

**Supplementary Table S1.** Associations of 141 published genome-wide association study single nucleotide polymorphisms for autoimmune diseases with those for dermatomyositis, in decreasing order of statistical significance\*

Gene Name	SNP Marker	Original SNP:LD	Position (hg19)	P	OR (CI)	FDR	Primary SNP Disease Source
PLCL1	rs7572733	rs6738825:0.979	chr2:198929806	6.183E-06	0.80 (0.72-0.88)	0.000890352	SLE [17]
PLCL1	rs1518364	rs6738825:0.958	chr2:198809975	0.00005113	1.22 (1.11-1.35)	0.00368136	SLE [17]
BLK	rs2736340	rs2736340	chr8:11343973	0.0000653	1.25 (1.12-1.40)	0.0031344	RA [14]
PLCL1	rs938929	rs6738825:0.958	chr2:198780860	0.00008322	1.22 (1.10-1.34)	0.00299592	SLE [40]
CCL21	rs2492358	rs951005:1.0	chr9:34737828	0.0002093	0.77 (0.67-0.88)	0.00602784	RA [14]
CCL21	rs951005	rs951005	chr9:34743681	0.000317	0.77 (0.67-0.89)	0.007608	RA [14]
PTPN2	rs1893217	rs1893217	chr18:12809340	0.002887	1.22 (1.07-1.38)	0.059389714	T1D [19]
STAT4	rs7574865	rs7574865	chr2:191964633	0.004957	1.18 (1.05-1.32)	0.089226	RA [14]
IL2RA	rs7072793	rs10795791:1.0	chr10:6106266	0.007268	1.14 (1.04-1.26)	0.116288	RA [14]
ORMDL3	rs2290400	rs2290400	chr17:38066240	0.009969	1.14 (1.03-1.25)	0.1435536	T1D [19]
STAT4	rs3821236	rs3821236	chr2:191902758	0.0102	1.17 (1.04-1.32)	0.133527273	RA [41]
SH2B3	rs653178	rs653178	chr12:112007756	0.01378	0.89 (0.80-0.98)	0.16536	RA [14]
PLCL1	rs11692344	rs6738825:0.958	chr2:198795863	0.01483	1.18 (1.03-1.35)	0.164270769	SLE [17]

SH2B3	rs3184504	rs3184504	chr12:111884608	0.01487	0.89 (0.81-0.98)	0.152948571	RA [14]
IRF5	rs10488631	rs10488631	chr7:128594183	0.01502	1.20 (1.04-1.39)	0.144192	RA [14]
STAT4	rs6752770	rs6752770	chr2:191973563	0.02556	1.13 (1.01-1.26)	0.23004	RA [42]
ORMDL3	rs8067378	rs8067378	chr17:38051348	0.02631	1.12 (1.01-1.23)	0.222861176	T1D [19]
ORMDL3	rs9303277	rs2290400:0.934	chr17:37976469	0.02806	0.90 (0.81-0.99)	0.22448	T1D [19]
PXK	rs6445975	rs6445975	chr3:58370177	0.03209	1.12 (1.01-1.25)	0.243208421	SLE [16]
ORMDL3	rs7216389	rs2290400:1.0	chr17:38069949	0.03343	1.11 (1.01-1.23)	0.240696	T1D [19]
C6orf173	rs1490388	rs9388489:0.956	chr6:126835655	0.03466	0.90 (0.82-0.99)	0.237668571	T1D [19]
SLC15A4	rs1385374	rs1385374	chr12:129300694	0.03683	1.18 (1.01-1.37)	0.241069091	SLE [16]
C16orf75	rs12928822	rs12928822	chr16:11403893	0.0388	0.87 (0.77-0.99)	0.242921739	GSE [25]
C6orf173	rs9388489	rs9388489	chr6:126698719	0.03931	0.90 (0.82-0.99)	0.23586	T1D [19]
GLIS3	rs7041847	rs7020673:0.936	chr9:4287466	0.04206	1.11 (1.00-1.22)	0.2422656	T1D [19]
IKZF1	rs4132601	rs10272724:1.0	chr7:50470604	0.04277	0.89 (0.80-1.00)	0.23688	T1D [20]
IKZF3	rs2305480	rs2872507:0.978	chr17:38062196	0.04552	1.11 (1.00-1.22)	0.242773333	RA [14]
IKZF3	rs907092	rs2872507:0.937	chr17:37922259	0.04783	1.10 (1.00-1.22)	0.245982857	RA [14]
Unknown	rs7090512	rs7090512	chr10:6110829	0.05247	0.90 (0.81-1.00)	0.26054069	MS [26]]
FUT2	rs504963	rs281379:0.935	chr19:49208865	0.05683	1.10 (1.00-1.21)	0.272784	IBD_CD [22]
NKX2-3	rs11190140	rs11190140	chr10:101291593	0.05946	1.10 (1.00-1.21)	0.27620129	IBD_CD [21]

