

Supplementary data. Interactions between amino acids of the active site of the biological target, distances where interactions occur and affinity energy

Inhibitors of β -secretase (Interactions No.)	Active Site Amino Acids	Atoms Involved	Type of Interaction	Distance (Å)	Affinity (Kcal/mol)	Ki (nM)	
CID_46888954 (6)	Gln73	H69 - OE1	Conventional H Bond	2.54	-10.7	1.0	
	Asp228	OD2 - ligand	Electrostatic	3.88			
	Thr231	HG1 - O11	Conventional H Bond	2.83			
	Arg235	HH22 - O10	Conventional H Bond Carbon H	2.03			
		HD2 - O8 NH1 - ligand	Bond Electrostatic	3.00 3.87			
CID_71457166 (5)	Thr72	HN - O4	Conventional H Bond	2.01	-10.5	2.0	
		H11 - OG1	Carbon H Bond	3.07			
	Phe108	O - F3	Halogen	3.37			
	Asp228	N9 - OD2	Electrostatic Electrostatic	4.35			4.96
		OD1 - ligand					
CID_66557874 (2)	Gln73	HE22 - O2	Conventional H Bond	2.34	-10.0	1.0	
	Asp228	H46 - OD2	Conventional H Bond	2.61			
CID_46888955 (6)	Asp32	H54 - OD2	Conventional H Bond	2.52	-10.0	1.0	
	Thr72	HN - O10	Conventional H Bond Carbon H	2.12			
		HB - F4	Bond	2.91			
	Gln73	HE21 - O7	Conventional H Bond	2.07			
		HE22 - O10	Conventional H Bond	2.77			
Asp228	H62 - OD2	Conventional H Bond	2.45				
CID_46888960 (9)	Asp32	HN - O5	Conventional H Bond Carbon H	2.13	-9.8	2.0	
		ligand - OG1	Bond	3.05			
	Thr72	HE21 - O7	Conventional H Bond	2.41			
		HE22 - N14	Conventional H Bond Carbon H	2.37			
		H30 - OE1	Bond	2.43			
	Gln73	S1 - PHE108	Other	5.74			
	Phe108	OD1 - ligand	Electrostatic	4.86			
	Thr231	HD1 - O8	Carbon H Bond	2.74			
NH2 - ligand		Electrostatic	3.91				

CID_46861889 (5)	Gln73	HE21 - N10	Conventional H Bond	2.25	-9.6	1.0
	Asp228	H12 - OD2	Carbon H Bond	2.49		
	Thr231	HA - O6	Carbon H Bond	2.83		
	Arg235	HH12 - O7	Conventional H Bond	2.01		
CID_46888956 (9)	Asp32	H12 - OD2	Carbon H Bond	2.30	-9.6	1.0
		H13 - OD1	Carbon H Bond	3.08		
	Gln73	HE22 - O7	Conventional H Bond	2.30		
	Asp228	H13 - OD1	Carbon H Bond	2.39		
		H17 - OD2	Carbon H Bond	3.05		
	Thr231	HG1 - O10	Conventional H Bond	2.03		
	Arg235	HH11 - O10	Conventional H Bond	2.63		
		HH12 - O9	Conventional H Bond	2.08		
NH1 – ligand		Electrostatic	3.52			
CID_46888962 (6)	Thr72	HN - N14	Conventional H Bond	2.41	-9.5	2.0
	Gln73	HE21 - O7	Conventional H Bond	2.67		
		HE22 - N11	Conventional H Bond Carbon H	2.91		
		H16 - OE1	Bond	2.38		
	Thr231	H53 - OG1	Conventional H Bond	2.73		
	Arg235	NH1 – ligand	Electrostatic	3.56		
CID_46888959 (5)	Thr72	HN - O8	Conventional H Bond	2.18	-9.4	1.0
	Phe108	PHE108 – ligand	Hydrophobic	5.10		
	Asp228	H23 - OD2	Carbon H Bond	2.56		
	Arg235	HD2 - O9	Carbon H Bond Electrostatic	3.06		
NH2 – ligand			3.82			
CID_71453665 (4)	Thr72	HN - O2	Conventional H Bond	2.22	-9.4	2.0
	Gln73	HE22 - O2	Conventional H Bond Carbon H	2.84		
		HE21 – ligand	Bond	2.51		
Asp228	H49 - OD2	Conventional H Bond	2.48			
CID_46861631 (3)	Gln73	HE21 - O7	Conventional H Bond Carbon H	2.60	-9.3	1.0
		H9 - OE1	Bond	2.49		
	Thr231	H56 - OG1	Conventional H Bond	2.79		
CID_46888961 (7)	Thr72	HN - O7	Conventional H Bond Carbon H	2.14	-9.3	1.0
		H23 - OG1	Bond	2.96		

