

table S1 The Swiss-Prot ID of positive set

Swiss-Prot ID	Swiss-Prot ID	Swiss-Prot ID	Swiss-Prot ID	Swiss-Prot ID	Swiss-Prot ID	Swiss-Prot ID	Swiss-Prot ID
Q13541	P11245	P33261	P35575	P60568	P08183	Q08499	O43704
P08908	Q92484	P10635	P11413	P08700	P16455	P01210	P40763
P28223	P00966	P05181	P80404	P05112	P14174	P14222	P21731
P41595	P54707	P24903	P22466	P05231	Q8N4C8	P05164	P01135
O95264	P05023	P08684	Q14376	P10145	P28482	P07202	P01137
Q8WXA8	P00846	P31327	P32239	P06213	P45983	P43088	P10600
Q9BXI3	P17735	P50416	P01350	P48549	Q15759	P23219	P00734
P21589	P61769	P02741	P14867	P48544	Q16539	P35354	P01033
P02763	Q92934	P04141	Q96CW5	P48051	P09238	P14923	P29401
P08697	P51572	P41240	P19440	P35568	P50281	Q9NQ66	Q9Y490
P30542	P10415	P24310	Q9UJ14	Q9Y4H2	P08254	Q9NYY3	P01375
P17174	P23560	P00167	P01215	P08514	P33527	P00491	P48788
P00505	P08236	P61803	P02724	P11215	Q92887	P37231	P19438
O95342	Q9UHR4	Q14118	O95249	P06756	O15438	P05187	P11387
P19801	Q13490	P17707	P07203	P05106	P04731	P05186	P11388
P16219	P30411	P11926	P10144	Q9BY32	P42898	P32119	P60174
Q9BYF1	P15538	P06132	P11021	Q9UQF2	P01106	Q13162	P51580
P22303	Q99643	P20711	P00390	P05412	P02144	P30044	P40225
P12821	O43497	P17661	P09488	P00568	Q9BXJ9	O60260	O14763
P53396	P43155	P80365	P11166	P17612	P61599	P04070	Q13077
P11229	P55287	P31040	P11168	P15382	P52961	Q9UMS4	P07204
P08172	P55289	P21912	P14672	Q12809	P00387	P25105	P02787
P20309	P55283	O14521	P13807	P51787	Q15788	Q16647	Q96RU7
Q15067	O43570	Q00796	P13716	P04183	P16435	Q03431	Q16881
P08913	P63098	P30046	P06865	O00142	P08473	P01270	P30536
P00813	Q9BWT7	P09172	P14210	O43240	Q8TCU5	Q13882	P07101
Q08828	P42574	P54098	P04035	P03952	Q12879	Q05209	P22309
P07327	P55212	P06746	P09601	P17252	Q13224	P22695	P19224
Q15848	Q14790	P42658	P00492	Q15139	Q14957	P29762	O60656
P08588	P55211	Q12882	P00738	O94806	O15399	P10276	P54855
P07550	P04040	P21728	P04196	Q05655	P29475	Q06141	P13051
P12236	P16870	P14416	P35367	Q02156	P35228	P00797	Q03405
P06280	P15169	P35462	P25021	P05129	P29474	P09455	P00749
P35869	O75828	P21917	O43301	P41743	P01303	O00411	P07911
P31749	P35520	P00374	P34931	P24723	Q92570	P19793	P37288
P47895	P24385	Q01094	P07900	Q04759	Q16656	P55011	P08670
P24298	P33681	P43004	P08107	Q05513	P03886	Q4U2R8	P18206
P19021	Q8IZL9	P05305	P17066	P00338	Q9NZT2	P18405	P54219
Q07075	P06276	P00533	Q12794	P41159	P41143	O43865	P04275

P53582	P28329	P18146	P07099	O00292	P35372	P23526	Q9NQW7
P15144	P02452	O95163	P34913	P06858	P02818	P30531	P02649
P54802	P02462	P01588	P10997	P09917	P30559	P23975	P41181
P10275	P21964	P04626	P05362	Q86VZ4	O00443	P31645	P05089
Q9BY76	P00395	P03372	P01567	P16109	P04637	P05060	
P01019	P13073	O00748	P01579	P61626	O15350	Q07699	
P16066	P04798	P00742	P27352	Q02978	P04054	Q14524	
P21397	P05177	P49327	P01583	Q16706	P09874	P35247	
P27338	P11509	P08620	P01584	O00754	P27815	Q99720	
O94973	P20813	P62942	P01589	Q5SRI9	Q07343	P00441	
P05549	P11712	P01100	P14784	P02686	Q08493	Q12772	

table S2 The Swiss-Prot ID of test set

Swiss-Prot ID	Swiss-Prot ID	Swiss-Prot ID	Swiss-Prot ID	Swiss-Prot ID	Swiss-Prot ID	Swiss-Prot ID	Swiss-Prot ID
A8K7I4	P14550	P45984	Q16690	P00326	P28070	P99999	Q9BZX2
O00180	P14555	P46087	Q16698	P00352	P28072	Q00169	Q9BZZ2
O00182	P14598	P46108	Q16718	P00367	P28074	Q00266	Q9GZR5
O00187	P14621	P46439	Q16719	P00403	P28161	Q00534	Q9GZS9
O00204	P14625	P46459	Q16739	P00414	P28221	Q00535	Q9GZT4
O00206	P14635	P46531	Q16740	P00439	P28222	Q00536	Q9GZT9
O00217	P14649	P46663	Q16760	P00450	P28300	Q00613	Q9GZU7
O00220	P14679	P46926	Q16762	P00451	P28331	Q00653	Q9GZZ6
O00222	P14735	P46976	Q16769	P00480	P28335	Q00987	Q9H015
O00244	P14770	P47211	Q16772	P00488	P28476	Q01064	Q9H0M0
O00253	P14778	P47712	Q16773	P00558	P28562	Q01082	Q9H1D0
O00254	P14780	P47869	Q16774	P00709	P28566	Q01344	Q9H1K4
O00273	P14854	P47870	Q16775	P00736	P28702	Q01362	Q9H239
O00300	P14868	P47871	Q16790	P00740	P28799	Q01581	Q9H244
O00305	P14902	P47872	Q16795	P00746	P28838	Q01650	Q9H252
O00308	P14920	P47898	Q16798	P00747	P28845	Q01718	Q9H255
O00329	P14927	P47900	Q16831	P00748	P28908	Q01959	Q9H2G2
O00341	P15018	P47901	Q16836	P00750	P29074	Q02127	Q9H2M3
O00408	P15056	P47929	Q16850	P00751	P29120	Q02153	Q9H2P9
O00459	P15085	P47985	Q16853	P00915	P29144	Q02218	Q9H2S1
O00483	P15086	P47989	Q16873	P00918	P29218	Q02221	Q9H2X9
O00519	P15090	P48023	Q16877	P01008	P29274	Q02223	Q9H306

