

Supplementary 4. Common genes between MS and urological diseases after filtering with DisGeNET score

Gene symbol	gene_dsi	gene_pli	ei	score	geneid	gene_dpi
TNFRSF1A	0.409	0.9949	0.97	0.5	7132	0.923
CD40	0.396	0.84603	0.958	0.5	958	0.846
IL7R	0.487	3.76E-07	0.982	0.5	3575	0.769
HLA-DRB1	0.333	0.0011	0.923	0.5	3123	0.923
IL2RA	0.389	0.054709	0.985	0.5	3559	0.885
KIF1B	0.516	1	1	0.46	23095	0.808
HLA-DRA	0.581	0.51949	1	0.44	3122	0.769
STAT4	0.471	0.7662	1	0.43	6775	0.769
TNFAIP3	0.481	0.99972	1	0.42	7128	0.808
TNFSF14	0.529	0.051663	1	0.42	8740	0.769
APOE	0.338	0.001869	0.877	0.4	348	0.962
IL10	0.281	0.005887	0.922	0.4	3586	0.923
IL17A	0.324	0.043049	0.986	0.4	3605	0.923
VDR	0.352	1.68E-05	0.891	0.4	7421	0.885
IFNG	0.288	0.47156	0.97	0.4	3458	0.962
IL7	0.464	0.92574	0.947	0.4	3574	0.808
HLA-DPB1	0.453	5.33E-10	0.88	0.4	3115	0.923
IL1RN	0.373	0.030914	0.722	0.4	3557	0.923
IL1B	0.276	0.13005	0.905	0.4	3553	0.962
P2RX7	0.45	3.33E-11	1	0.4	5027	0.808
NLRP3	0.361	0.000811	1	0.4	114548	0.962
HLA-DQB1	0.407	0.008926	0.912	0.4	3119	0.885
ICAM1	0.364	0.035295	0.846	0.4	3383	0.962
IRF8	0.539	0.94807	0.9	0.4	3394	0.808
IFNB1	0.421	NA	0.958	0.4	3456	0.846
CNR1	0.446	0.50652	1	0.37	1268	0.808
GC	0.489	2.73E-11	0.75	0.37	2638	0.885
CASP1	0.413	3.52E-05	1	0.36	834	0.885
SLC11A1	0.525	1.55E-19	0.667	0.35	6556	0.846
POMC	0.356	0.000117	1	0.34	5443	0.846
CLDN11	0.623	0.91076	1	0.34	5010	0.731
SELE	0.447	7.91E-10	1	0.33	6401	0.808
NECTIN2	0.575	0.96926	0.667	0.33	5819	0.769
PDCD1	0.402	0.41706	1	0.33	5133	0.846
VCAM1	0.422	0.79791	1	0.33	7412	0.808
IL12A	0.491	0.04746	1	0.32	3592	0.808
MCAM	0.514	0.00016	1	0.31	4162	0.731
RBPJ	0.518	0.99853	1	0.31	3516	0.808
BCHE	0.447	1.06E-13	1	0.3	590	0.923
TNF	0.231	0.8033	0.88	0.3	7124	0.962
PRF1	0.54	5.49E-06	1	0.22	5551	0.692

Supplementary 4. Common genes between MS and urological diseases after filtering with DisGeNET score

