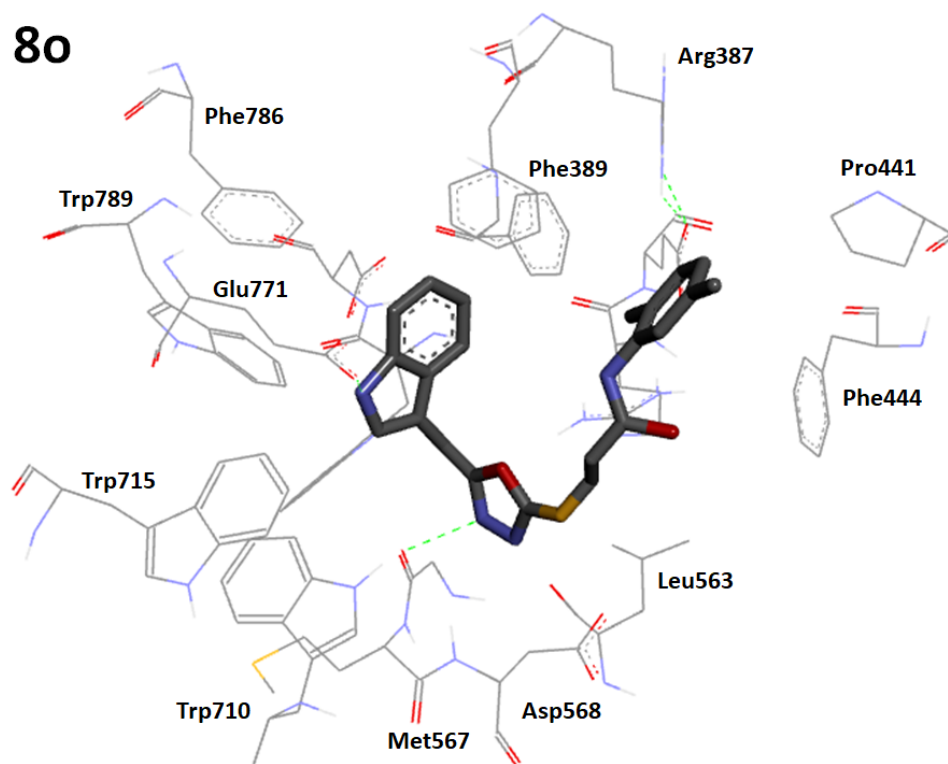
**Figure S19:** Docking of **8m** with  $\alpha$ -glucosidase.