O00555	P15104	P48029	Q16878	P01009	P29275	Q02224	Q9H3M7
O00574	P15121	P48039	Q32P28	P01023	P29279	Q02246	Q9H3N8
O00591	P15151	P48048	Q460N3	P01024	P29317	Q02252	Q9H3S4
O00626	P15170	P48058	Q494W8	P01031	P29371	Q02338	Q9H479
O00716	P15248	P48067	Q53GD3	P01042	P29377	Q02363	Q9H490
O00763	P15259	P48147	Q53H96	P01112	P29459	Q02548	Q9H4B7
O00764	P15260	P48163	Q5IJ48	P01116	P29460	Q02556	Q9H4G4
O00767	P15289	P48167	Q5JPH6	P01127	P29466	Q02641	Q9H4M7
O14493	P15291	P48169	Q5JTZ9	P01130	P29508	Q02643	Q9H4Y5
O14543	P15391	P48357	Q5TDP6	P01133	P29597	Q02750	Q9H598
O14556	P15407	P48443	Q6IA69	P01138	P29803	Q02763	Q9H6Z9
O14561	P15428	P48448	Q6IB77	P01178	P29965	Q02779	Q9H869
O14594	P15509	P48449	Q6L8H2	P01185	P29972	Q02790	Q9H936
O14646	P15531	P48506	Q6NS38	P01189	P29992	Q02928	Q9HA77
O14649	P15559	P48507	Q6NUM9	P01233	P30038	Q03013	Q9HAB3
O14672	P15692	P48551	Q6NUS8	P01236	P30041	Q03135	Q9HAN9
O14684	P15813	P48552	Q6NVY1	P01241	P30043	Q03154	Q9HB21
O14717	P15954	P48637	Q6NXR0	P01344	P30049	Q03181	Q9HB40
O14727	P16050	P48651	Q6P093	P01374	P30084	Q03393	Q9HBA0
O14732	P16070	P48664	Q6P1M0	P01574	P30085	Q03403	Q9HBH5
O14733	P16083	P48728	Q6P996	P01730	P30153	Q03426	Q9HBL8
O14735	P16112	P48735	Q6PHW0	P01764	P30273	Q03518	Q9HCC0
O14746	P16118	P48736	Q6PI48	P01834	P30291	Q03721	Q9HCD5
O14756	P16150	P48745	Q6PKH6	P01854	P30304	Q04206	Q9HCP0
O14757	P16152	P48764	Q6UWM7	P01859	P30305	Q04609	Q9HCR9
O14764	P16220	P49019	Q6UWN8	P01877	P30307	Q04760	Q9NNX6
O14786	P16233	P49069	Q6UWP2	P01906	P30405	Q04771	Q9NP56
O14788	P16234	P49137	Q6WRI0	P02458	P30419	Q04828	Q9NP99
O14792	P16410	P49146	Q6YP21	P02461	P30518	Q04844	Q9NPA1
O14793	P16422	P49189	Q6ZMR3	P02585	P30519	Q04864	Q9NPA2
O14795	P16444	P49190	Q6ZQY3	P02647	P30520	Q05084	Q9NPB1
O14818	P16471	P49238	Q6ZWJ1	P02652	P30532	Q05086	Q9NPC1
O14832	P16473	P49247	Q71U36	P02656	P30550	Q05315	Q9NPC2
O14836	P16519	P49257	Q7L0J3	P02671	P30556	Q05329	Q9NPF7
O14841	P16581	P49286	Q7L266	P02675	P30613	Q05397	Q9NPG2
O14842	P16615	P49336	Q7L3T8	P02679	P30711	Q05469	Q9NPH2
O14874	P16860	P49354	Q7LG56	P02689	P30793	Q05586	Q9NPI8
O14880	P16871	P49356	Q7RTV2	P02708	P30825	Q05901	Q9NPJ3
O14920	P16930	P49366	Q7RTX7	P02735	P30837	Q05932	Q9NQB0
O14939	P17050	P49368	Q7Z2H8	P02743	P30838	Q05940	Q9NQR9
O14949	P17181	P49411	Q7Z2W7	P02745	P30872	Q06187	Q9NQS7
O14957	P17213	P49419	Q7Z2Z2	P02746	P30874	Q06203	Q9NR19

O14964	P17301	P49441	Q7Z4J2	P02747	P30926	Q06278	Q9NR28
O14965	P17302	P49448	Q7Z4W1	P02749	P30939	Q06432	Q9NR33
O14983	P17405	P49585	Q86SZ2	P02760	P30968	Q06520	Q9NR96
O15066	P17516	P49588	Q86VU5	P02765	P30989	Q06609	Q9NR97
O15067	P17538	P49591	Q86W47	P02766	P31150	Q06643	Q9NRA2
O15105	P17540	P49619	Q86W56	P02768	P31151	Q07001	Q9NRE1
O15111	P17568	P49720	Q86WA6	P02771	P31153	Q07108	Q9NRF9
O15116	P17600	P49721	Q86XF0	P02775	P31213	Q07817	Q9NRX3
O15120	P17676	P49747	Q86Y39	P02776	P31268	Q07820	Q9NS40
O15123	P17752	P49759	Q86YB8	P02778	P31323	Q07837	Q9NS75
O15143	P17787	P49761	Q86YT5	P02786	P31350	Q07864	Q9NS85
O15144	P17812	P49765	Q8IU85	P02788	P31358	Q07869	Q9NSA0
O15145	P17813	P49768	Q8IURO	P02790	P31391	Q07954	Q9NSD9
O15169	P17900	P49773	Q8IUZ5	P02792	P31639	Q08188	Q9NSE4
O15217	P17931	P49788	Q8IVH4	P02794	P31644	Q08209	Q9NTG7
O15239	P17948	P49789	Q8IVL5	P03891	P31751	Q08257	Q9NUB1
O15269	P18031	P49810	Q8IVS2	P03897	P31930	Q08289	Q9NUV7
O15270	P18054	P49821	Q8IVT5	P03901	P31937	Q08345	Q9NVH6
O15296	P18085	P49840	Q8IWL2	P03905	P31939	Q08426	Q9NVS9
O15297	P18089	P49862	Q8IWT1	P03915	P31949	Q08431	Q9NWM0
O15374	P18283	P49888	Q8IYQ7	P03923	P31994	Q08462	Q9NWT6
O15375	P18428	P49895	Q8IZS8	P03950	P32238	Q08722	Q9NWZ3
O15379	P18505	P49902	Q8N0U8	P03951	P32241	Q08752	Q9NWZ5
O15382	P18509	P49913	Q8N119	P03956	P32245	Q08881	Q9NX09
O15393	P18545	P49915	Q8N139	P04004	P32246	Q09013	Q9NXA8
O15403	P18825	P49916	Q8N159	P04049	P32247	Q09428	Q9NXE4
O15427	P18847	P49918	Q8N1C3	P04053	P32297	Q09470	Q9NY59
O15455	P18858	P49961	Q8N1Q1	P04062	P32302	Q10472	Q9NY65
O15460	P19022	P50052	Q8N543	P04075	P32320	Q10588	Q9NY72
O15511	P19105	P50135	Q8N5Z0	P04083	P32322	Q12756	Q9NYA1
O15519	P19113	P50148	Q8N608	P04085	P32418	Q12770	Q9NYK1
O15524	P19235	P50213	Q8N8N7	P04114	P32745	Q12778	Q9NYQ3
O15528	P19320	P50225	Q8N8R3	P04118	P32754	Q12797	Q9NYR8
O15530	P19338	P50391	Q8N9I0	P04156	P32927	Q12840	Q9NYX4
O15554	P19404	P50406	Q8NBP7	P04179	P32929	Q12866	Q9NYY1
O43169	P19429	P50440	Q8NBQ5	P04181	P32970	Q12884	Q9NZD2
O43174	P19544	P50548	Q8NEB9	P04198	P33121	Q12908	Q9NZK7
O43175	P19622	P50579	Q8NER1	P04211	P33151	Q12923	Q9NZV8
O43181	P19634	P50613	Q8NET8	P04234	P33176	Q13002	Q9P0X4
O43193	P19784	P50747	Q8NFA2	P04271	P33260	Q13003	Q9P0Z9
O43246	P19835	P50750	Q8NFJ5	P04350	P33402	Q13085	Q9P289
O43252	P19875	P50897	Q8NFT2	P04406	P33908	Q13093	Q9P2J5

