

Table SI. List of various nuclear receptor mutations located in the ligand binding domain.				
A/A	Receptor	Mutation	Multiple sequence alignment position	PubMed ID of corresponding mutations
1.	GR	L773P, 2bp del CT, 2bp del TG	647	8316249 23076843 19933394
2.	GR	L753F	612	8316249
3.	GR	I747M	602	12050230
4.	GR	F737L	591	17635946
5.	GR	V729I	583	7683692
6.	GR	H726R	580	26031419
7.	GR	R714Q	567	20335448
8.	GR	G679S	522	11589680
9.	GR	L672P	515	27120390
10.	GR	D641V	484	1704018
11.	GR	612 1bp del	429	20861124
12.	GR	588 ins TTAC	405	27211791
13.	GR	V575G	392	24483153
14.	GR	V571A	388	11932321
15.	GR	I559N	376	8863343
16.	GR	T556I	373	21362280
17.	GR	Q501H	318	29444898
18.	AR	F917L	648	22334387
19.	AR	P914S	645	22334387
20.	AR	L908F	624	22334387
21.	AR	P905H/S	621	22334387
22.	AR	P893S	609	22334387
23.	AR	V890M	602	22334387
24.	AR	S889 del (no immunreactiv.)	601	22334387
25.	AR	T878A	589	11906285
26.	AR	H875Y	587	22334387
27.	AR	I870M	582	22334387
28.	AR	V867M/L	579	22334387
29.	AR	G821A	522	22334387
30.	AR	P818A	519	22334387
31.	AR	L813P	514	22334387
32.	AR	M808V/T/R	509	22334387
33.	AR	E804K	505	22334387
34.	AR	F795S	496	22334387
35.	AR	M788V	489	22334387
36.	AR	R787X	488	22334387
37.	AR	V786 2bp del	487	22334387
38.	AR	C785Y	486	22334387
39.	AR	Y782D	483	22334387
40.	AR	M781I	482	22334387

41.	AR	R775H/C	475	22334387
42.	AR	E773G	473	22334387
43.	AR	L769M	444	22334387
44.	AR	P767S	442	22334387
45.	AR	A766T	441	22334387
46.	AR	F765L	440	22334387
47.	AR	Y764C	439	22334387
48.	AR	F755L/V	430	22334387
49.	AR	R753Q/X	428	22334387
50.	AR	W752R/X	427	22334387
51.	AR	M750V	425	22334387
52.	AR	M746T	421	22334387
53.	AR	G744E/V	419	22334387
54.	AR	M743I/V	418	22334387
55.	AR	W742C	417	22334387
56.	AR	Y740D	415	22334387
57.	AR	D733Y	408	22334387
58.	AR	G725D/S	400	22334387
59.	AR	P724S	399	22334387
60.	AR	W719X	394	22334387
61.	AR	L713F	388	22334387
62.	AR	R711T	386	22334387
63.	AR	N706S	381	22334387
64.	AR	S704C/G	378	22334387
65.	AR	L702H	377	22334387
66.	AR	L701M	376	22334387
67.	AR	N693 del	368	22334387
68.	AR	G689X	364	22334387
69.	AR	V685I	360	22334387
70.	AR	I681N	356	22334387
71.	AR	L678P	353	22334387
72.	ER α	D538G	607	25838462
73.	ER α	Y537N/C/S	602	26122181
74.	ER α	L536P/R/Q	601	25838462 26122181 26183887
75.	ER α	P535H	600	26122181
76.	ER α	V534E	599	26122181
77.	ER α	K531E	596	15583021
78.	ER α	R503W	567	24398047
79.	ER α	S463P	524	26122181
80.	ER α	432del-437stop	493	15583021
81.	ER α	M427I/L429M	488/490	15475371
82.	ER α	G415V	471	15583021
83.	ER α	411fsh-418stop	472	16713253
84.	ER α	G400V	434	15583021
85.	ER α	M396V	430	16713253
86.	ER α	E380Q	414	26122181