**8n**

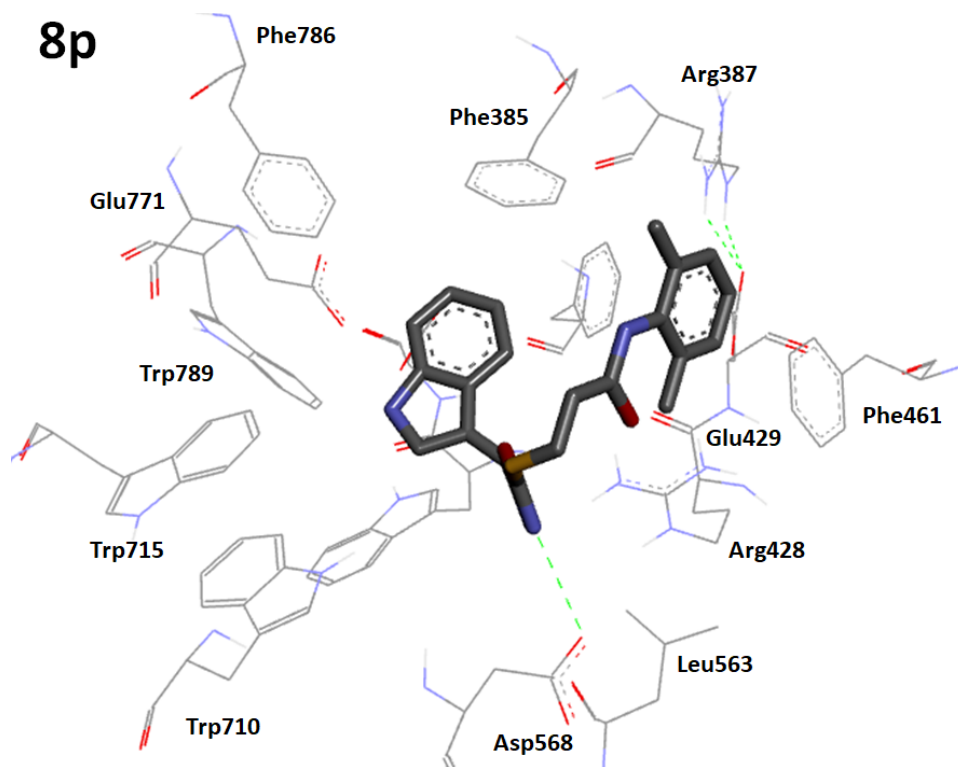


**Figure S20:** Docking of **8n** with  $\alpha$ -glucosidase.

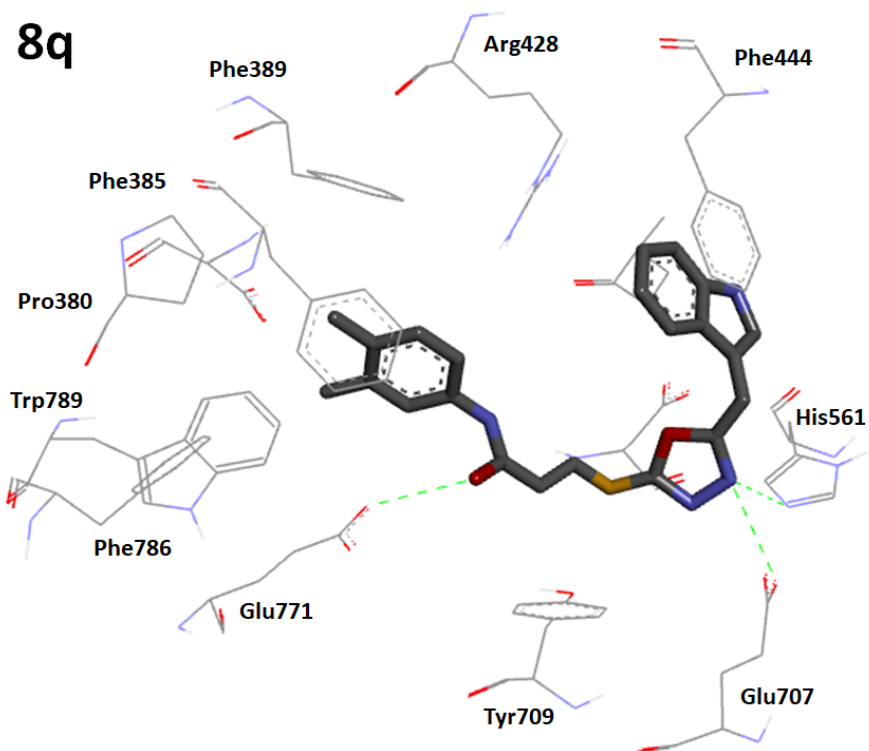
**8o**



**Figure S21:** Docking of **8o** with  $\alpha$ -glucosidase.



**Figure S22:** Docking of **8p** with  $\alpha$ -glucosidase.