O43272	P19883	P50993	Q8NFW8	P04424	P33981	Q13126	Q9P2R7
O43293	P19961	P51003	Q8NI22	P04629	P33993	Q13133	Q9P2W7
O43353	P19971	P51149	Q8TAA9	P04632	P34096	Q13163	Q9UBC3
O43424	P20061	P51151	Q8TBC4	P04745	P34741	Q13183	Q9UBF6
O43447	P20132	P51161	Q8TC12	P04746	P34896	Q13200	Q9UBG0
O43451	P20138	P51168	Q8TCC7	P04792	P34897	Q13202	Q9UBK8
O43525	P20151	P51170	Q8TD30	P04818	P34903	Q13231	Q9UBM1
O43526	P20231	P51511	Q8TDU6	P04839	P34949	Q13233	Q9UBM7
O43541	P20248	P51512	Q8TDV5	P05019	P34969	Q13255	Q9UBN7
O43603	P20273	P51553	Q8TE23	P05062	P34972	Q13258	Q9UBQ6
O43612	P20292	P51570	Q8TED1	P05067	P34981	Q13285	Q9UBS5
O43613	P20333	P51587	Q8TET4	P05091	P34995	Q13296	Q9UBT6
O43614	P20339	P51606	Q8TF76	P05093	P34998	Q13309	Q9UBU3
O43617	P20472	P51659	Q8WTS6	P05107	P35030	Q13324	Q9UBX1
O43653	P20594	P51677	Q8WTV0	P05108	P35080	Q13332	Q9UBX3
O43674	P20618	P51679	Q8WUI4	P05109	P35218	Q13362	Q9UDR5
O43676	P20645	P51681	Q8WVQ1	P05113	P35219	Q13363	Q9UDW1
O43677	P20648	P51685	Q8WW43	P05120	P35222	Q13370	Q9UDX3
O43678	P20674	P51687	Q8WWL2	P05121	P35225	Q13393	Q9UDX4
O43681	P20701	P51692	Q8WWM9	P05141	P35237	Q13418	Q9UGH3
O43708	P20783	P51788	Q8WWT9	P05154	P35241	Q13423	Q9UGI6
O43741	P20809	P51800	Q8WX39	P05162	P35243	Q13426	Q9UGM1
O43766	P20810	P51843	Q8WY07	P05165	P35270	Q13427	Q9UGM6
O43772	P20815	P51857	Q92506	P05166	P35318	Q13464	Q9UGN5
O43776	P20823	P51955	Q92523	P05230	P35346	Q13477	Q9UHA3
O43837	P20839	P51970	Q92569	P05451	P35368	Q13489	Q9UHC9
O43915	P20916	P52209	Q92633	P05452	P35398	Q13507	Q9UHF1
O43920	P20941	P52333	Q92637	P05546	P35408	Q13509	Q9UHI5
O60218	P20963	P52732	Q92696	P05787	P35499	Q13526	Q9UHQ9
O60235	P21246	P52757	Q92731	P05981	P35558	Q13542	Q9UHW9
O60240	P21266	P52758	Q92736	P06126	P35610	Q13547	Q9UHY7
O60262	P21281	P52788	Q92769	P06239	P35626	Q13554	Q9UI09
O60264	P21283	P52799	Q92781	P06241	P35754	Q13557	Q9UI32
O60294	P21333	P52823	Q92793	P06307	P35790	Q13564	Q9UI33
O60344	P21439	P52848	Q92820	P06396	P35914	Q13613	Q9UIC8
O60391	P21452	P52895	Q92826	P06400	P35968	Q13621	Q9UJ68
O60427	P21453	P53004	Q92830	P06401	P36021	Q13627	Q9UJ70
O60488	P21462	P53350	Q92831	P06576	P36222	Q13630	Q9UJ72
O60493	P21549	P53355	Q92835	P06702	P36405	Q13641	Q9UJM8
O60494	P21554	P53597	Q92843	P06729	P36507	Q13698	Q9UJS0
O60512	P21580	P53602	Q92847	P06731	P36542	Q13748	Q9UJT0
O60513	P21673	P53609	Q92876	P06732	P36544	Q13751	Q9UJT1

