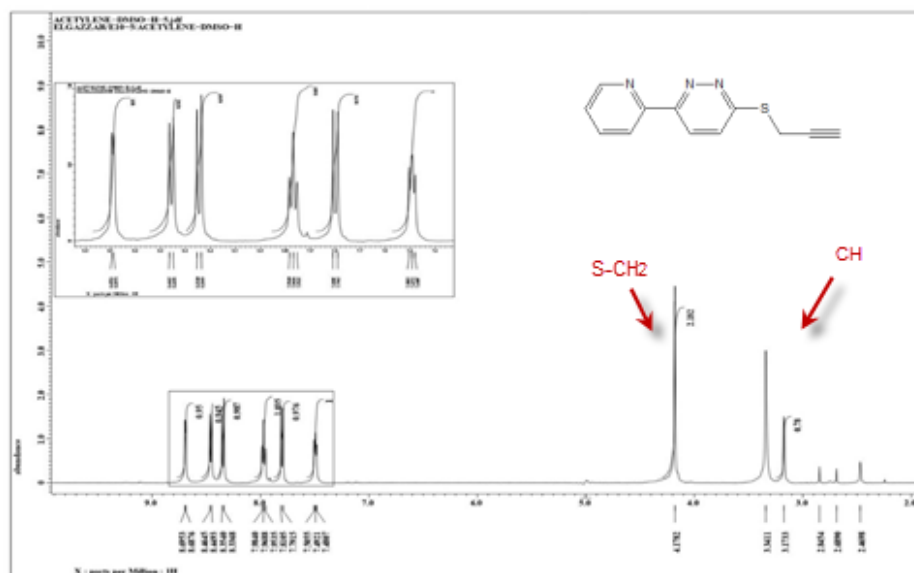
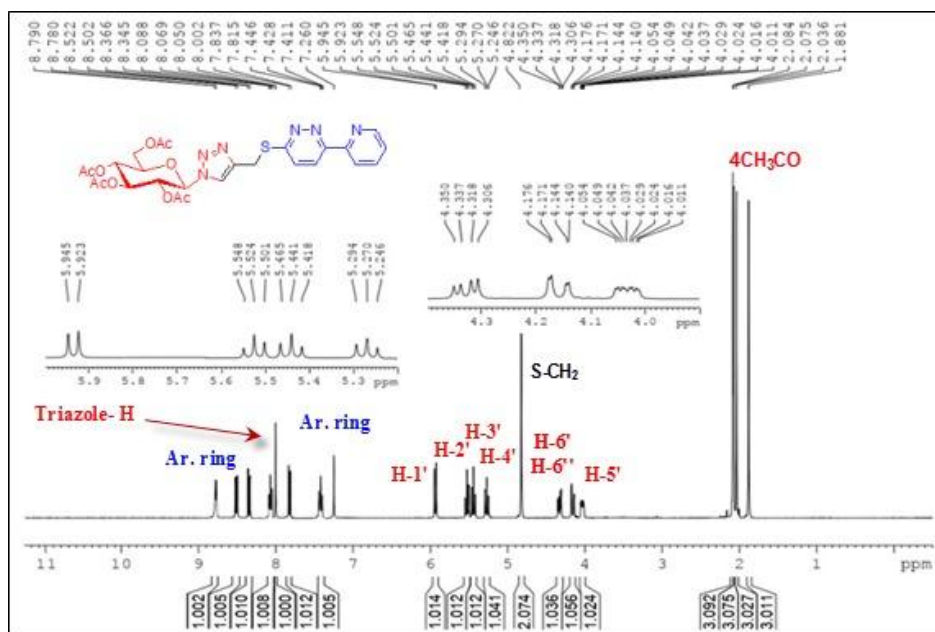


## **Supporting Information**

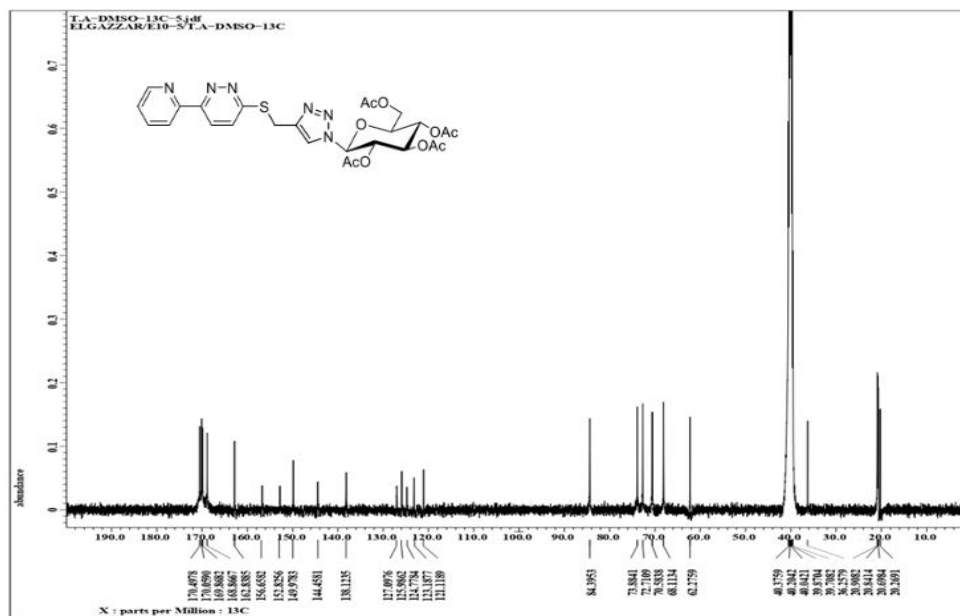
# **Novel Dual Acetyl- and Butyrylcholinesterase Inhibitors Based on the Pyridyl-Pyridazine Moiety for the Potential Treatment of Alzheimer's Disease**