Unknown	rs12122721	rs11584383:0.977	chr1:200984480	0.05966	1.11 (1.00-1.23)	0.26847	IBD_CD [21]
TNFRSF1A	rs1800693	rs1800693	chr12:6440009	0.06158	0.91 (0.82-1.00)	0.268712727	MS [26]
AIRE	rs760426	rs760426	chr21:45715814	0.06383	1.13 (0.99-1.29)	0.270338824	RA [15]
TNFRSF1A	rs1860545	rs1800693:0.937	chr12:6446777	0.06603	0.91 (0.82-1.01)	0.271666286	MS [26]
Unknown	rs737911	rs5753037:0.937	chr22:30399417	0.0684	1.10 (0.99-1.22)	0.2736	T1D [19]
FUT2	rs676388	rs281379:1.0	chr19:49211969	0.08384	1.09 (0.99-1.20)	0.326296216	IBD_CD [22]
TRAF6	rs1046864	rs540386:1.0	chr11:36510547	0.09008	0.88 (0.76-1.02)	0.341355789	RA [14]
VEGFA	rs881375	rs881375	chr9:123652898	0.09764	1.09 (0.98-1.21)	0.351504	SLE [17]
DDX6	rs715412	rs4938573:0.966	chr11:118684610	0.09937	0.90 (0.80-1.02)	0.349006829	RA [42]
Unknown	rs41156	rs5753037:0.957	chr22:30404653	0.1015	1.09 (0.98-1.20)	0.348	T1D [19]
UBE2L3	rs2298428	rs5754217:1.0	chr22:21982892	0.1029	1.11 (0.98-1.25)	0.344595349	SLE [16]
Unknown	rs5753037	rs5753037	chr22:30581722	0.1066	1.09 (0.98-1.20)	0.348872727	T1D [19]
LRRC18- WDFY4	rs1913517	rs1913517	chr10:50119054	0.1166	0.92 (0.84-1.02)	0.37312	SLE [16]
IL12B	rs10045431	rs10045431	chr5:158814533	0.1185	0.92 (0.82-1.02)	0.370956522	IBD_CD [21]
TRAF1	rs1953126	rs1953126	chr9:123640500	0.1198	1.09 (0.98-1.20)	0.367046809	SLE [17]
CD247	rs864537	rs840016:1.0	chr1:167411384	0.1307	0.93 (0.84-1.02)	0.3921	RA [14]
PRICKLE1	rs1796377	rs4768412:0.906	chr12:42813780	0.1361	1.08 (0.98-1.19)	0.391968	AITD [24]