O60547	P21695	P53611	Q92905	P06737	P36871	Q13838	Q9UK17
O60551	P21741	P53634	Q92911	P06744	P36873	Q13907	Q9UK23
O60565	P21757	P53674	Q92930	P06850	P36888	Q13946	Q9UKL6
O60568	P21796	P53778	Q92947	P06870	P36896	Q13956	Q9UKM7
O60603	P21817	P53779	Q92952	P07098	P36897	Q14032	Q9UKP6
O60658	P21860	P53985	Q93088	P07148	P36952	Q14061	Q9UKQ2
O60664	P21918	P54278	Q95460	P07195	P36955	Q14116	Q9UKU7
O60669	P21926	P54284	Q969F8	P07225	P36959	Q14164	Q9UKY3
O60674	P21980	P54289	Q969G6	P07237	P36969	Q14181	Q9UL17
O60678	P22001	P54368	Q969P6	P07288	P37023	Q14209	Q9UL51
O60701	P22033	P54577	Q969V1	P07307	P37058	Q14210	Q9UL54
O60733	P22061	P54687	Q969V6	P07333	P37059	Q14242	Q9ULA0
O60755	P22102	P54760	Q96A70	P07339	P37088	Q14289	Q9ULC6
O60760	P22301	P54819	Q96AZ6	P07360	P37268	Q14314	Q9ULK0
O60779	P22314	P54868	Q96BH3	P07384	P38435	Q14330	Q9ULW8
O60825	P22352	P54886	Q96C24	P07437	P38484	Q14416	Q9ULX7
O60840	P22392	P55017	Q96C36	P07451	P38606	Q14432	Q9ULZ9
O60858	P22413	P55055	Q96C86	P07477	P38936	Q14494	Q9UM07
O60882	P22455	P55058	Q96CD2	P07510	P39023	Q14512	Q9UM73
O60890	P22459	P55061	Q96D31	P07585	P39086	Q14534	Q9UMX2
O60894	P22460	P55072	Q96DP5	P07602	P39900	Q14541	Q9UN19
O60895	P22557	P55085	Q96EB6	P07686	P40189	Q14566	Q9UN76
O60896	P22570	P55157	Q96EM0	P07711	P40198	Q14571	Q9UN88
O60906	P22607	P55210	Q96EN8	P07737	P40199	Q14573	Q9UNA0
O60909	P22681	P55263	Q96EY8	P07741	P40238	Q14626	Q9UNI1
O60911	P22748	P55769	Q96FI4	P07766	P40261	Q14627	Q9UNK4
O60939	P22749	P55786	Q96GA7	P07814	P40394	Q14653	Q9UNN8
O75015	P22888	P55789	Q96GD0	P07858	P40429	Q14654	Q9UNP4
O75116	P22891	P55809	Q96GD3	P07864	P40616	Q14703	Q9UNX3
O75173	P22894	P55851	Q96GD4	P07919	P40925	Q14721	Q9UP95
O75251	P22897	P55899	Q96GR2	P07947	P40926	Q14749	Q9UPY3
O75293	P23025	P55916	Q96HD9	P07949	P40933	Q14831	Q9UPY5
O75306	P23258	P56181	Q96I15	P07998	P40937	Q14832	Q9UQB9
O75311	P23280	P56192	Q96I59	P08048	P40939	Q14833	Q9Y210
O75362	P23284	P56279	Q96I99	P08069	P41091	Q14914	Q9Y219
O75365	P23297	P56282	Q96IY4	P08100	P41145	Q15031	Q9Y234
O75380	P23368	P56373	Q96KC2	P08123	P41146	Q15072	Q9Y243
O75390	P23378	P56524	Q96KS0	P08138	P41180	Q15075	Q9Y251
O75438	P23381	P56556	Q96L21	P08173	P41231	Q15077	Q9Y257
O75460	P23416	P56696	Q96L73	P08185	P41235	Q15078	Q9Y271
O75469	P23434	P56817	Q96LB9	P08217	P41250	Q15102	Q9Y275
O75473	P23443	P56937	Q96LZ3	P08235	P41252	Q15109	Q9Y285

O75489	P23458	P59768	Q96MA6	P08238	P41279	Q15118	Q9Y286
O75493	P23469	P59796	Q96NR8	P08243	P41594	Q15119	Q9Y289
O75496	P23471	P59998	Q96NX5	P08246	P41597	Q15120	Q9Y296
O75521	P23528	P60484	Q96NY8	P08253	P41732	Q15172	Q9Y2B2
O75600	P23677	P60880	Q96PD7	P08263	P41970	Q15181	Q9Y2D0
O75604	P23743	P60900	Q96Q40	P08311	P42081	Q15274	Q9Y2I1
O75676	P23763	P60953	Q96Q83	P08319	P42126	Q15303	Q9Y2J8
O75715	P23786	P60981	Q96QT4	P08519	P42224	Q15375	Q9Y2Q0
O75746	P23919	P61024	Q96QU6	P08559	P42261	Q15382	Q9Y2U5
O75762	P23921	P61158	Q96RD7	P08571	P42262	Q15389	Q9Y2Z4
O75832	P23945	P61221	Q96RI0	P08574	P42330	Q15392	Q9Y345
O75865	P23946	P61278	Q96RJ0	P08575	P42336	Q15413	Q9Y3I0
O75874	P24046	P61313	Q96RJ3	P08631	P42338	Q15466	Q9Y3Q0
O75879	P24071	P61457	Q96RQ3	P08637	P42345	Q15596	Q9Y3R4
O75891	P24311	P61586	Q96S37	P08648	P42357	Q15648	Q9Y468
O75899	P24347	P61587	Q96SL4	P08709	P42684	Q15717	Q9Y478
O75900	P24386	P61925	Q99250	P08727	P42768	Q15722	Q9Y4U1
O75907	P24387	P61927	Q99259	P08729	P42773	Q15738	Q9Y4W6
O75908	P24394	P62158	Q99436	P08758	P42892	Q15746	Q9Y5K3
O75911	P24530	P62258	Q99456	P08833	P43003	Q15758	Q9Y5N1
O75936	P24557	P62312	Q99460	P08842	P43005	Q15761	Q9Y5R2
O75976	P24592	P62330	Q99470	P08887	P43007	Q15796	Q9Y5R8
O76054	P24666	P62487	Q99497	P08912	P43080	Q15797	Q9Y5Y4
O76070	P24752	P62491	Q99519	P09012	P43116	Q15800	Q9Y5Y6
O76074	P24821	P62508	Q99542	P09038	P43119	Q15822	Q9Y5Y9
O76075	P24855	P62714	Q99571	P09104	P43121	Q15825	Q9Y600
O76082	P24864	P62745	Q99572	P09210	P43166	Q15842	Q9Y617
O76083	P24941	P62750	Q99584	P09211	P43220	Q15878	Q9Y619
O94759	P25024	P62826	Q99640	P09237	P43235	Q16099	Q9Y646
O94760	P25025	P62829	Q99661	P09341	P43246	Q16134	Q9Y663
O94766	P25090	P62837	Q99665	P09382	P43354	Q16270	Q9Y666
O94768	P25092	P62873	Q99683	P09417	P43357	Q16445	Q9Y678
O94788	P25098	P62913	Q99705	P09429	P43358	Q16478	Q9Y689
O94832	P25100	P62917	Q99707	P09466	P43403	Q16552	Q9Y691
O94903	P25101	P62937	Q99714	P09467	P43405	Q16558	Q9Y697
O94907	P25103	P62993	Q99735	P09486	P43489	Q16566	Q9Y6B6
O94925	P25116	P63027	Q99795	P09543	P43490	Q16568	Q9Y6D9
O94956	P25311	P63096	Q99798	P09603	P43681	Q16602	Q9Y6F1
O94992	P25398	P63151	Q99808	P09619	P43694	Q16613	Q9Y6I3
O95069	P25445	P63208	Q99814	P09622	P45379	Q16644	Q9Y6L7
O95125	P25685	P63211	Q99835	P09651	P45381	Q16651	Q9Y6M9
O95139	P25705	P63316	Q99836	P09668	P45452	Q16654	Q9Y6Q6