## $^1\text{H}$ -NMR and $^{13}\text{C}$ -NMR of all compounds

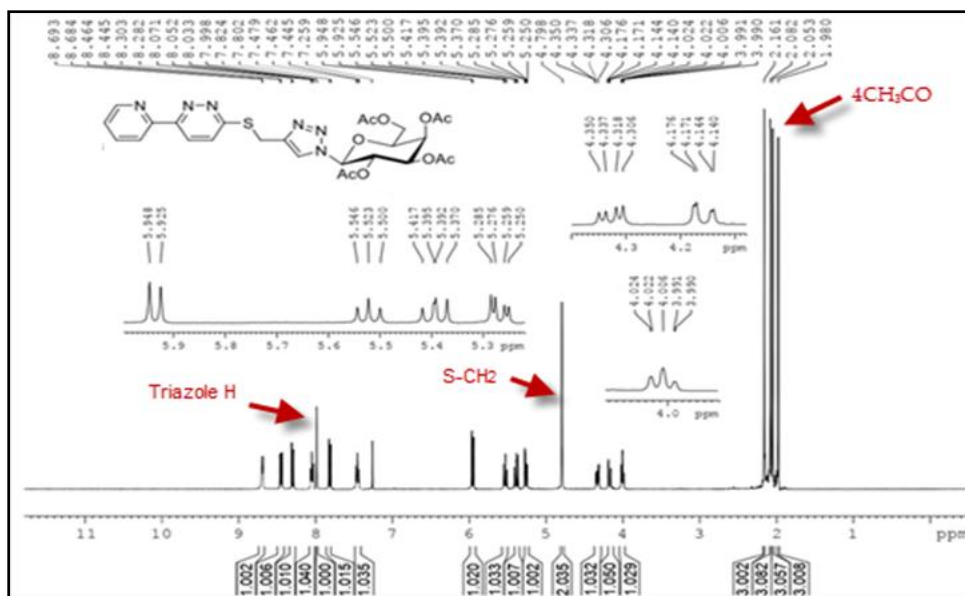




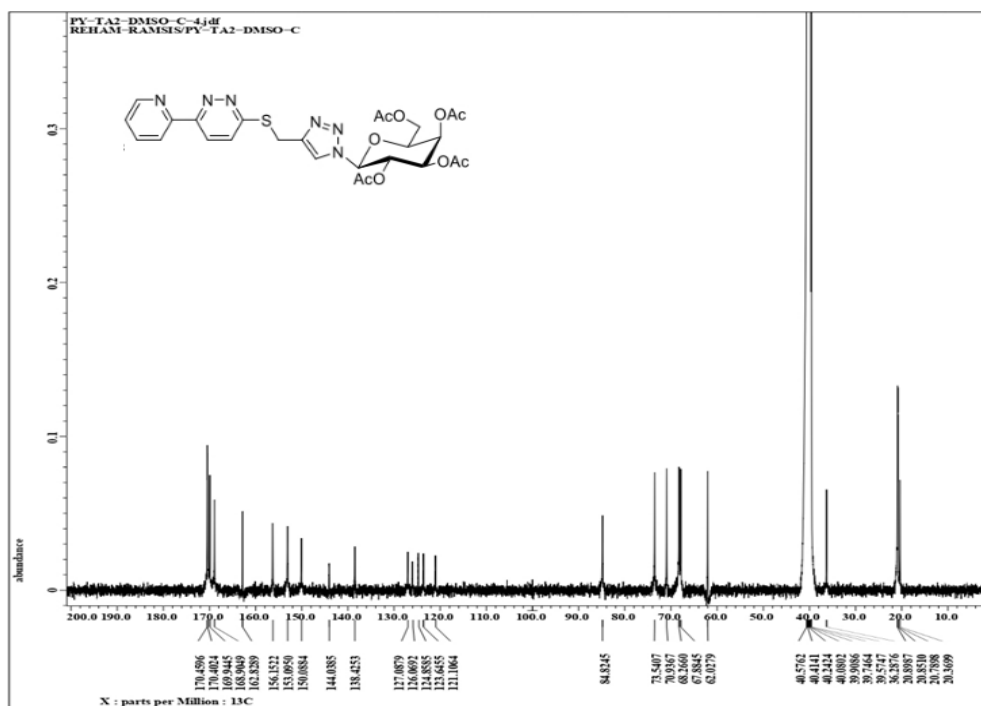
**Figure S3: <sup>1</sup>H-NMR of Compound 3**