	Phe108	HA - O8	Carbon H Bond	2.60		
	Thr231	HA - O6	Carbon H Bond	2.58		
		H13 - OG1	Carbon H Bond	2.91		
	Arg235	HD2 - O10	Carbon H Bond Electrostatic	2.90		
		NH2 – ligand		3.91		
CID_45105274 (6)	Thr72	HN - O7	Conventional H Bond	2.13	-9.3	0.8
	Gln73	H26 - OE1	Carbon H Bond	2.75		
	Arg235	HH12 - O6	Conventional H Bond	1.98		
		HH22 - O5	Conventional H Bond	2.27		
		HD2 - O8	Carbon H Bond	3.04		
		NH1 – ligand	Electrostatic	3.89		
CID_11700321 (4)	Asp32	H18 - OD2	Carbon H Bond	2.49	-9.2	1.0
	Asp228	H61 - OD1	Conventional H Bond	2.30		
		OD2 – ligand	Electrostatic	3.79		
	Arg235	HD1 - F3	Carbon H Bond	2.77		
CID_25066444 (4)	Gln73	HE22 - O6	Conventional H Bond	1.86	-9.2	2.0
	Phe108	H51 - F4	Carbon H Bond	2.19		
	Asp228	H51 - O6	Conventional H Bond	3.07		
	Arg235	NH2 – ligand	Electrostatic	3.89		
CID_24882306 (5)	Gln73	HE21 - O3	Conventional H Bond	2.70	-9.2	1.8
	Phe108	PHE108 – ligand	Hydrophobic	5.16		
	Arg235	HH12 - O5	Conventional H Bond	2.13		
		HH22 - O6	Conventional H Bond	2.12		
		NH1 – ligand	Electrostatic	4.04		
CID_71459034 (7)	Asp32	C27 - OD2	Carbon H Bond	2.92	-9.2	1.0
	Thr72	HB - F2	Carbon H Bond	2.52		
		C13 - OG1	Carbon H Bond	3.73		
	Gln73	OE1 - F2	Halogen	3.69		
	Asp228	OD2 – ligand	Electrostatic	4.62		
	Arg235	HD2 - O4	Carbon H Bond	2.83		
		NH2 – ligand	Electrostatic	4.04		
CID_46218828 (7)	Gln73	HE22 - N8	Conventional H Bond	2.73	-9.0	0.017
		H56 - OE1	Conventional H Bond	2.31		
	Phe108	PHE108 - C27	Hydrophobic	4.87		