O95167	P25774	P67775	Q99873	P09669	P45844	Q16658	Q9Y6Q9
O95168	P25787	P68133	Q99884	P09681	P45877	Q16665	Q9Y6R4
O95169	P25788	P68363	Q99928	P09693	P45880	Q16671	Q9Y6W8
O95178	P25789	P68366	Q99956	P09848	P45954	Q16678	Q9Y6Y9
O95180	P25791	P68371	Q99973	P09871	P13501	P12004	P11177
O95182	P25815	P68400	Q99988	P09884	P13569	P12081	P11216
O95190	P25874	P68871	Q9BQB6	P09919	P13612	P12235	P11217
O95237	P25929	P69891	Q9BQE3	P09936	P13631	P12259	P11226
O95263	P25942	P69905	Q9BTZ2	P09958	P13639	P12268	P11230
O95298	P26010	P78330	Q9BVA1	P09960	P13688	P12271	P11233
O95299	P26196	P78334	Q9BVG9	P0C0L4	P13725	P12277	P11362
O95363	P26358	P78362	Q9BVJ7	P0C0L5	P13726	P12314	P11473
O95389	P26440	P78368	Q9BVM4	P0CG04	P13727	P12318	P11474
O95425	P26441	P78380	Q9BW19	P0CG29	P13798	P12319	P11488
O95470	P26447	P78417	Q9BW91	P0CG47	P13866	P12429	P11498
O95477	P26572	P78423	Q9BW92	P0CG48	P13929	P12532	P11511
O95479	P26639	P78508	Q9BWD1	P0DI81	P13945	P12724	P11586
O95573	P26640	P78527	Q9BXA5	P0DJ8	P13995	P12830	P11597
O95622	P26678	P78536	Q9BXI2	P10082	P14061	P12883	P11678
O95633	P26951	P78540	Q9BXJ7	P10109	P14151	P12931	P11684
O95665	P26992	P78552	Q9BY41	P10114	P14207	P12955	P11717
O95749	P27169	P80075	Q9BY49	P10147	P14324	P13196	P11766
O95831	P27361	P80188	Q9BY66	P10153	P14410	P13497	P11802
O95838	P27487	P80511	Q9BYC2	P10176	P14543	P13500	P11836
O95864	P27695	P82251	Q9BYV1	P10253	P10696	P10809	P10914
O95865	P27707	P84022	Q9BYZ2	P10398	P10721	P10827	P11086
O95881	P27708	P84077	Q9BYZ8	P10451	P10745	P10828	P11137
O95907	P27797	P84098	Q9BZ11	P10515	P10747	P10909	P11142
O95954	P27824	P98160	Q9BZJ3	P10599	P10768	P10912	P11172
O95989	P27930	P98164	Q9BZR6	P10606	P10646	P10644	P10632
O96000	P27986	P98170	Q9BZV2	P10620	P28066	P98194	Q9BZW2
P00156							

table S3 583 targets that were predicted to be ADRRPs

Swiss-Prot ID	gene name	Swiss-Prot ID	gene name	Swiss-Prot ID	gene name	Swiss-Prot ID	gene name
P62258	YWHAE	P06307	CCK	P08246	ELANE	Q14116	IL18
P28222	HTR1B	P13500	CCL2	P13929	ENO3	P14778	IL1R1
P28221	HTR1D	P13501	CCL5	P09104	ENO2	P26951	IL3RA
P28335	HTR2C	P20248	CCNA2	P14625	HSP90B1	P24394	IL4R
P01009	SERPINA1	P14635	CCNB1	P22413	ENPP1	P05113	IL5
P01023	A2M	P24864	CCNE1	P16422	EPCAM	P40189	IL6ST
P05067	APP	P41597	CCR2	P29317	EPHA2	P15248	IL9
P29274	ADORA2A	P51677	CCR3	P19235	EPOR	P15260	IFNGR1
P29275	ADORA2B	P08571	CD14	P21860	ERBB3	P10914	IRF1
O95477	ABCA1	P15391	CD19	Q15303	ERBB4	Q14654	KCNJ11
Q09428	ABCC8	P06126	CD1A	P11474	ESRRA	P48048	KCNJ1
P45844	ABCG1	P15813	CD1D	P10768	ESD	P13612	ITGA4
Q13085	ACACA	P10747	CD28	P00488	F13A1	P08648	ITGA5
P43681	CHRNA4	P06729	CD2	P12259	F5	P20701	ITGAL
P02708	CHRNA1	P20138	CD33	P08709	F7	P05107	ITGB2
O00767	SCD	P04234	CD3D	P00451	F8	P26010	ITGB7
P33121	ACSL1	P20963	CD247	P00740	F9	Q14573	ITPR3
Q01718	MC2R	P29965	CD40LG	P15090	FABP4	P26440	IVD
P68133	ACTA1	P16070	CD44	P07148	FABP1	P23458	JAK1
P37023	ACVRL1	P01730	CD4	P12318	FCGR2A	P52333	JAK3
O14672	ADAM10	Q07108	CD69	P31994	FCGR2B	P05787	KRT8
P35368	ADRA1B	P42081	CD86	P02771	AFP	P31323	PRKAR2B
P25100	ADRA1D	P21926	CD9	P02765	AHSG	P22001	KCNA3
O95622	ADCY5	P32320	CDA	P05230	FGF1	P22460	KCNA5
P00326	ADH1C	P11802	CDK4	P09038	FGF2	P12277	CKB
P40394	ADH7	Q00535	CDK5	P11362	FGFR1	P06732	CKM
P35318	ADM	P38936	CDKN1A	P22607	FGFR3	P10721	KIT
P13945	ADRB3	P49918	CDKN1C	P02675	FGB	P06870	KLK1
P22570	FDXR	P17676	CEBPB	P02679	FGG	P20151	KLK2
P12235	SLC25A4	P00450	CP	Q02790	FKBP4	P07288	KLK3
P30556	AGTR1	P11597	CETP	P15407	FOSL1	P49862	KLK7
O95831	AIFM1	P00746	CFD	Q12778	FOXO1	P01042	KNG1
P42330	AKR1C3	O15519	CFLAR	P25090	FPR2	P30613	PKLR
P31751	AKT2	P13569	CFTR	P02794	FTH1	P43405	SYK
P00352	ALDH1A1	P01233	CGB/CGB5/ CGB7/CGB8	P02792	FTL	P18428	LBP
O94788	ALDH1A2	P32929	CTH	P09958	FURIN	P06239	LCK
P20292	ALOX5AP	P36222	CHI3L1	P06241	FYN	P07195	LDHB