**Figure S23:** Docking of **8q** with  $\alpha$ -glucosidase.



8r

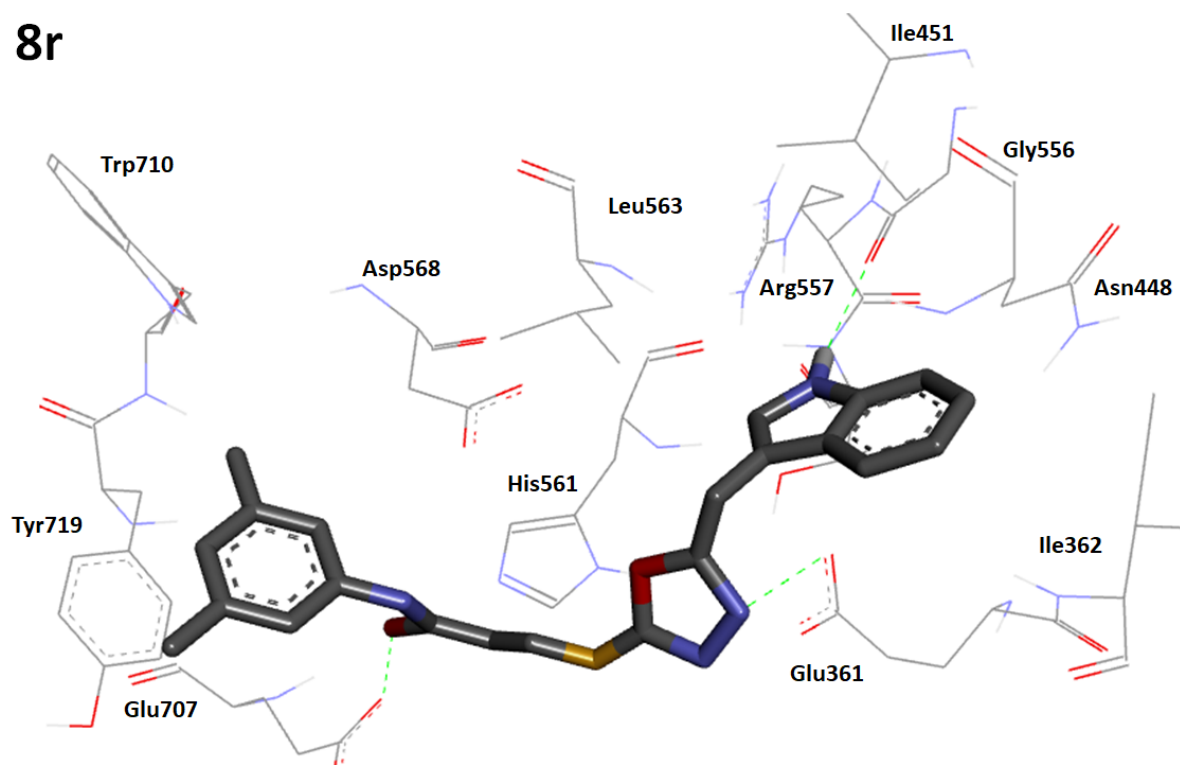


Figure S24: Docking of **8r** with  $\alpha$ -glucosidase.

8s

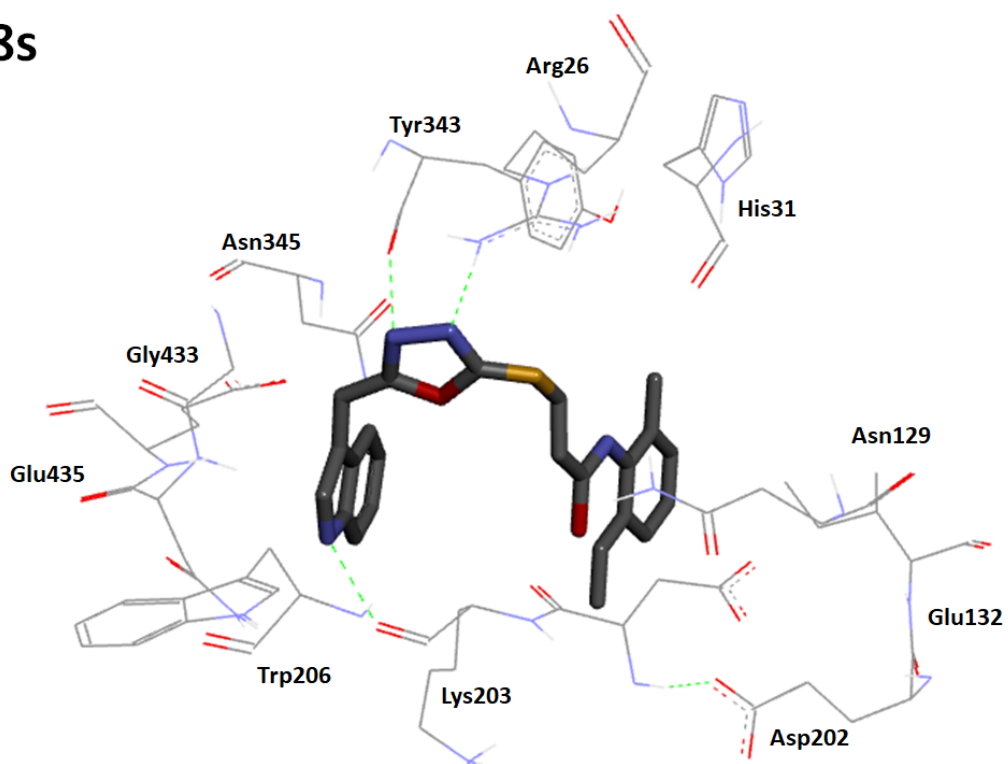


Figure S25: Docking of **8s** with  $\alpha$ -glucosidase.