	1	11	21	31	41	51	61 	71	81	91 I	101	111
C57BL			EDSPDNDSPD							VTKERDQFRD	EISQLRMHIN	DLKASKCVLG
AKR DBA												
129 LG/J												
MOL												
BAC CAS1												
CAS2 SPR1			L									
SPR2				s			D					
MAC1 SPI1												
CAR1				EN		V	D					
CAR2 CER												
DUN COO			K	EN	L		D	GQL	ASCFWH.WI.	*		
FAM				EN			D					
MIN PLA			S									
	121	131	141	151	161	171	181	191	201	211	221	231
C57BL	 FTLLSVPHPT	FVGEKOTEAL	 IVRLADVOSO				 WWEDTDSEGS	FFAFT.DTVLA		ALSKERTOOD		 TSLVTSEDVT
AKR												
DBA 129												
LG/J												
MOL BAC												
CAS1 CAS2			· · · · · · · · · · · · · · · · · · ·							F		
SPR1		K	R				T			L		
SPR2 MAC										L		
SPI												
CAR1 CAR2			L									
CER DUN			L									
C00			L	Q			D.T			I*		
FAM MIN			L	 т		D	D.T	к ря	 Р	.S	K EV N	
PLA			L	ITF			D	.KAS.			VR.N	A
	241 	251 	261 	271	281	291 	301 	311 	321 	331 	341	351 
C57BL AKR	 RPKSLSDLTS	 QKHRHTNHEL	261   NSLAHSNRQK	 AKEHARKWIL	 RVWDNGGRLT	 ILDQIEFLSL	 GPLSLDSEFN	 VIARTVEDNG	 VKSLFDWLAE	 AWVQRWPTTR	 ELQSPDTLEW	 YSIEDGIERL
AKR DBA	 RPKSLSDLTS	QKHRHTNHEL	 NSLAHSNRQK	AKEHARKWIL	RVWDNGGRLT	 ILDQIEFLSL	 GPLSLDSEFN	UIARTVEDNG	 VKSLFDWLAE	AWVQRWPTTR	ELQSPDTLEW	YSIEDGIERL 
AKR DBA 129 LG/J	 RPKSLSDLTS	QKHRHTNHEL	 NSLAHSNRQK Q	AKEHARKWIL	RVWDNGGRLT	 ILDQIEFLSL	GPLSLDSEFN	UIARTVEDNG	VKSLFDWLAE	AWVQRWPTTR	ELQSPDTLEW	YSIEDGIERL K .FK .FK
AKR DBA 129 LG/J MOL	 RPKSLSDLTS	QKHRHTNHEL	 NSLAHSNRQK Q	AKEHARKWIL	RVWDNGGRLT	 ILDQIEFLSL	 GPLSLDSEFN	UIARTVEDNG	UKSLFDWLAE	AWVQRWPTTR	ELQSPDTLEW	J    YSIEDGIERL   K.   K.    .FK.    .FK.
AKR DBA 129 LG/J MOL BAC CAS1	 RPKSLSDLTS	 QKHRHTNHEL	I NSLAHSNRQK	AKEHARKWIL	I RVWDNGGRLT	 ILDQIEFLSL	GPLSLDSEFN	 VIARTVEDNG	UKSLFDWLAE	AWVQRWPTTR	LQSPDTLEW	YSIEDGIERL K. .FK. .FK. .FK. .FK. .K.
AKR DBA 129 LG/J MOL BAC	 RPKSLSDLTS	 QKHRHTNHEL	 NSLAHSNRQK Q	AKEHARKWIL	I RVWDNGGRLT	ILDQIEFLSL	 GPLSLDSEFN	UIARTVEDNG	 VKSLFDWLAE	 AWVQRWPTTR	L ELQSPDTLEW	YSIEDGIERL K. .FK. .FK. .FK. .FK. .K.