P02768	ALB	P10809	HSPD1	O95479	H6PD	P07864	LDHC
P05091	ALDH2	P10909	CLU	P06744	GPI	P01130	LDLR
P04075	ALDOA	P23946	CMA1	P43694	GATA4	P17931	LGALS3
P05062	ALDOB	P21554	CNR1	P78334	GABRE	P48357	LEPR
P15121	AKR1B1	P34972	CNR2	P30793	GCH1	P16150	SPN
P55789	GFER	P26441	CNTF	P10912	GHR	P15018	LIF
P28838	LAP3	Q02246	CNTN2	P09681	GIP	Q05469	LIPE
P19961	AMY2B	P08123	COL1A2	P04062	GBA	P09960	LTA4H
P16860	NPPB	P02458	COL2A1	P15104	GLUL	P18054	ALOX12
P03950	ANG	P02461	COL3A1	P43220	GLP1R	P16050	ALOX15
O15123	ANGPT2	P01024	C3	P35754	GLRX	P09848	LCT
P01008	SERPINC1	P23528	CFL1	P47871	GCGR	Q07954	LRP1
P04083	ANXA1	P01189	POMC	P46976	GYG1	P98164	LRP2
P08758	ANXA5	P10176	COX8A	P29992	GNA11	P22888	LHCGR
O14727	APAF1	P05108	CYP11A1	P50148	GNAQ	P10253	GAA
P27695	APEX1	P05093	CYP17A1	P30968	GNRHR	P14151	SELL
P02647	APOA1	P11511	CYP19A1	P18283	GPX2	P16581	SELE
P02652	APOA2	P10632	CYP2C8	P22352	GPX3	P28300	LOX
P04114	APOB	P20815	CYP3A5	P42261	GRIA1	Q13233	MAP3K1
P02656	APOC3	Q02928	CYP4A11	P42262	GRIA2	P20916	MAG
P02749	APOH	P16220	CREB1	P39086	GRIK1	P48163	ME1
P07741	APRT	P34998	CRHR1	P41594	GRM5	P11137	MAP2
P29972	AQP1	P06850	CRH	P28799	GRN	P49137	MAPKAPK2
P10398	ARAF	P46108	CRK	P48507	GCLM	Q14703	MBTPS1
P25098	ADRBK1	P07333	CSF1R	P48506	GCLC	P32245	MC4R
P62330	ARF6	P09603	CSF1	P48637	GSS	Q07820	MCL1
P04424	ASL	P15509	CSF2RA	P08263	GSTA1	P08235	NR3C2
P15289	ARSA	P09919	CSF3	P09210	GSTA2	P21439	ABCB4
P17405	SMPD1	P29279	CTGF	P28161	GSTM2	P31153	MAT2A
P08243	ASNS	P16410	CTLA4	P21266	GSTM3	P10620	MGST1
P50993	ATP1A2	P35222	CTNNA1	P09211	GSTP1	P27361	MAPK3
P16615	ATP2A2	P30825	SLC7A1	P69891	HBG1	P45984	MAPK9
P18847	ATF3	P17302	GJA1	O15379	HDAC3	P21741	MDK
O15169	AXIN1	P19875	CXCL2	P22557	ALAS2	P24347	MMP11
Q07817	BCL2L1	P02775	PPBP	P13196	ALAS1	P39900	MMP12
P56817	BACE1	P25024	CXCR1	P02790	HPX	P45452	MMP13
P55061	TMBIM6	P25025	CXCR2	P07686	HEXB	P03956	MMP1
O14788	TNFSF11	P32302	CXCR5	P54868	HMGCS2	P08253	MMP2
Q13489	BIRC3	P02778	CXCL10	P09429	HMGB1	P09237	MMP7
P13497	BMP1	P04839	CYBB	P30519	HMOX2	P22894	MMP8
P17213	BPI	P00156	MT-CYB	P20823	HNF1A	P14780	MMP9
P15056	BRAF	P99999	CYCS	P41235	HNF4A	Q02750	MAP2K1

Q06187	BTK	Q05329	GAD2	P08238	HSP90AB1	P36507	MAP2K2
P54289	CACNA2D1	P19113	HDC	Q00613	HSF1	Q13163	MAP2K5
P12830	CDH1	P27707	DCK	P11142	HSPA8	P30305	CDC25B
P19022	CDH2	P14061	HSD17B1	P04792	HSPB1	P34949	MPI
P33151	CDH5	P00367	GLUD1	P14902	IDO1	P20645	M6PR
P00918	CA2	P49448	GLUD2	P08833	IGFBP1	P11717	IGF2R
P22748	CA4	P28845	HSD11B1	P20810	CAST	P43246	MSH2
P62158	CALM1	P09417	QDPR	P14735	IDE	P21757	MSR1
P27797	CALR	P24855	DNASE1	P50213	IDH3A	P42345	MTOR
P27824	CANX	P26358	DNMT1	P48735	IDH2	P43121	MCAM
P07384	CAPN1	P27487	DPP4	P01574	IFNB1	P04198	MYCN
Q16568	CARTPT	P21918	DRD5	P08069	IGF1R	P12883	MYH7
P29466	CASP1	P28562	DUSP1	P05019	IGF1	Q15746	MYLK
P55210	CASP7	P43003	SLC1A3	P01344	IGF2	P32418	SLC8A1
P41180	CASR	P42892	ECE1	O15111	CHUK	P43490	NAMPT
P53634	CTSC	P12724	RNASE3	O14920	IKBKB	P14598	NCF1
P07339	CTSD	P25101	EDNRA	P22301	IL10	P15531	NME1
P08311	CTSG	P24530	EDNRB	P20809	IL11	P29120	PCSK1
P07711	CTSL1	P01133	EGF	P29460	IL12B	P16519	PCSK2
P25774	CTSS	P17813	ENG	P35225	IL13	P01185	AVP
P22681	CBL	Q15717	ELAVL1	Q16552	IL17A	Q00653	NFKB2
P01138	NGF	P02735	SAA1/SAA2	P45877	PPIC	P30518	AVPR2
P25103	TACR1	P02743	APCS	P30405	PPIF	P63027	VAMP2
Q05586	GRIN1	P07602	PSAP	Q13427	PPIG	P19320	VCAM1
P15559	NQO1	Q01959	SLC6A3	P26678	PLN	P21796	VDAC1
P16083	NQO2	Q12770	SCAP	P30041	PRDX6	P11473	VDR
Q15466	NR0B2	P35499	SCN4A	P06401	PGR	P15692	VEGFA
Q13133	NR1H3	P37088	SCNN1A	P16471	PRLR	P17948	FLT1
P43354	NR4A2	P51168	SCNN1B	P01236	PRL	P35968	VEGFR2
P68871	HBB	P51170	SCNN1G	P07225	PROS1	P04004	VTN
P04629	NTRK1	P34741	SDC2	P20472	PVALB	P19544	WT1
P03891	MT-ND2	P19634	SLC9A1	P28066	PSMA5	P47989	XDH
P04181	OAT	P60880	SNAP25	P60484	PTEN	P98170	XIAP
P13725	OSM	P35610	SOAT1	O14684	PTGES	P23025	XPA
P41145	OPRK1	O15524	SOCS1	P18031	PTPN1	P07947	YES1
P04406	GAPDH	O14543	SOCS3	P08575	PTPRC	P43403	ZAP70
P08100	RHO	P04179	SOD2	P31939	ATIC	P40238	MPL
O43612	HCRT	P35237	SERPINB6	P11217	PYGM	O00220	TNFRSF10A
P10451	SPP1	P09486	SPARC	Q02127	DHODH	P16473	TSHR
P00480	OTC	P12931	SRC	Q08257	CRYZ	P02766	TTR
P14920	DAO	P30874	SSTR2	P04049	RAF1	P29597	TYK2
P47900	P2RY1	P32745	SSTR3	P11233	RALA	P19971	TYMP