87.	ER α	E353V	387	16713253
88.	ER α	344insCyst	378	26183887
89.	ER α	S309F	343	16713253
90.	ER α	K303R	337	26183887
91.	PPAR α	V227A	330	16288935
92.	PPAR γ	P467L	607	28208577
93.	PPAR γ	H449L	586	26756202
94.	PPAR γ	R397C	530	28208577
95.	PPAR γ	D396N	518	17766367
96.	PPAR γ	F360L	482	25004973
97.	PPAR γ	R357A/X	479	28208577 18713822
98.	PPAR γ	Y327X	423	6412238
99.	PPAR γ	K319X	414	10394368
100.	PPAR γ	312fs-315stop	407	18713822
101.	PPAR γ	L311X	406	23393388
102.	PPAR γ	V290M	385	28208577
103.	PPAR γ	Q286P	381	28208577
104.	PPAR γ	R280P	375	29622583
105.	RAR α	M413T	612	9694705
106.	RAR α	Q411X	610	1327285
107.	RAR α	R394W	589	9694705
108.	RAR α	M297L	475	9657734
109.	RAR α	L290V	442	9694705
110.	RAR α	R272Q	424	9657734
111.	RAR β	I403S fs*15	609	24075189
112.	RAR β	R387S/C	589	24075189
113.	THR α	E403K/X	611	25670821
114.	THR α	P398R/S	606	10022432 25670821
115.	THR α	F397fs-406X	605	27144938
116.	THR α	C392X	597	27144938
117.	THR α	V390A	595	22507269
118.	THR α	M388I	593	22507269
119.	THR α	R384H	589	27144938
120.	THR α	A382fs-388X	587	27144938
121.	THR α	C380fs-387X	585	27144938
122.	THR α	M369V	573	22507269
123.	THR α	N359Y	563	26303090
124.	THR α	Y352C	554	22507269
125.	THR α	E350K	551	22507269
126.	THR α	K337R	538	22507269
127.	THR α	S305P	495	22507269
128.	THR α	K288E/H	390	22507269
129.	THR α	S271I	433	22507269
130.	THR α	A264V	426	22507269
131.	THR α	A263S	425	27144938
132.	THR α	E245V	407	22507269

133.	THR α	A225T/G	387	22507269
134.	THR α	E213D	375	22507269
135.	THR α	Q187X	349	22507269
136.	THR α	H184Q	346	22507269
137.	THR α	S183N	345	22507269
138.	THR β	E460K	614	25905294
139.	THR β	F459C/L	613	19268523 20237409
140.	THR β	E457G	611	24722129
141.	THR β	L456S	610	22507269
142.	THR β	F455S	609	19299458
143.	THR β	L454fs-463, L454V	608	17596672 8990194
144.	THR β	P453H/A/L/T/S	607	2153155, 8040303, 19268523, 18561095
145.	THR β	P452ins, P452R	606	8040303 24722129
146.	THR β	F451S/I/L	605	27034829
147.	THR β	P447T	598	19268523
148.	THR β	C446R	597	22507269
149.	THR β	M442V/T	593	19378427
150.	THR β	L440P	591	19378427
151.	THR β	R438H/C/P	589	8040303 30027432
152.	THR β	H435L/Q/Y/R	586	11889175 11701737
153.	THR β	I431T/M	582	11889175 19268523
154.	THR β	R429Q/W	580	8040303 12006711
155.	THR β	D427G	577	22507269
156.	THR β	T426I	576	10660344
157.	THR β	F417L	567	22507269
158.	THR β	H412R	562	22507269
159.	THR β	K411E	561	22507269
160.	THR β	F403L	550	22507269
161.	THR β	A387P	534	27034829
162.	THR β	S380F	516	22507269
163.	THR β	M379T	515	22507269
164.	THR β	L373P	509	22507269
165.	THR β	S350L	486	24906004
166.	THR β	V349M	485	18363280
167.	THR β	V348E	484	8889584
168.	THR β	G347E/A	483	1661299 17827792
169.	THR β	L346F	482	19268523
170.	THR β	G345R/V/S	481	25905294