	Asp228	H66 - N8	Conventional H Bond	2.93		
	Thr231	HB - O3	Carbon H Bond	2.42		
	Arg235	HH12 - O7	Conventional H Bond	2.01		
		NH1 – ligand	Electrostatic	3.84		
CID_71459108 (4)	Gln73	H67 - OE1	Conventional H Bond	2.54	-8.8	0.036
	Arg235	HD1 - O4	Carbon H Bond	2.92		
		NH1 - ligand	Electrostatic	3.82		
		NH2 – ligand	Electrostatic	4.77		
CID_46233612 (9)	Thr72	HB - O10	Carbon H Bond	3.00	-8.8	1.3
	Gln73	HE22 – ligand	Carbon H Bond	2.88		
	Phe108	H28 - O	Carbon H Bond	2.34		
		PHE108 – ligand	Hydrophobic	4.73		
	Asp228	OD2 – ligand	Electrostatic	3.89		
	Arg235	HH12 - O9	Conventional H Bond	2.68		
		HH21 - O11	Conventional H Bond	2.25		
		HH22 - F2	Conventional H Bond	2.45		
		NH2 – ligand	Electrostatic	3.32		
CID_16659019 (8)	Gln73	HE21 - O3	Conventional H Bond	2.31	-8.7	1.8
	Phe108	PHE108 - C23	Hydrophobic	5.12		
	Asp228	H15 - OD2	Carbon H Bond	2.38		
	Thr231	HG1 - O7	Conventional H Bond	2.21		
	Arg235	HH11 - O7	Conventional H Bond	2.21		
		HH22 - N15	Conventional H Bond	2.55		
		NH1 - ligand	Electrostatic Electrostatic	3.81		
		NH2 – ligand		3.54		
CID_25157025 (7)	Asp32	H28 - OD2	Carbon H Bond	2.92	-8.7	2.1
	Gln73	HE21 - O7	Conventional H Bond	2.63	2.90	
		HA - O12	Bond			
	Phe108	PHE108 - C28	Hydrophobic	4.79		
	Asp228	OD2 – ligand	Electrostatic	3.56		
	Thr231	HG1 - O5	Conventional H Bond	2.59		
	Arg235	NH1 – ligand	Electrostatic	3.83		
CID_6540293 (7)	Thr72	HG1 - O6	Conventional H Bond	2.29	-8.7	0.3
		H77 - OG1	Conventional H Bond	2.64		

	Gln73	HE21 - O5	Conventional H Bond	1.89		
		HE22 - N15	Conventional H Bond	3.06		
	Phe108	PHE108 - C33	Hydrophobic	4.40		
	Asp228	H66 - OD2	Conventional H Bond	2.43		
	Arg235	NH1 – ligand	Electrostatic	3.95		
CID_46888953 (2)	Thr231	HB - O8	Carbon H Bond	2.68	-8.5	3.0
	Arg235	HH12 - O7	Conventional H Bond	2.22		
CID_71457260 (3)	Gln73	H65 - OE1	Conventional H Bond	2.44	-8.5	0.4
	Thr231	HB - O6	Carbon H Bond	2.33		
	Arg235	NH1 – ligand	Electrostatic	3.51		
CID_71457261 (4)	Gln73	HE21 - O6	Conventional H Bond	2.36	-8.5	0.47
	Asp228	H69 - OD2	Conventional H Bond	2.54		
	Thr231	H63 - OG1	Conventional H Bond	2.80		
	Arg235	NH1 – ligand	Electrostatic	4.47		
CID_16659106 (3)	Phe108	108 - C29	Hydrophobic	3.93	-8.4	1.1
	Arg235	HH21 - O8	Conventional H Bond	2.67		
		HH22 - O7	Conventional H Bond	2.60		
CID_445649 (6)	Thr72	HN - O11	Conventional H Bond	2.18	-8.2	1.6
	Gln73	HE21 - O7	Conventional H Bond	2.34		
	Thr231	HG1 - O4	Conventional H Bond Carbon H	2.76		
		HA - O4	Bond	2.70		
	Arg235	HH11 - O3	Conventional H Bond Carbon H	2.90		
		HD1 - O4	Bond	2.52		
CID_44305868 (6)	Gln73	HE22 - O4	Conventional H Bond	1.84	-8.1	2.5
	Asp228	H72 - OD2	Conventional H Bond	2.31		
	Thr231	HG1 - O8	Conventional H Bond Carbon H	2.15		
		Ha - O7	Bond	2.74		
	Arg235	HH12 - O3	Conventional H Bond Carbon H	2.18		
		HD1 - O2	Bond	2.77		
CID_44394812 (7)	Thr72	HN - O6	Conventional H Bond	2.31	-8.1	0.32
	Gln73	HE21 - O5	Conventional H Bond	2.24		
		H103 - OE1	Conventional H Bond	2.82		
	Phe108	PHE108 - C52	Hydrophobic	4.93		
	Thr231	HG1 - O3	Conventional H Bond	2.73		