HLA-DQA1	0.416	0.023947	0.884	0.2	3117	0.846
HLA-A	0.37	0.00133	0.919	0.2	3105	0.846
STAT3	0.32	1	1	0.2	6774	0.923
HLA-B	0.379	3.86E-05	1	0.2	3106	0.885
CYP27B1	0.502	1.92E-07	0.905	0.2	1594	0.769
IL23R	0.466	0.00056	0.889	0.18	149233	0.769
CD226	0.548	0.03921	1	0.18	10666	0.769
GPC5	0.626	3.99E-10	1	0.17	2262	0.654
MAPK1	0.33	0.99698	1	0.16	5594	0.923
IFIH1	0.471	6.98E-44	1	0.16	64135	0.808
NR1H3	0.566	0.90374	1	0.16	10062	0.692
ATG5	0.462	0.97758	1	0.16	9474	0.885
ERG	0.453	0.96413	1	0.15	2078	0.808
PTPN22	0.438	3.49E-21	0.6	0.14	26191	0.846
CCR6	0.485	0.005787	1	0.14	1235	0.808
MGAT5	0.638	0.99998	1	0.14	4249	0.5
CCR3	0.527	0.000126	1	0.13	1232	0.808
FCRL3	0.612	5.97E-21	1	0.13	115352	0.769
CXCR5	0.524	0.72861	1	0.13	643	0.769
ITGAM	0.443	3.31E-11	1	0.13	3684	0.808
CD86	0.483	0.94879	1	0.13	942	0.769
RGS1	0.653	0.78178	0.75	0.13	5996	0.731
NOTCH4	0.534	2.05E-23	1	0.13	4855	0.731
GFI1	0.546	0.25492	1	0.12	2672	0.769
SP140	0.691	5E-08	0.75	0.12	11262	0.577
MERTK	0.531	2.66E-11	1	0.12	10461	0.692
MMEL1	0.606	1.24E-22	1	0.12	79258	0.692
HSPA1L	0.603	1.06E-06	1	0.12	3305	0.654
RPS6KB1	0.511	0.97285	1	0.12	6198	0.731
HLA-DRB4	0.565	NA	1	0.11	3126	0.846
AHI1	0.513	1.08E-25	1	0.11	54806	0.846
VMP1	0.674	0.96271	0.667	0.11	81671	0.462
ZNF433	0.89	0.012227	1	0.11	163059	0.154
SLC2A4RG	0.615	0.21856	1	0.11	56731	0.692
ZBTB46	0.716	0.80852	1	0.11	140685	0.5
MALT1	0.532	0.98651	1	0.11	10892	0.769
TNFSF15	0.531	0.002816	1	0.11	9966	0.692
TRAF3	0.541	0.99869	1	0.11	7187	0.769
HLA-DMB	0.638	0.002463	1	0.11	3109	0.615
MST1	0.465	4.78E-19	1	0.11	4485	0.885
IRGM	0.617	NA	1	0.11	345611	0.538
ERBB3	0.448	1.7E-15	1	0.11	2065	0.808

Supplementary 4. Common genes between MS and urological diseases after filtering with DisGeNET score

IQGAP1	0.56	0.99754	1	0.11	8826	0.692
IGHA1	0.617	NA	1	0.11	3493	0.692
ZMIZ1	0.588	0.99937	1	0.11	57178	0.615
CTSH	0.626	1.25E-08	1	0.11	1512	0.654
ATXN2	0.482	0.85289	1	0.11	6311	0.808
IL13	0.386	0.014426	1	0.11	3596	0.846
HLA-DQA2	0.617	1.01E-05	1	0.11	3118	0.769
LRP2	0.491	0.99999	1	0.11	4036	0.846
BTNL2	0.546	8.56E-11	1	0.11	56244	0.808
BACH2	0.539	0.99803	1	0.11	60468	0.731
ICOSLG	0.601	0.000355	1	0.11	23308	0.654
TET2	0.458	4.33E-54	1	0.11	54790	0.808
CFB	0.532	4.67E-16	1	0.11	629	0.769
PVT1	0.495	NA	0.667	0.11	5820	0.731
IL2RB	0.491	0.29095	1	0.11	3560	0.846
MMP2	0.333	0.83878	0.909	0.1	4313	0.923
KCNMA1	0.518	0.99731	1	0.1	3778	0.846
MEFV	0.44	1.02E-14	0.917	0.1	4210	0.885
LEP	0.349	0.46491	0.917	0.1	3952	0.846
FOXP3	0.368	0.99424	1	0.1	50943	0.846
TNXB	0.572	0.018547	1	0.1	7148	0.731
CIITA	0.536	1.36E-07	0.882	0.1	4261	0.808
RGS14	0.751	0.002317	1	0.1	10636	0.346
NFE2L2	0.357	0.003572	1	0.1	4780	0.885
SKAP2	0.653	0.001284	1	0.1	8935	0.577
PCAT1	0.575	NA	1	0.1	1.01E+08	0.615
CASC19	0.769	NA	1	0.1	1.03E+08	0.423
IL23A	0.415	0.35806	0.947	0.1	51561	0.846
SIRPG	0.821	3.48E-15	1	0.1	55423	0.231
PHGDH	0.484	0.000133	1	0.1	26227	0.885
TCF19	0.674	0.000938	1	0.1	6941	0.692
HLA-DRB9	0.682	NA	1	0.1	3132	0.654
IL18	0.365	0.030717	0.909	0.1	3606	0.923
MACIR	0.691	0.42746	1	0.1	90355	0.462
MIR326	0.56	NA	1	0.1	442900	0.731
HORMAD2	0.716	7.14E-05	1	0.1	150280	0.385
SH3BP2	0.623	1.16E-11	1	0.1	6452	0.654
PRKD2	0.666	0.99995	1	0.1	25865	0.538
ZFP36L1	0.659	0.67406	1	0.1	677	0.5
CD28	0.436	0.35779	1	0.1	940	0.885
GLIS3	0.59	5.6E-08	1	0.1	169792	0.654
ELMO1	0.608	0.89997	1	0.1	9844	0.615