PRICKLE1	rs896555	rs4768412:0.906	chr12:42830503	0.1361	1.08 (0.98-1.19)	0.384282353	AITD [24]
BACH2	rs4707609	rs1847472:0.929	chr6:90946479	0.1364	1.08 (0.98-1.19)	0.377723077	AITD [24]
Unknown	rs1534428	rs1534422:1.0	chr2:12643443	0.1434	1.08 (0.98-1.19)	0.389615094	T1D [19]
SPRED2	rs6711791	rs934734:0.958	chr2:65579228	0.1453	1.08 (0.98-1.19)	0.387466667	RA [14]
PRDM1	rs6568431	rs6568431	chr6:106588806	0.1465	1.08 (0.97-1.19)	0.383563636	SLE [16]
WDFY4	rs10508907	rs11101442:1.0	chr10:49950336	0.1573	0.93 (0.84-1.03)	0.404485714	SLE [40]
PTGER4c	rs4613763	rs4613763	chr5:40392728	0.1723	1.10 (0.96-1.27)	0.435284211	IBD_CD [21]
Unknown	rs1534422	rs1534422	chr2:12640741	0.1841	1.07 (0.97-1.18)	0.457075862	T1D [19]
DDX6	rs10892286	rs4938573:0.903	chr11:118642085	0.1856	0.92 (0.82-1.04)	0.452989831	RA [42]
CDKAL1	rs7748720	rs6908425:0.931	chr6:20689945	0.1998	0.93 (0.82-1.04)	0.47952	IBD_CD [21]
IKZF1	rs4917014	rs4917014	chr7:50305863	0.2008	1.07 (0.96-1.19)	0.474019672	SLE [16]
Unknown	rs2297909	rs11584383:0.954	chr1:200960307	0.2048	1.07 (0.96-1.19)	0.475664516	IBD_CD [21]
FGFR1OP	rs2236313	rs2236313	chr6:167360389	0.2059	0.94 (0.85-1.04)	0.470628571	AITD [24]
Unknown	rs1456988	rs4900384:0.947	chr14:98488007	0.2132	1.07 (0.96-1.19)	0.4797	T1D [19]
OR4A51	rs7109436	rs7927370:1.0	chr11:55141349	0.2153	0.88 (0.72-1.08)	0.476972308	SLE [40]
TLE3	rs8026898	rs8026898	chr15:69991417	0.2197	1.07 (0.96-1.19)	0.479345455	RA [42]
C11orf30	rs7130588	rs7927894:0.955	chr11:76270683	0.2236	0.94 (0.85-1.04)	0.480573134	IBD_CD [21]
Unknown	rs8049439	rs8049439	chr16:28837515	0.2406	1.06 (0.96-1.17)	0.509505882	IBD_CD [23]

Unknown	rs2664170	rs2664170	chrX:153945602	0.2487	1.09 (0.94-1.25)	0.519026087	T1D [19]
FCGR2A	rs12722986	rs10494360:1.0	chr1:161465420	0.2594	1.09 (0.94-1.25)	0.533622857	RA [14]
CD40	rs6074022	rs6074022	chr20:44740196	0.2684	0.94 (0.84-1.05)	0.544360563	RA [14]
CDKAL1	rs6908425	rs6908425	chr6:20728731	0.2776	0.94 (0.83-1.05)	0.5552	IBD_CD [21]
PRICKLE1	rs3213989	rs4768412:0.976	chr12:42863801	0.2785	1.06 (0.96-1.17)	0.549369863	AITD [24]
FCGR2A	rs10494360	rs10494360	chr1:161475750	0.2862	1.08 (0.94-1.25)	0.55692973	RA [14]
Unknown	rs485186	rs281379:0.914	chr19:49207206	0.287	1.07 (0.94-1.23)	0.55104	IBD_CD [23]
CD226	rs1788103	rs763361:0.936	chr18:67538824	0.2912	1.05 (0.96-1.16)	0.551747368	T1D [19]
IL12A	rs17810546	rs17810546	chr3:159665050	0.3001	0.92 (0.79-1.08)	0.561225974	SLE [17]
CD226	rs1790588	rs763361:0.936	chr18:67535184	0.3072	1.05 (0.95-1.16)	0.567138462	T1D [19]
CD226	rs763361	rs763361	chr18:67531642	0.3088	1.05 (0.95-1.16)	0.562875949	T1D [19]
KIF5A	rs11172254	rs1678542:1.0	chr12:57968738	0.3301	0.95 (0.86-1.05)	0.59418	RA [14]
OR4A15	rs10501336	rs7927370:1.0	chr11:55315519	0.3563	0.91 (0.74-1.11)	0.633422222	SLE [40]
IL27	rs12446550	rs4788084:0.929	chr16:28543381	0.3601	1.05 (0.95-1.15)	0.632370732	T1D [19]
Unknown	rs5979785	rs5979785	chrX:12971524	0.3681	1.07 (0.92-1.24)	0.638631325	T1D [18]
ICOSLG	rs743479	rs762421:1.0	chr21:45611950	0.3716	1.05 (0.95-1.15)	0.637028571	IBD_CD [21]
IL27	rs4788084	rs4788084	chr16:28539848	0.3729	1.05 (0.95-1.15)	0.631736471	T1D [19]
ITLN1	rs2274910	rs2274910	chr1:160852046	0.3775	0.95 (0.86-1.06)	0.632093023	IBD_CD [21]