171.	THR β	G344E/A	478	19435825 21795843
172.	THR β	K342I	476	15886199
173.	THR β	L341P	475	19268523
174.	THR β	Q340H	474	23806029
175.	THR β	R338W/L	472	8514853 8040303
176.	THR β	Del337T	445	1653889
177.	THR β	A335P	443	19268523
178.	THR β	E333D	441	17177139
179.	THR β	G332R/E	440	8040303
180.	THR β	N331D	439	19268523
181.	THR β	L330S	438	10724359
182.	THR β	T329I	437	19820907
183.	THR β	T327A	435	19378427
184.	THR β	Y321C/H	429	11756220 8040303
185.	THR β	R320H/G	428	1314846 30027432
186.	THR β	A318D	426	11889175
187.	THR β	A317T/S	425	25738994 8889584
188.	THR β	R316H/C	424	8381821 22319036
189.	THR β	M313T/V	421	19268523 30027432
190.	THR β	E299K	407	22507269
191.	THR β	K289M	397	22507269
192.	THR β	I280S	388	22319036
193.	THR β	A279E	387	19378427
194.	THR β	I276L	384	21795843
195.	THR β	T273A	381	22507269
196.	THR β	A268G	376	19268523
197.	THR β	V264D	372	9092799
198.	THR β	Q252R	360	11756220
199.	THR β	I250T	358	19378427
200.	THR β	R243W	351	9141558
201.	THR β	Q235X	343	22507269
202.	THR β	A234T	342	26273722
203.	THR β	W219L	327	27034829
204.	LXR α	R415Q	580	27253448
205.	VDR	V346M	533	24246681
206.	VDR	E329K	505	24246681
207.	VDR	G319V	495	19169476
208.	VDR	Q317X	493	12468277
209.	VDR	I314S	490	8961271
210.	VDR	H305Q	481	24246681
211.	VDR	Y295X	445	24246681
212.	VDR	W286R	436	24246681

213.	VDR	R274L/H	424	24246681
214.	VDR	I268T	418	24246681
215.	VDR	L263R	413	24246681
216.	VDR	Q259P/E	409	19169476 24246681
217.	VDR	F251C	401	24246681
218.	VDR	K246(3bp deletion)	396	24246681
219.	VDR	L227P	377	24246681
220.	VDR	R158C	311	24246681
221.	VDR	Q152X	305	24246681
222.	VDR	T146I	299	24246681
223.	MR	L979P	646	12788847
224.	MR	E972G	624	16954160
225.	MR	I963fs994X	615	27725360
226.	MR	A958fs1013X	610	16954160
227.	MR	L924P	571	11134129
228.	MR	R861X	498	19344080
229.	MR	S818L	429	16954160
230.	MR	S815R	426	16972228
231.	MR	S810L	421	12538613
232.	MR	S805P	416	16972228
233.	MR	Q776R	387	12788847
234.	MR	N770K	381	16972228
235.	MR	L769P	380	16972228
236.	MR	P759S	370	16972228
237.	HNF4A	M364R	612	17407387
238.	HNF4A	R303H	543	17407387
239.	HNF4A	E276Q	515	10389854
240.	HNF4A	D206Y	408	17407387
241.	SF-1	L437Q	590	21078366
242.	SF-1	D380Y	518	21078366
243.	SF-1	V355M	493	21078366
244.	SF-1	D293N	408	21078366
245.	SF-1	W279X	394	21078366
246.	ROR α	R462Q	562	29656859
247.	ROR α	S409R	495	29656859
248.	ROR α	R340Pfs*17	397	29656859
249.	ROR α	Q315Lfs*51	373	29656859
250.	ROR β	Thr417del	580	27352968
251.	ROR γ	Q441X	541	26160376
252.	ROR γ	Q329X	389	26160376

Table SII. Mutations rates on different nuclear receptors based on the multiple alignment position.