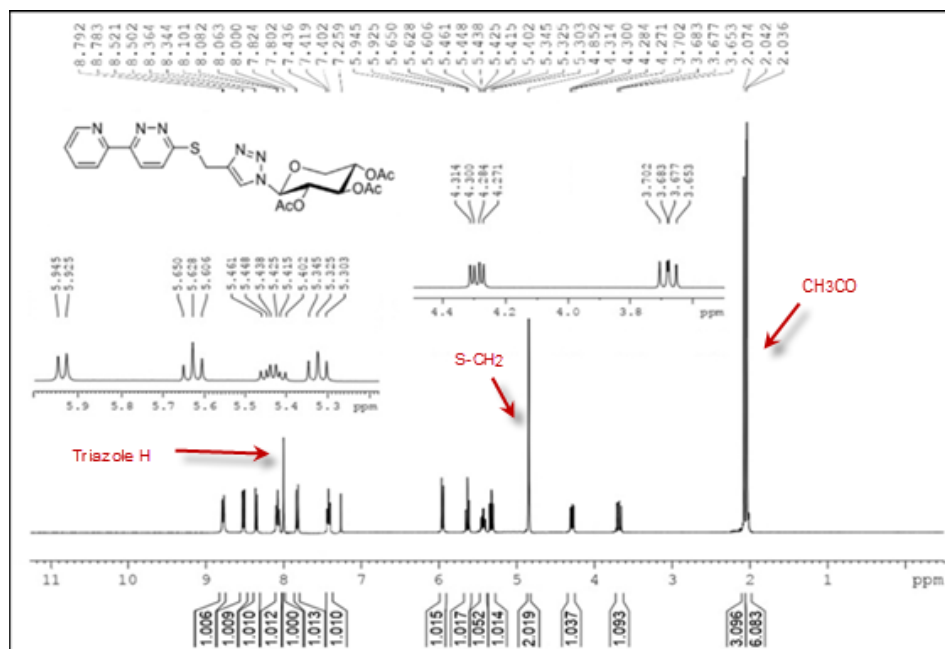
**Figure S4: <sup>13</sup>C-NMR of Compound 3**



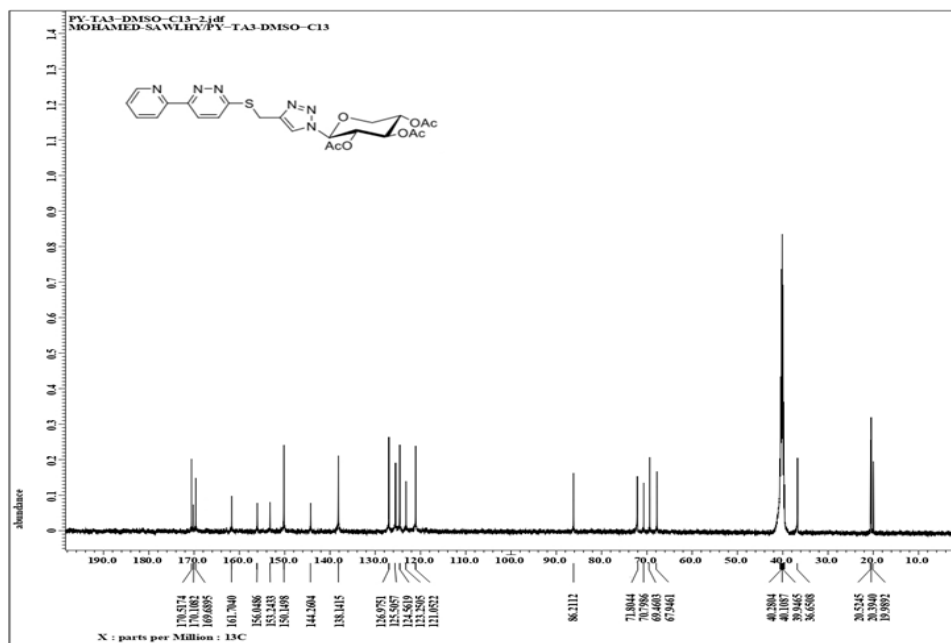
**Figure S5:** <sup>1</sup>H-NMR of Compound 4



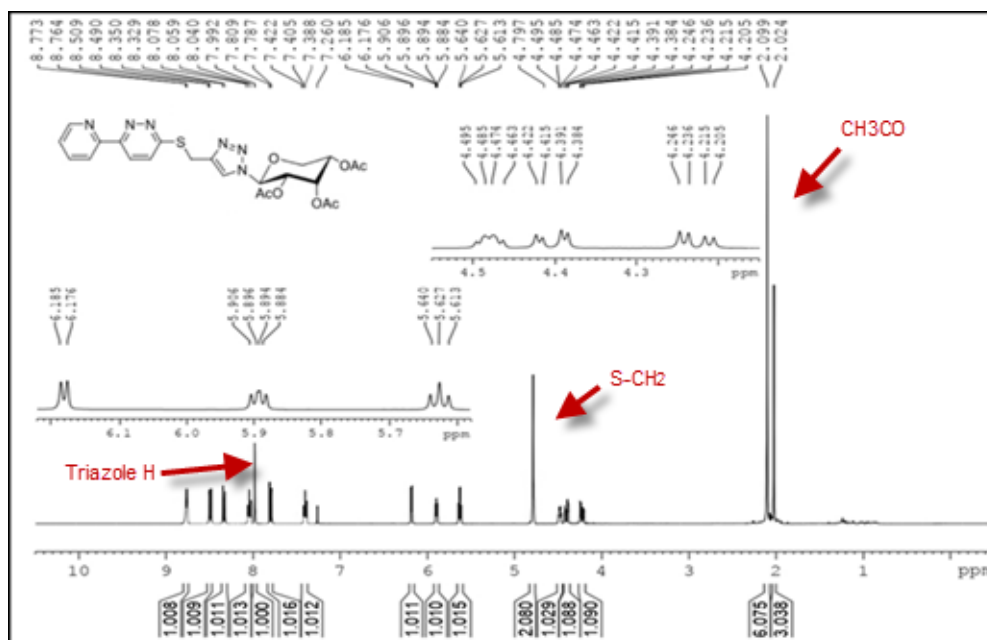
**Figure S6:** <sup>13</sup>C-NMR of Compound 4