BACH2	rs10806425	rs10806425	chr6:90926612	0.3867	1.04 (0.95-1.15)	0.640055172	AITD [2]
IL6R	rs4537545	rs8192284:0.953	chr1:154418879	0.3873	1.04 (0.95-1.15)	0.633763636	RA [42]
CD58	rs758518	rs2300747:0.954	chr1:117081810	0.3907	0.93 (0.79-1.10)	0.63214382	MS [26]
Unknown	rs1456896	rs1456893:0.976	chr7:50304461	0.4094	0.96 (0.86-1.06)	0.65504	IBD_CD [21]
REL	rs13031237	rs13031237	chr2:61136129	0.4118	1.04 (0.94-1.15)	0.65163956	RA [14]
CD58	rs1335532	rs2300747:1.0	chr1:117100957	0.4322	0.94 (0.81-1.09)	0.676486957	MS [26]
PRKCQ	rs1570527	rs4750316:1.0	chr10:6404700	0.4342	0.95 (0.84-1.08)	0.672309677	RA [14]
ATG5	rs2496737	rs2245124:0.975	chr6:34904872	0.4418	1.04 (0.94-1.15)	0.6768	SLE [16]
Unknown	rs7804356	rs7804356	chr7:26891665	0.4615	1.04 (0.93-1.17)	0.699536842	T1D [19]
Unknown	rs2188962	rs2188962	chr5:131770805	0.4693	1.04 (0.94-1.14)	0.70395	IBD_CD [21]
MST1b	rs4625	rs3197999:0.921	chr3:49572140	0.4812	1.04 (0.94-1.15)	0.714358763	IBD_CD [21]
CLEC16A	rs998592	rs12599402:0.952	chr16:11199678	0.4821	0.97 (0.88-1.06)	0.708391837	T1D [19]
PRKCQ	rs10796045	rs4750316:1.0	chr10:6402741	0.4919	0.96 (0.85-1.08)	0.715490909	RA [14]
POU3F1	rs883220	rs883220	chr1:38616871	0.4957	0.96 (0.86-1.08)	0.713808	RA [42]
IL23R	rs11209026	rs11465804:1.0	chr1:67705958	0.5035	1.07 (0.88-1.30)	0.717861386	IBD_CD [21]
Unknown	rs1551398	rs1551398	chr8:126540051	0.5053	1.03 (0.94-1.14)	0.713364706	IBD_CD [21]
PTPRC	rs1932435	rs10919563:0.936	chr1:198712469	0.5082	0.95 (0.82-1.10)	0.710493204	RA [14]
REL	rs13017599	rs13031237:1.0	chr2:61164331	0.5132	1.03 (0.94-1.14)	0.710584615	RA [14]

Unknown	rs425105	rs425105	chr19:47208481	0.5222	0.96 (0.83-1.10)	0.71616	T1D [19]
FCGR2A	rs1801274	rs1801274	chr1:161479745	0.534	0.97 (0.88-1.07)	0.725433962	SLE [16]
TAGAP	rs1738074	rs1738074	chr6:159465977	0.5407	0.97 (0.88-1.07)	0.720933333	T1D [19]
TNFSF15	rs6478109	rs4263839:0.977	chr9:117568766	0.5413	0.97 (0.87-1.08)	0.715111927	IBD_CD [21]
TNFRSF14	rs3748816	rs3748816	chr1:2526746	0.5462	1.03 (0.93-1.15)	0.715025455	RA [14]
IRAK1/MECP2	rs2269368	rs2269368	chrX:153189819	0.5563	1.06 (0.88-1.27)	0.721686486	SLE [16]
IL27	rs7193402	rs4788084:0.908	chr16:28586127	0.5609	0.97 (0.88-1.07)	0.721157143	T1D [19]
TNFRSF14	rs3890745	rs3890745	chr1:2553624	0.5618	1.03 (0.93-1.15)	0.715922124	RA [14]
Unknown	rs3764147	rs3764147	chr13:44457925	0.5624	0.97 (0.86-1.09)	0.7104	IBD_CD [21]
NFATC2IP	rs8045689	rs8045689	chr16:28988269	0.5638	1.03 (0.93-1.15)	0.705975652	RA [14]
IL6R	rs4129267	rs8192284:0.977	chr1:154426264	0.5731	1.03 (0.93-1.14)	0.711434483	RA [42]
CCR5	rs6441961	rs11711054:1.0	chr3:46352384	0.5802	0.97 (0.87-1.08)	0.714092308	T1D [19]
IL18RAP	rs917997	rs917997	chr2:103070568	0.5832	1.03 (0.92-1.16)	0.711701695	T1D [19]
PTPN22	rs2476601	rs2476601	chr1:114377568	0.5882	1.04 (0.89-1.23)	0.711771429	RA [14]
Unknown	rs1050152	rs2188962:0.955	chr5:131676320	0.6688	1.02 (0.93-1.13)	0.80256	IBD_CD [21]
CD226	rs727088	rs727088	chr18:67530439	0.672	1.03 (0.90-1.18)	0.799735537	T1D [19]
Unknown	rs2157453	rs9286879:1.0	chr1:172863948	0.6945	0.98 (0.87-1.10)	0.819737705	IBD_CD [21]
RGS1	rs2816316	rs2816316	chr1:192536813	0.7132	0.98 (0.86-1.11)	0.834965854	T1D [19]

