Supplementary data file S-5: Mouse models of SLE as defined in the Mouse Genome Informatics Database (http://www.informatics.jax.org/) [1].

Human Disease	Term: **Systemic Lupus Erythematosus; SLE** **OMIM ID:** 152700

Associated Genes

Orthologous mouse and human markers where mutations in one or both species have been associated with phenotypes characteristic of this disease.

Mouse Gene	Human Gene	Characteristics of this human disease are associated with mutations in...
Dnase1 **Fcgr2b** **Ptpn22**	**DNASE1** **FCGR2B** **PTPN22**	**...both mouse and human orthologous genes.**
Lyz2 **C1qa** **C4b** **Ccr2** **Cd19** **Cd4** **Cdkn1a** **Csf2**	none identified C1QA C4B CCR2 CD19 CD4 CDKN1A CSF2	**...the mouse gene.** *OMIM data currently do not associate this disease with the orthologous human gene.*

Def6	DEF6
Ep300	EP300
Fas	FAS
Gadd45a	GADD45A
Ikzf3	IKZF3
Il3	IL3
Junb	JUNB
Kit	KIT
Lyn	LYN
Man2a1	MAN2A1
Mta2	MTA2
Pparg	PPARG
Psen1	PSEN1
Psen2	PSEN2
Ptprc	PTPRC
Rasgrp1	RASGRP1
Rassf5	RASSF5
Rc3h1	RC3H1
Rxra	RXRA
Tnfrsf13b	TNFRSF13B
Tnfrsf9	TNFRSF9
Trove2	TROVE2

	Bank1	**BANK1**	**...the human gene.** *MGI data currently do not associate this disease with mutations in the orthologous mouse gene.*
	C4a	**C4A**	
	Fasl	**FASLG**	
	Fcgr4	**FCGR3A**	
	Itgax	**ITGAX**	
	Pdcd1	**PDCD1**	
	none identified	**SLEB1**	
	none identified	**SLEB3**	
	none identified	**SLEB4**	
	none identified	**SLEB5**	
	none identified	**SLEH1**	
	Stat4	**STAT4**	
	Trex1	**TREX1**	
Transgenes and other mutation types	Igh	Characteristics of this human disease are associated with transgenes and other mutation types in mouse.	