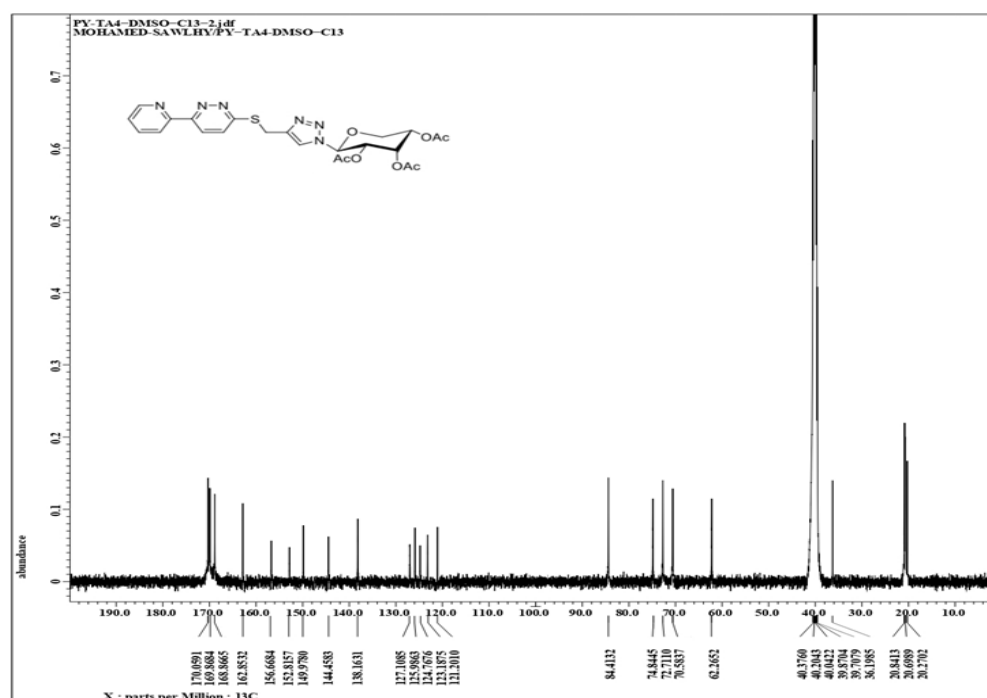
**Figure S7: <sup>1</sup>H-NMR of Compound 5**



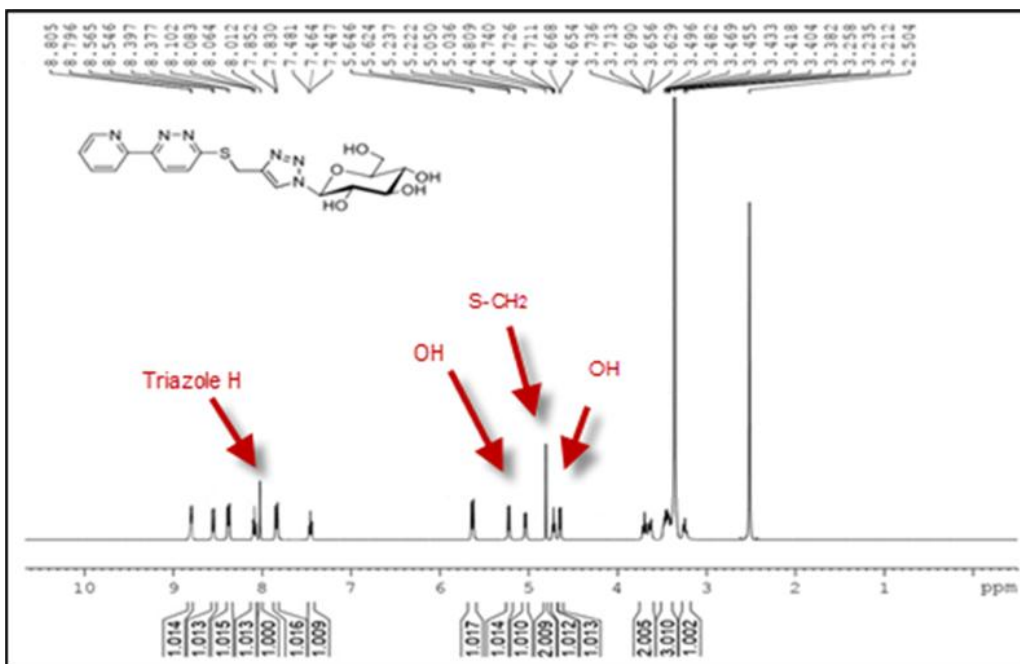
**Figure S8: <sup>13</sup>C-NMR of Compound 5**