P41231	P2RY2	P35346	SSTR5	P13631	RARG	P27169	PON1
P32322	PYCR1	P50225	SULT1A1	P01112	HRAS	Q08209	PPP3CA
P27986	PIK3R1	Q06520	SULT2A1	P01116	KRAS	P24666	ACP1
P47712	PLA2G4A	P51692	STAT5B	P25791	LMO2	Q07869	PPARA
P18509	ADCYAP1	P42224	STAT1	P06400	RB1	Q03181	PPARD
P05121	SERPINE1	Q13285	NR5A1	P05451	REG1A	P62937	PPIA
P05120	SERPINB2	P53597	SUCLG1	Q04864	REL	P48736	PIK3CG
P25116	F2R	P07814	EPRS	P07949	RET	Q13393	PLD1
P05165	PCCA	P04053	DNTT	P61586	RHOA	P02776	PF4
P35558	PCK1	P24821	TNC	Q13464	ROCK1	P00747	PLG
P12004	PCNA	O14746	TERT	P35398	RORA	P11086	PNMT
Q13258	PTGDR	Q04206	RELA	P28702	RXRB	P25942	CD40
Q13370	PDE3B	Q03403	TFF2	P48443	RXRG	P25445	FAS
P04085	PDGFA	P02786	TFRC	P21817	RYR1	P28908	TNFRSF8
P01127	PDGFB	P13726	F3	P04271	S100B	P00750	PLAT
Q15118	PDK1	P21980	TGM2	P31949	S100A11	P17752	TPH1
P35408	PTGER4	P24557	TBXAS1	P21453	S1PR1	P19429	TNNI3
P36955	SERPINF1	P10827	THRA	Q99808	SLC29A1	P45379	TNNT2
P12955	PEPD	P10828	THRB	P31213	SRD5A2	P08138	NGFR
P11678	EPX	Q9BWD1	ACAT2	P14679	TYR	P20333	TNFRSF1B
P16234	PDGFRA	P24752	ACAT1	P0CG47	UBB	P55851	UCP2
P09619	PDGFRB	P10599	TXN	P0CG48	UBC	P55916	UCP3
P00558	PGK1	P21580	TNFAIP3	Q05086	UBE3A	P11172	UMPS
P07585	DCN	P48023	FASLG	P25874	UCP1	Q13526	PIN1
P43119	PTGIR	P42336	PIK3CA	P42338	PIK3CB		

Table S4 19 predicted ADRRPs that supported by scientific literatures

<i>Swiss-Prot ID</i>	<i>gene-name</i>	<i>related adverse drug reactions</i>	<i>references</i>
Q15303	ERBB4	heart failure	1, 2
P10721	KIT	diarrhea	3
P07949	RET	constipation, hypertension	4-6,7, 8
P35968	VEGFR2	hypertension, fatigue	9,10-12
P28222	HTR1B	vasospasm	13
P28335	HTR2C	poor satiety and increased food intake	14, 15
Q01959	SLC6A3	hyperthermia and neuronal toxicity	16
Q07869	PPARA	hepatotoxicity	17
P31751	AKT2	hyperglycemia	18, 19
P35222	CTNNA1	neurotoxicity	20
P15692	VEGFA	hypertension	21-23
P99999	CYCS	tumor promoter and acute intoxication	24
P04406	GAPDH	endothelial dysfunction, lactic acidosis	25,26
P68871	HBB	bone marrow suppression	27
P23458	JAK1	immunosuppression	28
O14788	RANKL	inflammation and joint destruction	29
P60484	PTEN	acquired long QT syndrome	30
P08069	IGF1R	hearing loss	31
P08311	CTSG	painful peripheral neuropathy	32

References

1. T. Horie, K. Ono, H. Nishi, K. Nagao, M. Kinoshita, S. Watanabe, Y. Kuwabara, Y. Nakashima, R. Takanabe-Mori, E. Nishi, K. Hasegawa, T. Kita and T. Kimura, *Cardiovasc. Res.*, 2010, **87**, 656-664.
2. S. J. Fuller, K. Sivarajah and P. H. Sugden, *J. Mol. Cell. Cardiol.*, 2008, **44**, 831-854.
3. M. J. Schlumberger, R. Elisei, L. Bastholt, L. J. Wirth, R. G. Martins, L. D. Locati, B. Jarzab, F. Pacini, C. Daumerie, J.-P. Droz, M. J. Eschenberg, Y.-N. Sun, T. Juan, D. E. Stepan and S. I. Sherman, *Journal Of Clinical Oncology*, 2009, **27**, 3794-3801.
4. P. Edery, A. Pelet, L. M. Mulligan, L. Abel, T. Attie, E. Dow, D. Bonneau, A. David, W. Flintoff and D. Jan, *Journal of medical genetics*, 1994, **31**, 602-606.
5. P. J. Svensson, M. Anvret, M. L. Molander and A. Nordenskjold, *Human Genetics*, 1998, **103**, 145-148.
6. S. K. King, B. R. Southwell and J. M. Hutson, *Journal Of Pediatric Surgery*, 2006, **41**, 437-442.
7. J. M. Dora, D. R. Siqueira, E. L. S. Meyer, M. K. Puraes and A. L. Maia, *Arquivos Brasileiros De Endocrinologia E Metabologia*, 2008, **52**, 1332-1336.
8. Z. Zhang, J. Quinlan, W. Hoy, M. D. Hughson, M. Lemire, T. Hudson, P.-A. Hueber, A. Benjamin, A. Roy, E. Pascuet, M. Goodyer, C. Raju, F. Houghton, J. Bertram and P. Goodyer, *Journal Of the American Society Of Nephrology*, 2008, **19**, 2027-2034.
9. J. P. Granger, *Hypertension*, 2009, **54**, 465-467.
10. M. J. Millward, C. House, D. Bowtell, L. Webster, I. N. Olver, M. Gore, M. Copeman, K. Lynch, A.