Supplementary 4. Common genes between MS and urological diseases after filtering with DisGeNET score

MIR155	0.384	NA	1	0.1	406947	0.885
TNIP1	0.564	0.47559	1	0.1	10318	0.769
CDC37	0.695	0.90925	1	0.1	11140	0.5
CXCL10	0.378	0.36865	0.909	0.1	3627	0.885
MBP	0.51	0.28446	0.939	0.1	4155	0.885
AGBL2	0.644	3.96E-16	1	0.1	79841	0.654
HLA-C	0.415	1.57E-06	1	0.1	3107	0.846
SPRED2	0.711	2.87E-07	1	0.1	200734	0.577
PLP1	0.543	0.92845	0.909	0.1	5354	0.769
TRBV20OR9-2	0.403	NA	0.917	0.1	6962	0.923
SLC44A4	0.678	1E-14	1	0.1	80736	0.615
LPP	0.543	0.007191	1	0.1	4026	0.769
MIR146A	0.398	NA	0.9	0.1	406938	0.885
PXT1	1	2.52E-06	1	0.1	222659	0.077
EHMT2-AS1	0.78	NA	1	0.1	1.06E+08	0.462
MS	0.599	NA	0.981	0.1	4397	0.692
ZBTB38	0.663	0.99949	1	0.1	253461	0.615
FAS	0.372	0.8117	0.929	0.1	355	0.923
CYP21A2	0.525	0.00026	1	0.1	1589	0.769
DDAH1	0.604	0.002797	1	0.1	23576	0.615
CRYAB	0.515	0.02247	1	0.1	1410	0.731
MBTPS1	0.532	7.59E-09	1	0.1	8720	0.692
EHMT2	0.59	0.000103	1	0.1	10919	0.808
HACE1	0.601	6.08E-06	1	0.1	57531	0.692
AQP4	0.456	0.002292	0.97	0.1	361	0.885
MYNN	0.722	0.57129	1	0.1	55892	0.423
CDR3	0.472	NA	1	0.1	8163	0.808
MPO	0.377	7.11E-15	1	0.1	4353	0.923
JAZF1	0.582	0.89582	1	0.1	221895	0.654
RNF5	0.716	3.7E-05	1	0.1	6048	0.538
IL6	0.248	0.31536	0.957	0.1	3569	0.962
PPT2-EGFL8	0.792	NA	1	0.1	1.01E+08	0.462
ACE	0.328	1.03E-37	0.727	0.1	1636	0.923
PPT2	0.751	0.004542	1	0.1	9374	0.5
MS4A1	0.411	5.08E-05	1	0.1	931	0.846
PSORS1C1	0.656	0.000265	1	0.1	170679	0.731
RREB1	0.5	1	1	0.1	6239	0.808
S1PR1	0.546	0.73269	1	0.1	1901	0.769
IFNA13	0.374	NA	1	0.1	3447	0.923
RNASEL	0.579	1.95E-10	1	0.1	6041	0.692
ISG20	0.414	0.002899	1	0.1	3669	0.846

Supplementary 4. Common genes between MS and urological diseases after filtering with DisGeNET score

GFAP	0.421	1.46E-06	1	0.1	2670	0.885
TLR4	0.321	4.61E-09	0.947	0.1	7099	0.962
HLA-DMA	0.608	0.002381	1	0.1	3108	0.654
IL12A-AS1	0.633	NA	1	0.1	1.02E+08	0.654
FAM107A	0.674	8.28E-07	1	0.1	11170	0.462
ATG16L1	0.543	0.96452	1	0.1	55054	0.769
CDKAL1	0.617	0.016021	1	0.1	54901	0.615
CD40LG	0.414	0.72079	0.923	0.1	959	0.846
ITPR3	0.555	2.55E-22	1	0.1	3710	0.808
SPEF2	0.792	3.12E-25	1	0.1	79925	0.269
TOP3A	0.656	5.1E-11	1	0.1	7156	0.615
HLA-DRB5	0.608	3.64E-07	0.967	0.1	3127	0.731
LRRK2	0.51	2.58E-30	1	0.1	120892	0.808
CHI3L1	0.419	1.11E-05	1	0.1	1116	0.885
CDSN	0.585	0.46391	1	0.1	1041	0.731
IL1A	0.333	0.00016	0.875	0.1	3552	0.962
SPP1	0.353	2.15E-06	0.885	0.1	6696	0.885
LINC02605	0.49	NA	0.9	0.1	1.13E+08	0.769
NEFL	0.488	NA	0.968	0.1	4747	0.769
SPATA2	0.556	0.97889	1	0.1	9825	0.615
WWOX	0.453	1.24E-15	1	0.1	51741	0.808
TIMP1	0.38	0.4993	1	0.1	7076	0.885
TSPAN31	0.556	0.21925	1	0.1	6302	0.654
PTPRC	0.435	1	0.867	0.1	5788	0.808
CDH3	0.56	2.8E-10	1	0.1	1001	0.615
NCOA5	0.631	0.99926	1	0.1	57727	0.692
HCG22	0.736	NA	1	0.1	285834	0.423
RBM45	0.383	2.11E-10	0.922	0.1	129831	0.846
CTLA4	0.369	0.94085	0.86	0.1	1493	0.923
IL4	0.332	0.004737	0.929	0.1	3565	0.962
KRT20	0.388	9.08E-11	1	0.1	54474	0.846
HLA-G	0.461	1.37E-11	0.909	0.1	3135	0.769
C2	0.617	1.35E-16	1	0.1	717	0.692
STK19	0.691	6.74E-09	1	0.1	8859	0.5
CCL5	0.403	0.001752	0.933	0.1	6352	0.885
BRD2	0.45	0.99957	1	0.1	6046	0.808
LAMC2	0.389	2.88E-12	1	0.1	3918	0.923
NCOA2	0.575	1	1	0.1	10499	0.615
POU5F1	0.441	0.95371	1	0.1	5460	0.846
IL21	0.441	0.6254	0.8	0.1	59067	0.769
DKKL1	0.839	0.000398	1	0.1	27120	0.269
TLR2	0.361	1.02E-06	1	0.1	7097	0.923