Genotype			Ref(s)
Allelic Composition	Note	Genetic Background	
Models with phenotypic similarity to human disease where etiologies involve orthologs.[1]			
Dnase1^{tm1Tmo}/Dnase1^{tm1Tmo}		involves: 129P2/OlaHsd * C57BL/6	J:62549
Fcgr2b^{tm1Ttk}/Fcgr2b^{tm1Ttk}		B6.129S4-Fcgr2b^{tm1Ttk}	J:64152
Ptpn22^{tm2Achn}/Ptpn22^{tm2Achn} Ptprc^{tm1Weis}/Ptprc^{tm1Weis}		B6.Cg-Ptprc^{tm1Weis} Ptpn22^{tm2Achn}	J:147129
Models with phenotypic similarity to human disease where etiologies are distinct.[2]			
C1qa^{tm1Mjw}/C1qa^{tm1Mjw}		involves: 129P2/Ola * 129S/SvEv * C57BL/6	J:47315
C4b^{tm1Crr}/C4b^{tm1Crr}		involves: 129S4/SvJae * C57BL/6J	J:111811
Ccr2^{tm1Blck}/Ccr2^{tm1Blck} Fas^{lpr}/Fas^{lpr}		MRL.Cg-Ccr2^{tm1Blck} Fas^{lpr}	J:113343
Cd19$^{tm1(cre)Cgn}$/Cd19^{+} Ep300^{tm2Reck}/Ep300^{+}	5	involves: 129/Sv * 129P2/OlaHsd * C57BL/6	J:147840
Cd4^{tm1Mak}/Cd4^{tm1Mak} Igh-J$^{tm2(3H9-VDJ*)Mwg}$/Igh-J^{+}		B6.Cg-Cd4^{tm1Mak} Igh-J$^{tm2(3H9-VDJ*)Mwg}$	J:142389
Cdkn1a^{tm1Led}/Cdkn1a^{tm1Led} Gadd45a^{tm1Ajf}/Gadd45a^{tm1Ajf}		either: (involves: 129P2/OlaHsd * 129S6/SvEvTac * C57BL/6) or (involves: 129S6/SvEvTac * 129X1/SvJ * C57BL/6)	J:76041
Cdkn1a^{tm1Led}/Cdkn1a^{tm1Led}		involves: 129S6/SvEvTac	J:76041
Csf2^{tm1Dran}/Csf2^{tm1Dran} Il3^{tm1Glli}/Il3^{tm1Glli}		B6.129S2-Csf2^{tm1Dran} Il3^{tm1Glli}	J:83086
Def6$^{Gt(OST307148)Lex}$/Def6$^{Gt(OST307148)Lex}$		involves: 129S5/SvEvBrd * C57BL/6	J:106469
Fas^{lpr}/Fas^{lpr} Tnfrsf9^{tm1Byk}/Tnfrsf9^{tm1Byk}		MRL.Cg-Tnfrsf9^{tm1Byk} Fas^{lpr}	J:120559
Fas^{lpr}/Fas^{lpr} Igh-J$^{tm2(3H9-VDJ*)Mwg}$/Igh-J^{+}		MRL.Cg-Fas^{lpr} Igh-J$^{tm2(3H9-VDJ*)Mwg}$	J:131138
Fas^{lpr}/Fas^{lpr}		MRL/Mp-Fas^{lpr}	J:27634, J:28885,J:108760, J:131138
Gadd45a^{tm1Ajf}/Gadd45a^{tm1Ajf}		either: (involves: 129P2/OlaHsd * C57BL/6) or (involves: 129X1/SvJ * C57BL/6)	J:76041
Ikzf3^{tm1Kge}/Ikzf3^{tm1Kge}		involves: 129S4/SvJae * C57BL/6	J:50626, J:81805