- Yap, Y. Wang, P. S. Cohen and J. Zalcberg, *British Journal Of Cancer*, 2006,**95**, 829-834.
11. M. G. Fury, A. Zahalsky, R. Wong, E. Venkatraman, E. Lis, L. Hann, T. Aliff, W. Gerald, M. Fleisher and D. G. Pfister, *Investigational New Drugs*, 2007,**25**, 165-172.
12. W. M. Stadler, D. C. Cao, N. J. Vogelzang, C. W. Ryan, K. Hoving, R. Wright, T. Karrison and E. E. Vokes, *Clinical Cancer Research*, 2004,**10**, 3365-3370.
13. S. Kiel, M. Bruss, H. Bonisch and M. Gothert, *Pharmacogenetics*, 2000,**10**, 655-666.
14. L. K. Heisler, M. A. Cowley, L. H. Tecott, W. Fan, M. J. Low, J. L. Smart, M. Rubinstein, J. B. Tatro, J. N. Marcus, H. Holstege, C. E. Lee, R. D. Cone and J. K. Elmquist, *Science*, 2002,**297**, 609-611.
15. S. P. Vickers, C. T. Dourish and G. A. Kennett, *Neuropharmacology*, 2001,**41**, 200-209.
16. I. Sora, M. Igari, H. Yamamoto and K. Ikeda, *Nihon yakurigaku zasshi. Folia pharmacologica Japonica*, 2007,**130**, 450-454.
17. W. Wang, R. Lin, J. Zhang, Y. Mao, X. Bu, Q. Ji, X. Zhai, Q. Lin, L. Yang and K. Zhang, *Human & Experimental Toxicology*, 2012,**31**, 1092-1101.
18. H. Cho, J. Mu, J. K. Kim, J. L. Thorvaldsen, Q. W. Chu, E. B. Crenshaw, K. H. Kaestner, M. S. Bartolomei, G. I. Shulman and M. J. Birnbaum, *Science*, 2001,**292**, 1728-1731.
19. M.-C. Crouthamel, J. A. Kahana, S. Korenchuk, S.-Y. Zhang, G. Sundaresan, D. J. Eberwein, K. K. Brown and R. Kumar, *Clin. Cancer Res.*, 2009,**15**, 217-225.
20. J. D. Godin, G. Poizat, M. A. Hickey, F. Maschat and S. Humbert, *Embo Journal*, 2010,**29**, 2433-2445.
21. J. R. Horowitz, A. Rivard, R. vanderZee, M. Hariawala, D. D. Sheriff, D. D. Esakof, G. M. Chaudhry, J. F. Symes and J. M. Isner, *Arteriosclerosis Thrombosis And Vascular Biology*, 1997,**17**, 2793-2800.
22. E. S. Robinson, E. V. Khankin, S. A. Karumanchi and B. D. Humphreys, *Semin. Nephrol.*, 2010,**30**, 591-601.
23. R. H. Yang, G. R. Thomas, S. Bunting, A. Ko, N. Ferrara, B. Keyt, J. Ross and H. K. Jin, *J. Cardiovasc. Pharmacol.*, 1996,**27**, 838-844.
24. M. Salvi and A. Toninello, *Toxicology And Applied Pharmacology*, 2001,**176**, 92-100.
25. M. B. Wolf and J. W. Baynes, *Biochimica Et Biophysica Acta-General Subjects*, 2006,**1760**, 267-271.
26. A. Yano, M. Kubota, K. Iguchi, S. Usui and K. Hirano, *Biological & Pharmaceutical Bulletin*, 2006,**29**, 1006-1009.
27. M. G. Spiga, D. A. Weidner, C. Trentesaux, R. D. LeBoeuf and J. P. Sommadossi, *Antiviral Research*, 1999,**44**, 167-177.
28. L. Vijaykrishnan, R. Venkataramanan and P. Gulati, *Trends In Pharmacological Sciences*, 2011,**32**, 25-34.
29. A. I. Idris, S. H. Ralston and R. J. van't Hof, *Eur. J. Pharmacol.*, 2009,**602**, 215-222.
30. X. Wan, A. T. Dennis, C. Obejero-Paz, J. L. Overholt, J. Heredia-Moya, K. L. Kirk and E. Ficker, *J. Biol. Chem.*, 2011,**286**, 2843-2852.
31. D. Wrzesniok, E. Buszman, E. Karna and J. Palka, *Pharmazie*, 2005,**60**, 439-443.
32. S. Arastu-Kapur, J. L. Anderl, M. Kraus, F. Parlati, K. D. Shenk, S. J. Lee, T. Muchamuel, M. K. Bennett, C. Driessen, A. J. Ball and C. J. Kirk, *Clin. Cancer Res.*, 2011,**17**, 2734-2743.

File S5 The program for PubMed search

```
#!/usr/bin/perl
use LWP::Simple;
open(IN,"adrrpsefctchss.txt")||die"$!";##adrrpsefctchss.txt records the names of
predicted ADRRPs
open(OUT,">adrrpsefctch_text.txt")||die"$!";
my $utils = "http://www.ncbi.nlm.nih.gov/entrez/eutils/";
my $db = "pubmed";
my
$sideterm=('side+effect"[title/abstract])+OR+("side+effects"[title/abstract])+OR+("o
ff+target+effect"[title/abstract])+OR+("off+target+effects"[title/abstract])+OR+("adve
rse+event"[title/abstract])+OR+("adverse+events"[title/abstract])+OR+("adverse+reac
tion"[title/abstract])+OR+("adverse+reactions"[title/abstract])+OR+("toxicity"[title/ab
stract]');
my
$targetterm='target[title/abstract]+OR+associates[title/abstract]+OR+binds[title/abstra
ct]+OR+binding[title/abstract]+OR+interacts[title/abstract]+OR+acts[title/abstract]+
OR+actives[title/abstract]+OR+inhibits[title/abstract]';
my
$relation='cause[title/abstract]+OR+causes[title/abstract]+OR+caused[title/abstract]+
OR+("lead+to"[title/abstract])+OR+induces[title/abstract]+OR+induced[title/abstract]
+OR+induce[title/abstract]+OR+("results+in"[title/abstract]');

while(<IN>){
    chomp;
    my $query1 =$_;
    my
        $query
        =
        'journal+AND+(drug[title/abstract]+OR+compound[title/abstract]+OR+"small+molec
ule"[title/abstract]+OR+"small+molecules"[title/abstract]+OR+ligand[title/abstract])+
AND+'.("$sideterm.")."+AND+'.("$targetterm.")."+AND+'.("$relation.")."+
AND+'.("$query1.");
    my $esearch = $utils."esearch.fcgi?".
        "db=$db&usehistory=y&term=$query";
    my $esearch_result = get($esearch);
    my $web = $1 if ($esearch_result =~ /<WebEnv>(\$+)</WebEnv>/);
    my $key = $1 if ($esearch_result =~ /<QueryKey>(\d+)</QueryKey>/);
    my $count = $1 if ($esearch_result =~ /<Count>(\d+)</Count>/);
    #print OUT "$esearch_result\n";
    print OUT "$query1//TEXT_COUNT=$count\n";
    $retmax=1;
    for ($retstart=0;$retstart<$count;$retstart+= $retmax) {
        $efetch_url=$utils."efetch.fcgi?db=$db&WebEnv=$web";
        $efetch_url.="&query_key=$key&retstart=$retstart";
    }
}
```

```
        $fetch_url."&retmax=$retmax&rettype=abstract&retmode=text";  
        $fetch_out=get($fetch_url);  
        print OUT "$fetch_out\n";  
        # print OUT "$id\t$title\t$journal\t$ab_text\n";  
    }  
}  
close IN;  
close OUT;
```