Unknown	rs1736148	rs1736135:1.0	chr21:16813212	0.714	1.02 (0.92-1.12)	0.82916129	IBD_CD [21]
IL18RAP	rs13015714	rs917997:1.0	chr2:102971865	0.7293	1.02 (0.91-1.15)	0.8401536	T1D [19]
CLEC16A	rs725613	rs12599402:0.905	chr16:11169683	0.7331	1.02 (0.92-1.12)	0.837828571	T1D [19]
TAGAP	rs169858	rs394581:0.93	chr6:159484776	0.7433	0.98 (0.88-1.09)	0.84279685	RA [14]
IL6R	rs11265618	rs7543174:0.902	chr1:154430092	0.7506	0.98 (0.86-1.11)	0.844425	RA [14]
IL23R	rs11465804	rs11465804	chr1:67702526	0.7683	1.03 (0.84-1.26)	0.857637209	IBD_CD [21]
MST1b	rs3197999	rs3197999	chr3:49721532	0.773	1.02 (0.91-1.13)	0.856246154	IBD_CD [21]
Unknown	rs1465788	rs1465788	chr14:69263599	0.7969	0.99 (0.88-1.10)	0.875981679	T1D [19]
IL27	rs4788073	rs4788084:0.908	chr16:28594549	0.8072	0.99 (0.89-1.09)	0.880581818	T1D [19]
IL6R	rs7543174	rs7543174	chr1:154527672	0.8181	0.99 (0.87-1.12)	0.885762406	RA [14]
PHRF1/IRF7	rs4963128	rs4963128	chr11:589564	0.8701	0.99 (0.90-1.10)	0.935032836	SLE [16]
IL2	rs4505848	rs4505848	chr4:123132492	0.8725	0.99 (0.89-1.10)	0.930666667	T1D [19]
INS	rs7111341	rs7111341	chr11:2213166	0.8779	0.99 (0.89-1.11)	0.929541176	T1D [19]
IL7R	rs6897932	rs6897932	chr5:35874575	0.9026	1.01 (0.90-1.12)	0.948718248	T1D [19]
OR4A15	rs7927370	rs7927370	chr11:55136219	0.9352	0.99 (0.81-1.21)	0.97586087	SLE [17]
Unknown	rs10517086	rs10517086	chr4:26085511	0.9384	1.00 (0.90-1.12)	0.972155396	T1D [19]
IL2RA	rs12251307	rs12251307	chr10:6123495	0.9661	1.00 (0.87-1.16)	0.993702857	T1D [19]
PRKCQ	rs7082071	rs11258747:0.971	chr10:6470587	0.9714	1.00 (0.89-1.13)	0.992068085	T1D [19]



IL2	rs7699742	rs4505848:1.0	chr4:123264485	0.9759	1.00 (0.90-1.11)	0.98964507	T1D [19]
BANK1	rs10516487	rs10516487	chr4:102751076	0.989	1.00 (0.90-1.11)	0.995916084	SLE [16]

\*AITD = autoimmune thyroid disease; GSE = gluten-sensitive enteropathy; IBD\_CD = inflammatory bowel disease\_Crohn's Disease; MS = multiple sclerosis; RA, rheumatoid arthritis; SLE = systemic lupus erythematosus; T1D = type 1 diabetes; SNP marker = directly genotyped SNP in the dermatomyositis samples by GWAS; Original SNP = original 141 SNPs associated with autoimmune diseases, if not directly genotyped; LD = linkage disequilibrium in  $r^2$  with SNP marker directly genotyped in the dermatomyositis samples on Illumina arrays; BP = base pair in hg19/build37 coordinate; OR = odds ratio; CI = 95% confidence interval;  $P$  = fixed effect  $P$  value in meta-analysis for all dermatomyositis cases; FDR = false discovery rate