Multiple sequence alignment position	Frequency of mutations (based on alignment position)	Receptor and mutation	PubMed ID of publications referencing corresponding mutation
624	3	AR L908F MR E972G HNF4 M364R	22334387 16954160 17407387
612	2	GR L753F RAR α M413T	8316249 11050004
611	2	THR α E403K/X THR β E457G	25670821 24722129
610	3	RAR α Q411X THR β L456S MR A958fs1013X	1327285 11756220 16954160
609	3	AR P839S RAR β 1403 fs*15 THR β F455S	22334387 24075189 19299458
607	3	ER α D538G PPAR γ P467L THR β P453H/A/L/T/S	25838462 18713822 2153155, 8040303, 19268523, 18561095
606	2	THR β P452ins, P452R THR α P398R/S	8040303, 24722129 10022432, 25670821
605	2	THR α F397fs-406X THR β F451S/I/L	27144938 11756220, 24722129
602	3	GR I747M AR V890M ER α Y537N/C/S	12050230 22334387 25838462
601	2	AR S889del ER α L536P/R/Q	22334387 25838462 26183887
597	2	THR α C392X THR β C446R	27144938 8175986
593	2	THR α M388I THR β M442V/T	11756220 19378427
591	2	GR F737L THR β L440P	17635946 19378427
589	5	AR T878A RAR α R394W RAR β R387S/C THR α R384H THR β R438H/C/P	11906285 9694705 24075189 27144938 8040303, 30027432
587	2	AR H875Y THR α A382fs388X	22334387 27144938
586	2	PPAR γ H449L	26756202

		THRβ H435L/Q/Y/R	11889175, 11701737
582	2	AR I870M THRβ I431T/M	22334387 11889175, 19268523
580	5	GR H726R THRβ R429Q/W LXRα R415Q RORβ THR417del	26031419 8040303, 12006711 27253448 27352968
567	3	GR R714Q ERα R503W THRβ F417L	20335448 24398047 11756220
562	2	THRβ H412R RORα R462Q	22507269 29656859
522	2	GR G679S AR G821A	11589680 22334387
518	2	PPARγ D396N SF-1 D380Y	17766367 21078366
515	3	GR L672P THRβ M379T HNF4 E276Q	27120390 11889175 10389854
509	2	AR M808V/T/R THRβ L373P	22334387 11889175
505	2	AR E804K VDR E329K	22334387 24818002
495	3	THRα S305P VDR G319V RORα S409R	11889175 19169476 29656859
493	3	ERα 432del-437X VDR Q317X SF-1 V355M	15583021 12468277 21078366
490	2	ERα M427I (+L429M) VDR I314S	15475371 8961271
488	2	AR R787X ERα M427I (+L429M)	22334387 15475371
486	2	AR C785Y THRβ S530R	22334387 24217081
484	2	GR D641V THRβ V348E	1704018 8889584
483	2	AR Y782D THRβ G347E/A	22334387 1661299, 17827792
482	3	AR M781I PPARγ F360L THRβ L346F	22334387 25004973 19268523
481	2	THRβ G345R/V/S VDR H305Q	25905294 24818002
475	3	AR R775H RARα M297L THRβ L341P	22334387 9657734 19268523
472	2	ERα 411fs418X THRβ R338W/L	16713253 8514853, 8040303

445	2	THR β del337T VDR Y295X	1653889 24818002
442	2	AR P767S RAR α L290V	22334387 9694705
441	2	AR A766T THR β E333D	22334387 17177139
440	2	AR F765L THR β G332R/E	22334387 8040303
439	2	AR Y764C THR β N331D	22334387 19268523
430	2	AR F755L/V ER α M396V	22334387 16713253
429	3	GR 612 1bp del THR β Y321C/H MR S818L	20861124 11756220, 8040303 16954160
428	2	THR β R320H/G AR R753Q/X	1314846, 30027432 22334387
426	3	THR α A264V THR β A318D MR S815R	16434963 11889175 16972228
425	3	AR M750V THR α A263S THR β A317T/S	22334387 27144938 25738994, 8889584
424	3	RAR α R272Q THR β R316H/C VDR R274L/H	9657734 8381821, 22319036 24818002
421	3	AR M764T THR β M313T/V MR S810L	22334387 19268523, 30027432 10884226
418	2	AR M743I/V VDR I268T	22334387 16059639
414	2	ER α E380Q PPAR γ K319X	25838462 10394368
408	3	AR D733Y HNF4 D206Y SF-1 D293N	22334387 17407387 21078366
407	3	PPAR γ 312fs315X THR α E245V THR β E299K	17011503 11889175 11756220
397	2	THR β K289M ROR α R340Pfs*17	22507269 29656859
394	2	AR W719X SF-1 W279X	22334387 21078366
388	3	GR V571A AR L713F THR β I280S	11932321 22334387 22319036
387	4	ER α E353V THR α A225T/G THR β A279E	16713253 22507269 19378427