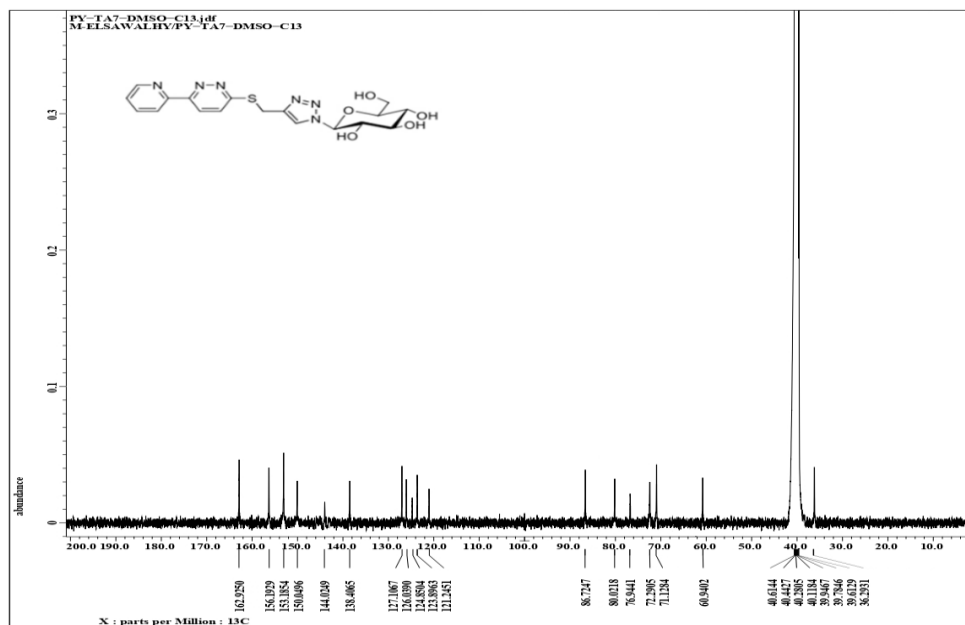
**Figure S9: <sup>1</sup>H-NMR of Compound 6**



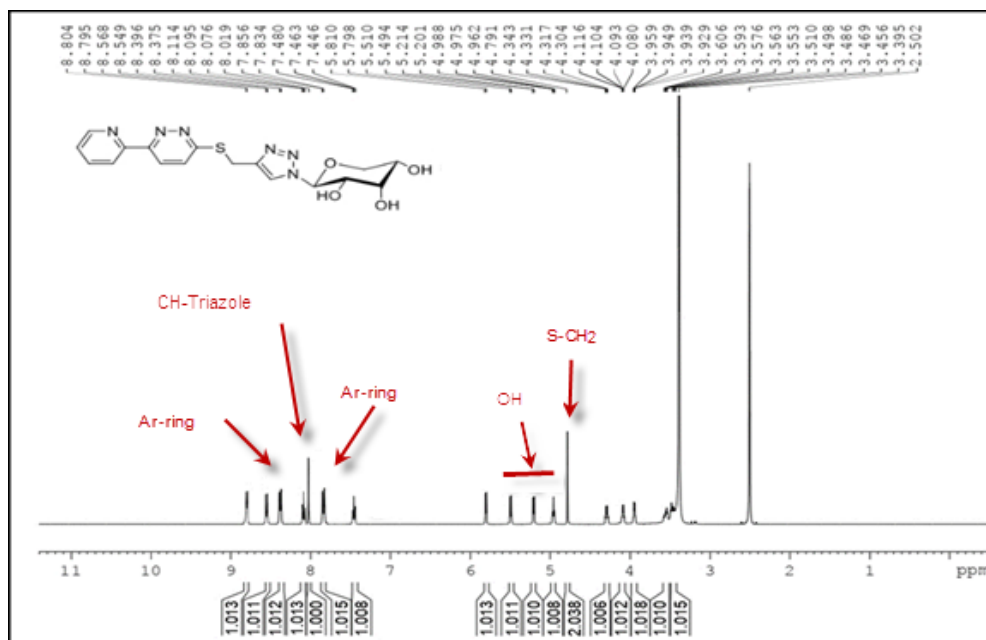
**Figure S10: <sup>13</sup>C-NMR of Compound 6**



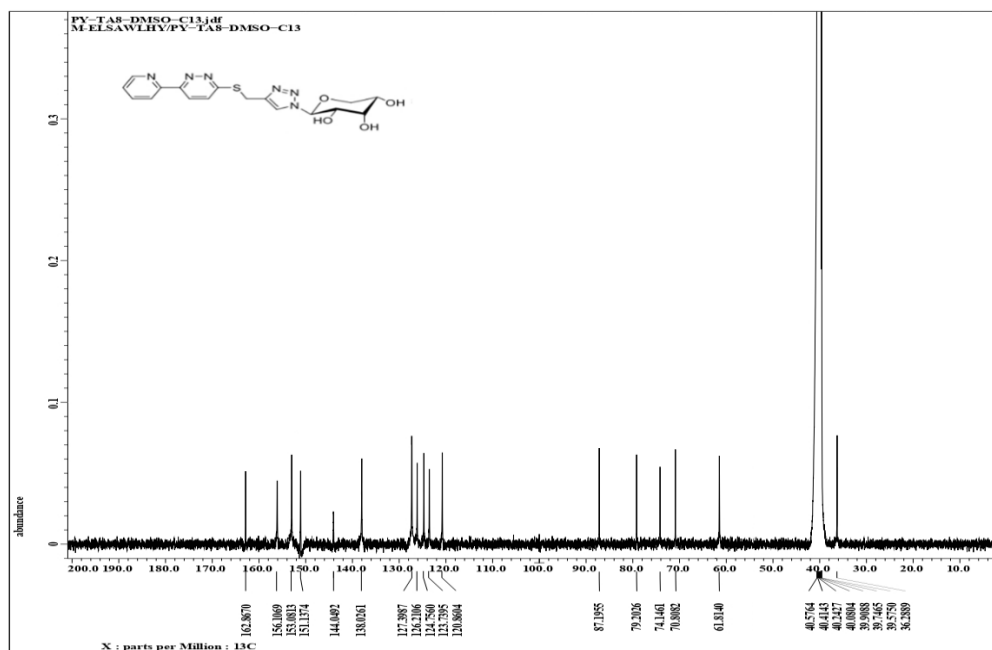
**Figure S11:** <sup>1</sup>H-NMR of Compound 7