Junb^{tm3Wag}/Junb^{tm3Wag} Tg(KRT5-cre)1Tak/0	5	involves: 129/Sv * 129P2/OlaHsd * C3H * C57BL/6	J:155575
Kit^{W-sh}/Kit^{W-sh} Lyn^{tm1Ard}/Lyn^{tm1Ard}		involves: 101 * 129P2/OlaHsd * C3H/HeH	J:161523
Lyn^{tm1Ard}/Lyn^{tm1Ard}		involves: 129P2/OlaHsd	J:161523
Lyz2$^{tm1(cre)Ifo}$/Lyz2^{+} Rxra^{tm1Krc}/Rxra^{tm1Krc}	5	involves: 129P2/OlaHsd * 129S4/SvJae * C57BL/6	J:168799
Lyz2$^{tm1(cre)Ifo}$/Lyz2^{+} Pparg$^{tm1.1Gonz}$/Pparg$^{tm1.1Gonz}$	5	involves: 129P2/OlaHsd * 129X1/SvJ * C57BL/6	J:168799
Man2a1^{tm1Jxm}/Man2a1^{tm1Jxm}		involves: 129S1/Sv * 129X1/SvJ * C57BL/6	J:74579
Mta2$^{tm1.1Yzha}$/Mta2$^{tm1.1Yzha}$		involves: 129S4/SvJae * C57BL/6 * FVB/N	J:137101
Psen1^{tm1Bdes}/Psen1^{+} Psen2^{tm1Bdes}/Psen2^{tm1Bdes}		involves: 129P2/OlaHsd	J:91235
Ptprc^{tm1Weis}/Ptprc^{tm1Weis}		involves: 129X1/SvJ * C57BL/6	J:66501
Ptprc^{tm1Weis}/Ptprc^{+}		involves: 129X1/SvJ * C57BL/6	J:66501
Rasgrp1^{lag}/Rasgrp1^{lag}		involves: 129 * C57BL/6	J:85189
Rassf5^{tm1Kina}/Rassf5^{tm1Kina}		B6.Cg-Rassf5^{tm1Kina}	J:168749
Rc3h1^{san}/Rc3h1^{san}		either: C57BL/6-Rc3h1^{san} or (involves: C57BL/6 * CBA/Ca)	J:98938
Tnfrsf13b^{tm1Vmd}/Tnfrsf13b^{tm1Vmd}		involves: C57BL/6	J:82331
Trove2^{tm1Woln}/Trove2^{tm1Woln}		involves: 129S1/Sv * C57BL/6	J:84627
Trove2^{tm1Woln}/Trove2^{tm1Woln}		B6.129S1-Trove2^{tm1Woln}	J:84627
Trove2^{tm1Woln}/Trove2^{+}		involves: 129S1/Sv * C57BL/6	J:84627
Models involving transgenes or other mutation types.[3]			
Cd4^{tm1Mak}/Cd4^{tm1Mak} Igh-J$^{tm2(3H9-VDJ*)Mwg}$/Igh-J^{+}		B6.Cg-Cd4^{tm1Mak} Igh-J$^{tm2(3H9-VDJ*)Mwg}$	J:142389
Fas^{lpr}/Fas^{lpr} Igh-J$^{tm2(3H9-VDJ*)Mwg}$/Igh-J^{+}		MRL.Cg-Fas^{lpr} Igh-J$^{tm2(3H9-VDJ*)Mwg}$	J:131138
Igh-J$^{tm2(3H9-VDJ*)Mwg}$/Igh-J^{+}		B6.129P2-Igh-J$^{tm2(3H9-VDJ*)Mwg}$	J:142389
Igh$^{tm1(Igh564)Tik}$/Igh$^{tm1(Igh564)Tik}$ Igk$^{tm1(Igk564)Tik}$/Igk$^{tm1(Igk564)Tik}$		B6.129S4-Igk$^{tm1(Igk564)Tik}$ Igh$^{tm1(Igh564)Tik}$	J:113555
Tcrb^{tm1Mom}/Tcrb^{tm1Mom} Tcrd^{tm1Mom}/Tcrd^{tm1Mom}		B6.129P2-Tcrb^{tm1Mom} Igh-J$^{tm2(3H9-VDJ*)Mwg}$ Tcrd^{tm1Mom}	J:142389

Igh-J$^{tm2(3H9\text{-}VDJ^*)Mwg}$/Igh-J$^+$			
Tg(ACTB-TNFRSF6B)754Jwu/?		B6.Cg-Tg(Actb-TNFRSF6B)754Jwu	J:148162
Tg(Igh-V-CD40lg)#Tsub/0		C57BL/6-Tg(Igh-V-CD40lg)#Tsub	J:128824
X/Yaa		BXSB	J:7308, J:108760
X/Yaa		BXSB/Mp	J:6235
X/Yaa		(NZW x BXSB)F1	J:7276
X/Yaa		(NZW x SB)F1	J:7276
X/Yaa		(NZB x BXSB)F1	J:6235
X/Yaa		BXSB/MpJScr	J:10973
No similarity to the expected human disease phenotype was found.[4]			
NOT	Csf2^{tm1Dran}/Csf2^{tm1Dran} Ifng^{tm1Ts}/Ifng^{tm1Ts} Il3^{tm1Glli}/Il3^{tm1Glli}	involves: 129S2/SvPas * 129S7/SvEvBrd * C57BL/6	J:83086

[1]Human genes are associated with this disease. Mouse model genotypes include mutations in the orthologs of these human genes.
[2]Human genes are associated with this disease. Mouse model genotypes do not include mutations in the orthologs of these human genes.
[3]Models involving transgenes or other mutation types may also appear in other sections of the table.
[4]One or more human genes are associated with this human disease. The mouse genotype may involve mutations to orthologs of one or more of those genes, but the phenotype did not resemble the disease.
[5]Conditionally targeted allele(s)

References:

1. Blake JA, Bult CJ, Kadin JA, Richardson JE, Eppig JT. The Mouse Genome Database (MGD): premier model organism resource for mammalian genomics and genetics. Nucleic Acids Res 2011;39(Database issue):D842-8.