Supplementary 4. Common genes between MS and urological diseases after filtering with DisGeNET score

MTHFR	0.337	3.21E-10	0.5	0.1	4524	0.885
BDNF	0.345	0.65626	0.975	0.1	627	0.923
TNFSF10	0.413	0.13495	0.909	0.1	8743	0.885
MOG	0.546	0.13748	0.972	0.1	4340	0.731
PPARG	0.358	0.029194	0.9	0.1	5468	0.885
CENPO	0.805	1.89E-09	1	0.1	79172	0.269
IL22	0.393	0.000188	1	0.1	50616	0.885
KIR3DL1	0.475	8.36E-14	0.818	0.1	3811	0.769
CTNNA3	0.612	1.02E-12	1	0.1	29119	0.692
SKIV2L	0.615	1.29E-22	1	0.1	6499	0.654
CCL2	0.321	0.60786	0.85	0.1	6347	0.962
AGAP2	0.729	0.99816	1	0.1	116986	0.385
MAZ	0.617	0.94363	1	0.1	4150	0.654
ERVW-1	0.505	NA	1	0.1	30816	0.692
TEF	0.686	0.63291	1	0.1	7008	0.538
TSBP1	0.638	1.48E-16	1	0.1	10665	0.692
HLA-F	0.631	3.28E-05	1	0.1	3134	0.654
CD24	0.472	NA	0.929	0.1	1E+08	0.769
NPEPPS	0.519	1	1	0.1	9520	0.808
RASGRP1	0.572	0.96554	1	0.1	10125	0.731
TSPO	0.444	0.000274	1	0.1	706	0.885
IL2	0.336	0.47968	0.967	0.1	3558	0.885
TNFSF13B	0.46	0.98193	1	0.1	10673	0.731
TTC34	0.89	6.48E-11	1	0.1	1E+08	0.192
ETS1	0.444	0.7816	1	0.1	2113	0.731
TRAF1	0.554	0.003564	1	0.1	7185	0.731
PRRC2A	0.656	1	1	0.1	7916	0.654
IFNA1	0.371	NA	1	0.1	3439	0.923
MLANA	0.579	1.26E-09	1	0.1	2315	0.692
FOXP1	0.46	0.99998	1	0.1	27086	0.808
CCR5	0.398	4.31E-10	0.839	0.1	1234	0.885
SLC9A8	0.736	2.91E-10	1	0.1	23315	0.5
HLA-DQB2	0.573	0.042679	1	0.1	3120	0.731
CD69	0.488	0.029691	1	0.1	969	0.923
GEM	0.467	1.18E-08	0.833	0.1	2669	0.769
TSBP1-AS1	0.638	NA	1	0.1	1.02E+08	0.692
ZGPAT	0.653	0.000383	1	0.1	84619	0.654
DLEU1	0.569	0.47033	1	0.1	10301	0.692
CISH	0.5	0.000539	1	0.1	1154	0.808
PXK	0.821	0.010847	1	0.1	54899	0.231
CSF2	0.33	0.83468	0.981	0.1	1437	0.962
MMP9	0.305	1.89E-17	0.927	0.1	4318	0.923

Supplementary 4. Common genes between MS and urological diseases after filtering with DisGeNET score