	Arg235	HH12 - O2	Conventional H Bond	2.34		
		HD1 - O4	Conventional H Bond	3.04		
CID_11498384 (6)	Thr72	HG1 - N15	Conventional H Bond	2.37	-7.9	0.12
	Gln73	HE21 - O3	Conventional H Bond	2.28		
		HE22 - O7	Conventional H Bond	2.18		
	Phe108	PHE108 - C25	Hydrophobic	5.26		
	Asp228	H66 - OD1	Conventional H Bond	2.48		
		H21 - OD2	Carbon H Bond	2.91		
CID_447068 (7)	Gln73	HE21 - O4	Conventional H Bond	2.30	-7.9	0.3
	Phe108	PHE108 - C42	Hydrophobic	4.72		
	Asp228	H42 - OD2	Carbon H Bond	2.35		
	Thr231	HG1 - O15	Conventional H Bond	1.91		
		HB - O1	Carbon H Bond	2.79		
	Arg235	HH11 - O15	Conventional H Bond	2.57		
		HH12 - O9	Conventional H Bond	2.69		
CID_44397092 (5)	Gln73	HE21 - O7	Conventional H Bond	1.95	-7.9	2.5
		HE22 - O4	Conventional H Bond	2.02		
	Phe108	PHE108 - C45	Hydrophobic	4.52		
	Asp228	H72 - OD2	Conventional H Bond	2.81		
	Arg235	HH12 - O3	Conventional H Bond	2.48		
CID_44397265 (7)	Thr72	HN - O2	Conventional H Bond	2.38	-7.9	1.6
		HB - O7	Carbon H Bond	2.74		
		H17 - OG1	Carbon H Bond	2.40		
	Gln73	H88 - OE1	Conventional H Bond	2.85		
	Phe108	PHE108 – ligand	Hydrophobic	5.17		
	Thr231	HA - O9	Carbon H Bond	2.86		
	Arg235	HH12 - O15	Conventional H Bond	2.71		
CID_44397266 (3)	Phe108	PHE108 – ligand	Hydrophobic	4.88	-7.9	0.3
	Thr231	HA - O4	Carbon H Bond	2.37		
	Arg235	HH11 - O3	Conventional H Bond	2.81		
CID_44446545 (6)	Gln73	HE21 - O5	Conventional H Bond	2.32	-7.8	0.12
	Phe108	PHE108 - C34	Hydrophobic	4.68		
	Asp228	H12 - OD2	Carbon H Bond	2.84		
	Thr231	HB - O4	Carbon H Bond	2.63		

	Arg235	HD1 - O9	Carbon H Bond	2.48		
		NH1 – ligand	Electrostatic	3.27		
CID_10212352 (5)	Gln73	HE22 - O4	Conventional H Bond	2.26	-7.7	2.5
	Phe108	PHE108 - C45	Hydrophobic	4.86		
		PHE108 - C43	Hydrophobic	4.90		
		PHE108 - C44	Hydrophobic	4.28		
	Arg235	HH12 - O3	Conventional H Bond	2.47		
CID_44582543 (6)	Phe108	PHE108 - C47	Hydrophobic	4.60	-7.7	0.8
		PHE108 - C45	Hydrophobic	5.02		
		PHE108 - C46	Hydrophobic	4.38		
	Asp228	H84 - OD2	Conventional H Bond	2.36		
	Thr231	HA - O6	Carbon H Bond	2.71		
	Arg235	HH12 - O4	Conventional H Bond	2.53		
CID_66575082 (2)	Asp32	H12 - OD2	Carbon H Bond	2.67	-7.6	1.7
	Phe108	PHE108 - C25	Hydrophobic	4.83		
CID_44305509 (7)	Gln73	HE21 - O3	Conventional H Bond	1.80	-7.3	0.32
		HE22 - O1	Conventional H Bond	2.41		
		04H1 - OE1	Conventional H Bond	2.63		
	Phe108	PHE108 - C31	Hydrophobic	4.74		
		PHE108 - C30	Hydrophobic	4.46		
	Thr231	H87 - OG1	Conventional H Bond	2.01		
	Arg235	HD2 - O4	Carbon H Bond	2.99		