		MR	Q776R	12788847
381	4	AR PPAR γ THR β MR	N706S Q286P T273A N770K	22334387 10394368 11889175 16972228
378	2	AR ER α	S704C/G 344insCyst	22334387 25838462
377	2	AR VDR	L702H L227P	22334387 26422470
376	3	GR AR THR β	I559N L701M A268G	8863343 22334387 19268523
375	2	PPAR γ THR α	R280P E213D	29622583 11889175
373	2	GR ROR α	T556I Q315Lfs*51	21362280 29656859
360	2	AR THR β	V685I Q252R	21362280 11756220
343	2	ER α THR β	S309F Q235X	16713253 11889175

Table SIII. List featuring all SHR ligands and their corresponding receptors.

Ligand/molecular formula/CID	Order no.	Receptor	Positions of Int	PDB IDs
8W8 C ₂₅ H ₂₁ F ₄ N ₃ O ₃ 24825740	1	GR	Asn564, Gln570,Gln642	5NFT
486 C ₂₉ H ₃₅ N O ₂ 55245	2	GR AncCor	Leu563, Leu566, Gln570, Arg611, Gln642, Cys736 Gln39, Arg80, Cys205, Tyr208	1NHZ,5UC3,3H52,5UC1, (4LTW)
DEX C ₂₂ H ₂₉ F O ₅ 5743	3	GR AncCor	Leu563, Asn564, Gln570, Arg611, Phe623, Gln642, Met646, Cys736, Thr739 Leu29, Asn33, Gln39, Arg80, Leu111, Cys205, Thr208	1M2Z, 3NE, 3MNO, 3MNP, 3GN8
NN7 C ₂₅ H ₂₇ F N ₄ O ₂ S 16666386	4	GR	Asn564, Gln570, Met604, Leu608, Phe623, Cys736	4CSJ
GW6 C ₂₇ H ₂₉ F ₃ O ₆ S 9854489	5	GR	Asn564, Arg611, Cys736	3CLD
866 C ₂₃ H ₂₁ Cl ₂ F ₄ N ₅ O ₃ 25058139	6	GR	Asn564, Gln570, Met604, Gln642, Cys736	3E7C
LSJ C ₂₅ H ₂₅ N O ₄ S 72710581	7	GR	Met560, Asn564, Cys736, Thr739	4LSJ
29M C ₂₈ H ₃₂ F N ₃ O ₃ S 86280440	8	GR	Met560, Leu563, Asn564, Cys736	4MDD
HCY C ₂₁ H ₃₀ O ₅ 5754	9	GR	Asn564, Gln570, Arg611, Thr739	4P6X
DAY C ₃₀ H ₃₆ N ₂ O ₄ 3032474	10	GR	Met560, Asn564, Phe623, Gln642	3BQD
MOF C ₂₇ H ₃₀ Cl ₂ O ₆ 441336	11	GR AncCor PR	Asn564, Gln570, Arg611, Cys736 Asn33, Gln39, Arg80 Asn719, Cys891	4P6W, 4E2J, 1SR7
1TA C ₂₄ H ₃₁ F O ₆ 6436	12	AncCor	Leu29, Asn33, Gln39, Thr208	5UFS
1CA C ₂₁ H ₃₀ O ₃ 6166	13	AncCor	Asn33, Gln39, Arg80, Cys205, Thr208	3RY9, 2Q3Y, 4FNE, 2ABI