**Figure S12:** <sup>13</sup>C-NMR of Compound 7

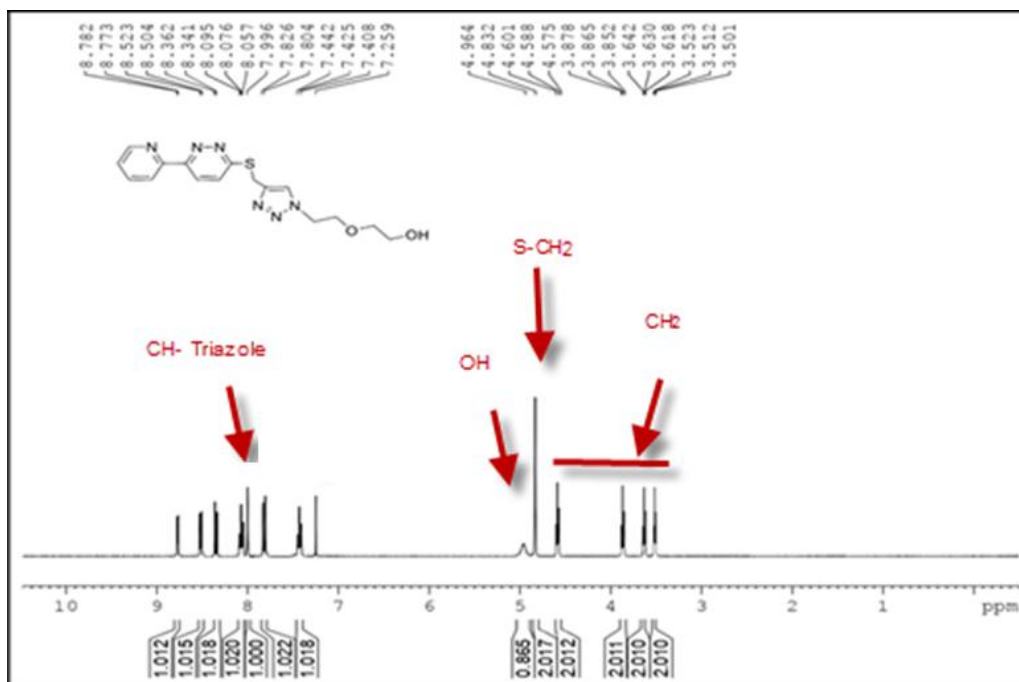


**Figure S13:** <sup>1</sup>H-NMR of Compound 8

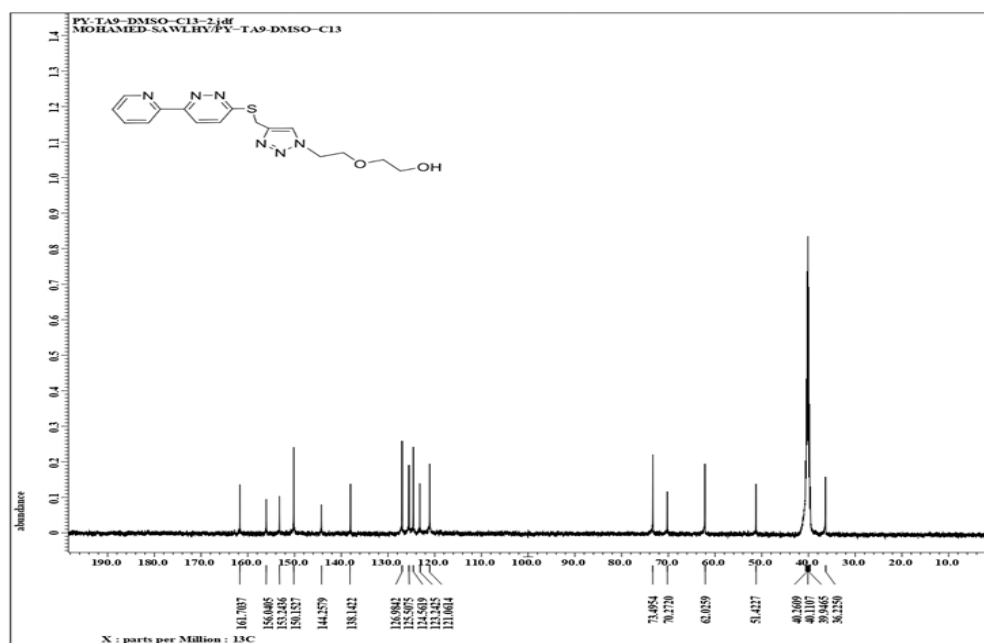


**Figure S14:** <sup>13</sup>C-NMR of Compound 