			MR	Asn770, Gln776, Cys942, Thr945	
AS4 5839	C ₂₁ H ₂₈ O ₅	14	AncCor	Asn33, Gln39, Arg80, Cys205, Thr208	2Q1H, 2AA2
			MR	Asn770, Gln776, Cys942, Thr945	
SNL 5833	C ₂₄ H ₃₂ O ₄ S	15	MR	Asn770, Gln776, Arg817	3VHU
WFF 72163477	C ₁₈ H ₁₁ F ₂ N O ₄	16	MR	Asn770, Cys849, Thr945	3WFF
LD1 54751696	C ₁₈ H ₁₃ N ₅ O ₂ S	17	MR	Leu769, Asn770, Met807, Ser811, Met845, Thr945 Ala844, Leu848	3VHV
LD2 54751697	C ₁₈ H ₁₅ N ₅ O ₂ S				
30X 11326074	C ₁₅ H ₁₅ F ₆ N ₃ O	18	PR	Leu715, Met756, Arg766, Cys891	3G8O
NDR 6230	C ₂₀ H ₂₆ O ₂	19	PR	Cys891	1SQN
R18 261000	C ₁₉ H ₂₄ O ₂	20	PR	Asn719, Gln725, Arg766, Cys891	1E3K, 1XOW, 1E3G
			AR	Asn705, Arg752, Thr877	
STR 5994	C ₂₁ H ₃₀ O ₂	21	PR	Asn719, Gln725, Arg766, Cys891	(4LTW), 1A28
WOW 16661548	C ₂₀ H ₂₂ Cl N ₃ O ₂ S	22	PR	Arg766, Cys891, Thr894	3KBA
2S0 130904	C ₃₀ H ₃₇ N O ₄	23	PR	Gln725, Arg766, Cys891, Thr894	4OAR
RLL 51346204	C ₂₃ H ₁₆ F ₃ N ₃ O ₃	24	AR	Leu704, Asn705, Trp741, Arg752	3RLL
DHT 10635	C ₁₉ H ₃₀ O ₂	25	AR	Asn705, Gln711, Glu793, Thr877	5JJM(a+b), 3L3X, 2Z4J, 1T5Z, 1I38, 4K7A, 4OEA, 1XJ7, 1T73
CA4 9880	C ₂₄ H ₂₉ Cl O ₄	26	AR	Asn705, Gln711	2OZ7
77U 59370500	C ₁₃ H ₁₅ Cl N ₂ O	27	AR	Asn705, Gln711, Met745, Arg752, Thr877	5T8E
TES 6013	C ₁₉ H ₂₈ O ₂	28	AR	Asn705, Thr877	2Q7K, 2AM9
9FG 132471744	C ₁₂ H ₉ F N ₂ O	29	AR	Gln711, Met745	5VO4
RLJ 11326715	C ₁₉ H ₁₄ F ₃ N ₃ O ₃	30	AR	Leu704, Asn705, Gln711, Met745, Thr877, Met895	3RLJ
HFT 91649	C ₁₁ H ₁₁ F ₃ N ₂ O ₄	31	AR	Leu704, Asn705, Met895	4OGH, 2AX6