8

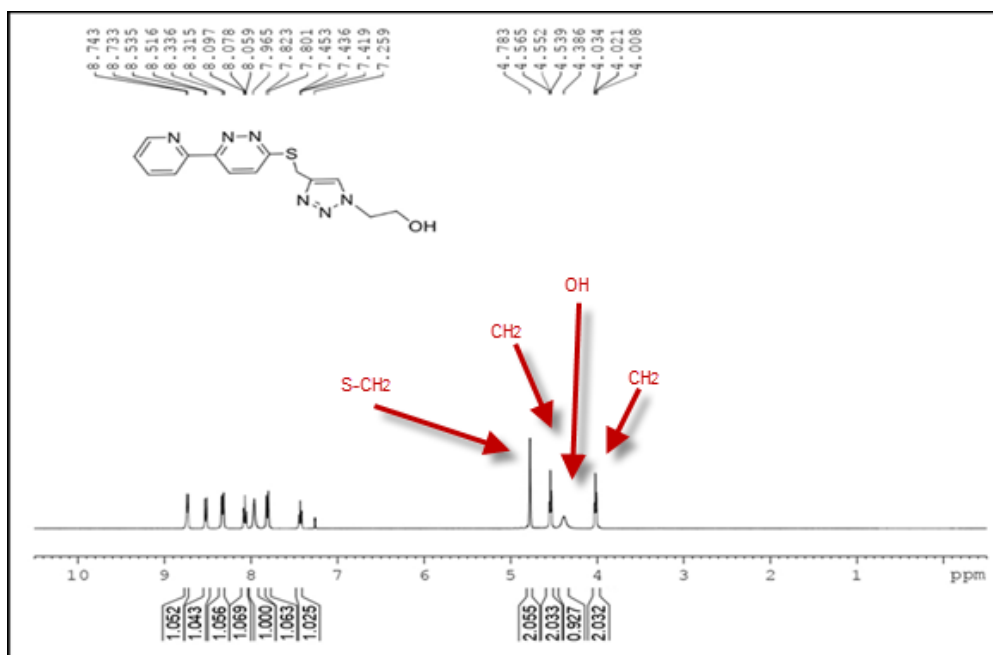




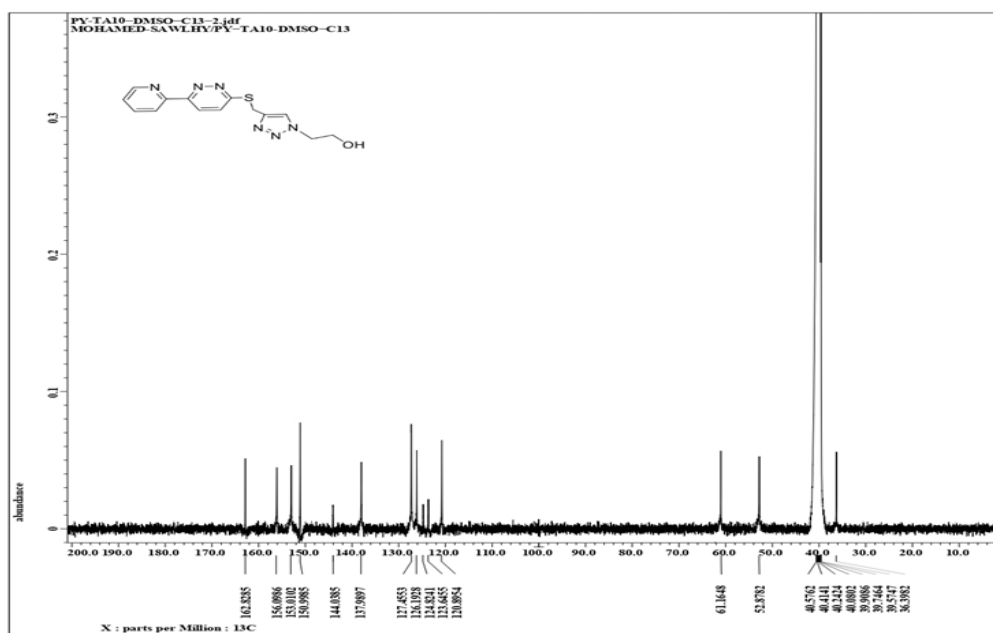
**Figure S15:** <sup>1</sup>H-NMR of Compound 9



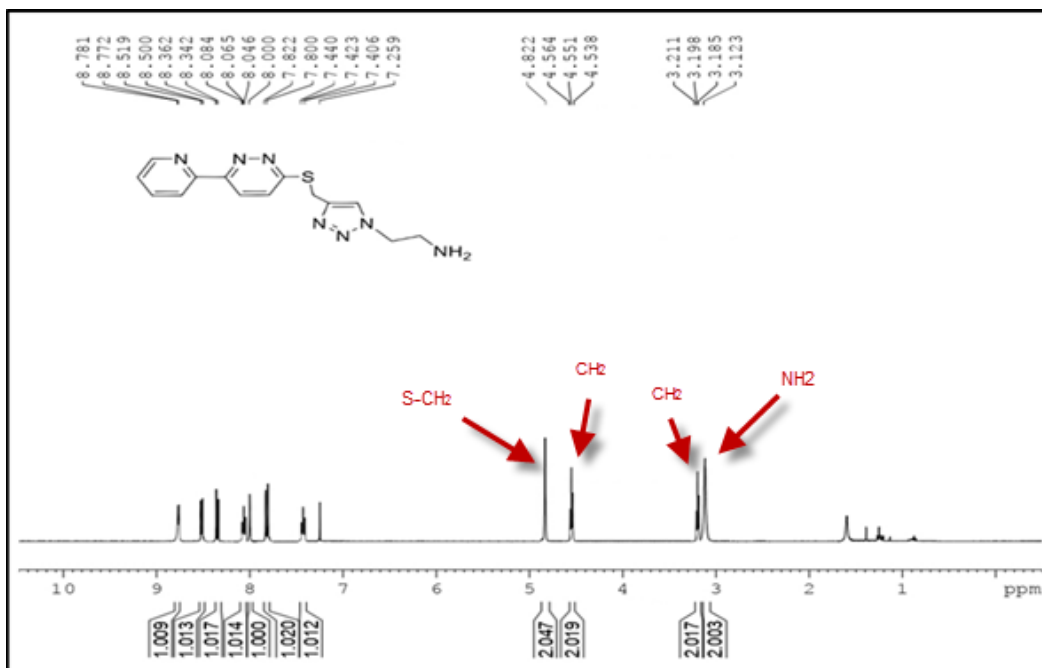
**Figure S16:** <sup>13</sup>C-NMR of Compound 9