LGD 11560224	C ₁₄ H ₉ F ₉ N ₂ O	32	AR	Asn705, Gln711, Arg752	2HVC
MXD 4201	C ₉ H ₁₅ N ₅ O	33	AR	Asn705, Thr877	4K7A
JAD 71239417	C ₁₅ H ₁₆ Cl N ₃ O ₂	34	AR	Asn705, Met745, Arg752, Thr877	4QL8
BHM 5287785	C ₁₁ H ₁₀ Br F ₃ N ₂ O ₄	35	AR	Leu704, Asn705, Thr877	2AX9
ZK5 31378	C ₂₁ H ₂₉ F O ₅	36	AR	Asn705, Gln711, Arg752 (+++mutations His701, Ala877)	1GS4
51Y 71543393	C ₁₄ H ₁₇ Cl N ₂ O	37	AR	Asn704, Gln711, Met745, Arg752	5CJ6
97A 59556974	C ₁₄ H ₁₃ F ₃ N ₂ O ₂	38	AR	Asn704, Thr877	5V8Q
198 56069	C ₁₈ H ₁₄ F ₄ N ₂ O ₄ S	39	AR	Leu704, Asn705, Gly708, Gln711, Met742, Arg752, Thr877	4OJB, 1Z95
FHM 5288215	C ₁₇ H ₁₄ F ₄ N ₂ O ₅	40	AR	Leu704, Asn705	2AX8
EST 5757	C ₁₈ H ₂₄ O ₂	41	ER α ER β	Met343, Glu353, His524 His475	1PCG, 1QKT, 5DXG, 6CBZ (a+b), 2OCF, 5DX3(a+b), 5HYR, 5GS4, 5DXB, 1ERE, 1G50, 4PXM, 1GWR, 1QKU, 1A52, 3OLL
77W 118166742	C ₂₅ H ₂₂ F N O ₃	42	ER α	-	5T92
KE9 86287635	C ₂₅ H ₂₅ F ₃ N ₂ O ₂	43	ER α	Leu346, Met421, Val533	5ACC
GW5 5288494	C ₂₅ H ₂₂ O ₂	44	ER α	-	5AAV(a+b)
9XY 10090750	C ₂₅ H ₂₇ N O ₂	45	ER α	Thr347, Asp351, Val533	5W9D
GQD 127034153	C ₂₃ H ₂₇ N O ₃	46	ER α	Met421, Val533, Val534	5FQP
PTI 448915	C ₂₈ H ₃₂ N ₂ O ₂	47	ER α	Asp351	1UOM
F3D 134519316	C ₃₁ H ₃₆ N ₄ O ₂	48	ER α	Asp351, Glu353, Leu387, Arg394, Cys530	6CHW, 6CHZ
XBR 91936962	C ₂₀ H ₁₉ Cl N ₂ O ₂	49	ER α	Gly521, Val533	5AAU
EEU 11614456	C ₃₅ H ₄₁ N ₃ O ₁₀	50	ER α	Glu423	2YAT
85Z	C ₂₆ H ₁₉ F O ₅	51	ER α	Phe404, Val534	5AK2

91668558					
2OH 6623	C ₁₅ H ₁₆ O ₂	52	ER α	-	3UU7(a+b)
Q97 46205471	C ₂₄ H ₂₄ O ₃	53	ER α	-	5T1Z
27J 2999413	C ₁₈ H ₂₆ O ₅	54	ER α	Glu353, His524	4MG8
689 6857699	C ₁₈ H ₂₄ O ₃	55	ER α	Met421, His524	1ZKY
27E 299	C ₁₀ Cl ₁₀ O	56	ER α	Met343, Leu346, Met421	4MG5
0CZ 73864	C ₁₅ H ₁₀ F ₆ O ₂	57	ER α	Glu353	3UUA(a+b)
GEN 5280961	C ₁₅ H ₁₀ O ₅	58	ER α	His524	2QA8(a+b), 1QKM
			ER β	Met336, His475	
J3Z 5870	C ₁₈ H ₂₂ O ₂	59	ER α	Glu353, Gly521	3HM1
ESL 5756	C ₁₈ H ₂₄ O ₃	60	ER α	Glu353, Met421, His524	3Q95(a+b)
RAL 5035	C ₂₈ H ₂₇ N O ₄ S	61	ER α	Asp351, Glu353, Lys362, Val533, Glu542	1ERR, 2QXS, 2JFA_b
ZTW 445920	C ₁₄ H ₁₀ O ₂ S	62	ER α	-	1GWQ
0D1 84677	C ₁₄ H ₁₀ Cl ₂ O ₂	63	ER α	-	3UUC
1GM 135566804	C ₁₆ H ₁₃ F ₃ N ₂ O ₂	64	ER α	Leu346	4IU7
OHT 449459	C ₂₆ H ₂₉ N O ₂	65	ER α	Asp351, Val533	2BJ4, 4Q50, 2FSZ
			ER β	Asp303, Gln327	
OBH 51006494	C ₂₄ H ₂₂ O ₆ S	66	ER α	Glu353, Gly521	4ZN9
IOG 16750039	C ₃₃ H ₃₉ N ₃ O ₃	67	ER α	Asp351, Glu353, Gly521, Cys530, Lys531	2IOG
E4D 448577	C ₂₇ H ₂₉ N O ₄ S	68	ER α	Asp351, Glu353, Leu387, Cys530	1SJ0
5CQ 50940842	C ₁₇ H ₂₄ O ₂	69	ER α	Met343, His524	5DI7
J2Z 115116	C ₁₈ H ₂₂ O ₃	70	ER α	Met421, Gly521	3HLV
STL 445154	C ₁₄ H ₁₂ O ₃	71	ER α	Glu353, Arg394	4PP6
0L8 11588238	C ₁₇ H ₁₃ Br O ₃	72	ER α	Met343, His524, Leu525	4DMA
IOK 16750040	C ₂₆ H ₂₆ N ₂ O ₂	73	ER α	Met343	2IOK

047 16122612	C ₂₃ H ₂₈ N ₂	74	ER α	Glu331	2PJL
4OH 27125	C ₁₈ H ₂₄ O ₄	75	ER α	His524	3L03
ETC 446849	C ₂₂ H ₂₄ O ₂	76	ER α ER β	Asp321, Trp360, Lys362, Val364 Leu339	1L2I, 1L2J
DES 448537	C ₁₈ H ₂₀ O ₂	77	ER α	-	3ERD
369 24892830	C ₂₃ H ₁₈ O ₄	78	ER α	Glu353, Phe404, His524	3DT3
244 656953	C ₁₆ H ₁₁ N O ₃	79	ER α	Glu353, His524	1X7E
		80	ER α		
KN0 135430624	C ₂₁ H ₁₅ F ₃ N ₂ O ₂	80	ER α	Leu346, Glu353, Leu387	3OS8(a+c)
7EC	C ₃₁ H ₃₂ Br N O ₆ S	81	ER α	Asp351, Glu353, Gly521, Asn532, Val533	5TN9
29S 154257	C ₃₀ H ₃₄ N ₂ O ₃	82	ER α	Asp351, Glu353, His524, Asn532 Val533	4XI3
KN1 135461982	C ₁₇ H ₁₃ F ₃ N ₂ O ₂	83	ER α	-	2QZO
EZT 15485192	C ₂₇ H ₂₉ F ₃ O ₂	84	ER α	His524	2P15
27H 354654	C ₂₂ H ₃₀ O ₄	85	ER α	Glu353	4MG7(a+b)
4NA 6102690	C ₁₆ H ₁₁ Cl O ₂	85	ER β	Glu305	1YY4
789 10286462	C ₁₅ H ₉ Br O ₃	86	ER β	His475	1ZAF
555 135440536	C ₁₇ H ₁₃ N O ₂	87	ER β	-	2NV7
KB0 58027337	C ₂₂ H ₁₈ O ₂	88	ER β	Glu305, His475	4ZI1
697 656952	C ₁₅ H ₉ N O ₃	89	ER β	Glu305, His475	1X76
SU4 53483961	C ₁₈ H ₂₁ N O ₄ S	90	ER β	-	2YLY
397 656936	C ₁₄ H ₁₀ O ₃	91	ER β	Glu305	1U9E
FBR 11987846	C ₁₇ H ₁₉ Br O ₂	92	ER β	Glu305	2GIU
MON 9957008	C ₂₄ H ₂₉ Cl N ₆ O S	93	ER β	Met295, Asp303 Glu305, Leu476, Met479	1NDE
I0G	C ₁₈ H ₁₈ O ₃	94	ER β	-	2I0G

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All ligand interaction positions have been assigned to the following reference sequences: MR: 2AA2, GR:5NFT, PR: 1SQN, AR: 2OZ7, ER α : 1ERR, ER β :1U9E, AncGr: 2Q1H.