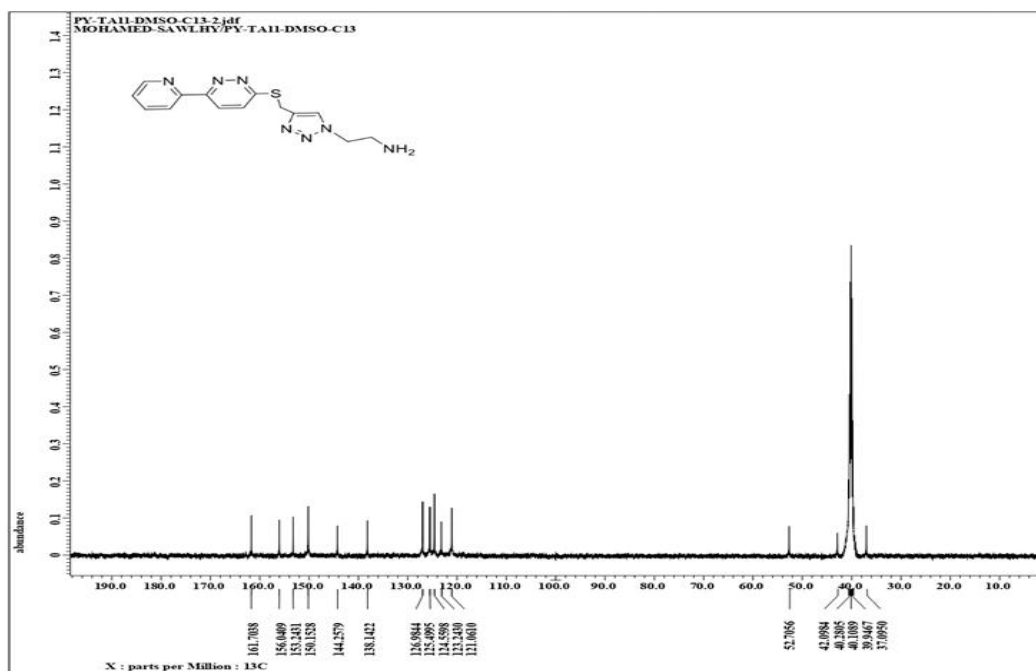
**Figure S17:** <sup>1</sup>H-NMR of Compound 10



**Figure S18:** <sup>13</sup>C-NMR of Compound 10



**Figure S19:** <sup>1</sup>H-NMR of Compound 11



**Figure S20:** <sup>13</sup>C-NMR of Compound 11

**Table S1.** AChE and BuChE inhibitory activities of synthesized compounds at 0.01, 0.1, 1.0, 10 and 100  $\mu\text{M}$ .

Compounds	% inhibition 0.01 $\mu\text{M}$ AChE(BuChE)	% inhibition 0.1 $\mu\text{M}$ AChE(BuChE)	% inhibition 1 $\mu\text{M}$ AChE(BuChE)	% inhibition 10 $\mu\text{M}$ AChE(BuChE)	% inhibition 100 $\mu\text{M}$ AChE(BuChE)
<b>1</b>	6.1(8.7)	23(19)	51(27)	74(54)	89(83)
<b>3</b>	7.4(25)	23(39)	43(61)	72(79)	88(93)
<b>4</b>	11(5.1)	29(11)	47(20)	71(41)	87(75)
<b>5</b>	42(25)	61(48)	71(67)	83(78)	94(91)
<b>6</b>	9(4.0)	29(8.1)	55(19)	73(33)	88(69)
<b>7</b>	14(7.8)	38(13)	62(23)	80(48)	92(79)
<b>8</b>	26(5.9)	43(13)	62(22)	88(55)	93(82)
<b>9</b>	35(22)	54(37)	70(56)	82(80)	92(93)
<b>10</b>	24(5.6)	40(13)	68(31)	83(51)	90(78)
<b>11</b>	7.5(−8.1)	26(7.5)	53(12)	76(33)	90(71)
<b>Donepezil</b>	45(16)	60(32)	72(65)	89(84)	95(94)
<b>Tacrine</b>	17(30)	35(48)	59(67)	81(84)	93(94)
<b>Rivastigmine</b>	6.9(0.7)	16(3.2)	30(7.0)	64(38)	87(80)