AKR DBA 129 LG/J MOL BAC CAS1 CAS2 SPR1 SPR2	 RPKSLSDLTS	QKHRHTNHEL	 NSLAHSNRQK Q Q Q KQ.CQ KQ.CQ	I AKEHARKWIL	I RVWDNGGRLT	LDQIEFLSL	 GPLSLDSEFN	 VIARTVEDNG	 VKSLFDWLAE	AWVQRWPTTR	ELQSPDTLEW	I    YSIEDGIERL
AKR DBA 129 LG/J MOL BAC CAS1 CAS2 SPR1	 RPKSLSDLTS	QKHRHTNHEL	 NSLAHSNRQK Q Q KQ.C.Q KQ.C.Q KQ.C.Q KQ.C.Q KQ.C.Q	AKEHARKWIL	I RVWDNGGRLT	LIDQIEFLSL	GPLSLDSEFN	VIARTVEDNG	VKSLFDWLAE	AWVQRWPTTR	T. T. T.	J    YSIEDGIERL
AKR DBA 129 LG/J MOL BAC CAS1 CAS2 SPR1 SPR2 MAC SPI CAR1	PRKSLSDLTS	QKHRHTNHEL	 NSLAHSNRQK Q Q KQ.C.Q KQ.C.Q KQ.C.Q KQ.C.Q KQ.Q KQ.Q	AKEHARKWIL	I I RVWDNGGRLT	ILDQIEFLSL N. 	GPLSLDSEFN	UIARTVEDNG	 VKSLFDWLAE	AWVQRWPTTR P P P	T. T. T. T. T. T. T. T.	YSIEDGIERL K. FK. FK. FK. K. K. K. K. K. K. K.
AKR DBA 129 LG/J MOL BAC CAS1 CAS2 SPR1 SPR2 MAC SPI CAR1 CAR1 CAR2 CER	RPKSLSDLTS	QKHRHTNHEL	 NSLAHSNRQK Q Q KQ.C.Q KQ.C.Q KQ.C.Q KQ.C.Q KQ.C.Q	AKEHARKWIL	U NUMDIGGRLT	ILDQIEFLSL N. N. T.	GPLSLDSEFN	UIARTVEDNG	 VKSLFDWLAE	AWVQRWPTTR		YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA 129 LG/J MOL BAC CAS1 CAS2 SPR1 SPR2 MAC SPI CAR1 CAR2	RPKSLSDLTS	QKHRHTNHEL	 NSLAHSNRQK Q Q Q Q Q KQ.CQ KQ.CQ KQ.Q KQ.Q KQ.Q KQ.Y KQ.Y.	AKEHARKWIL	U NUMDIGGRLT	ILDQIEFLSL N. N. T.	GPLSLDSEFN	UIARTVEDNG	 VKSLFDWLAE	AWVQRWPTTR		YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA 129 LG/J MOL CAS1 CAS2 SPR1 SPR2 MAC SPI CAR1 CAR2 CER DUN COO FAM	RPKSLSDLTS	G	 NSLAHSNRQK 	AKEHARKWIL	RVWDNGGRLT	N TLDQIEFLSL	GPLSLDSEFN	UIARTVEDNG	 VKSLFDWLAE	AWVQRWPTTR	T	YSIEDGIERL YSIEDGIERL K. .FK. .FK. K. K. K. K. K. K.
AKR DBA 129 LG/J MOL BAC CAS1 CAS2 SPR1 SPR2 MAC SPI CAR1 CAR2 CER DUN COO	RPKSLSDLTS		 NSLAHSNRQK Q Q Q KQ.C.Q KQ.C.Q KQ.C.Q KQ.Q KQ.Q KQ.Q KQ.H.Q YQ	AKEHARKWIL	RVWDNGGRLT	ILDQIEFLSL 	GPLSLDSEFN	UIARTVEDNG	UKSLFDWLAE	AWVQRWPTTR P P P P P P P P	ELQSPDTLEW 	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA LG/J MOL CAS1 CAS2 SPR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR2 CAR2 CAR2 CAR2 CAR2 CAR2 CAR2	RPKSLSDLTS		 NSLAHSNRQK Q Q KQ.CQ KQ.CQ KQ.CQ KQ.Q KQ.Q KQ.Q YQ YQ YQ DL.Q KQA.R	AKEHARKWIL	RVWDNGGRLT	N. T	GPLSLDSEFN	 VIARTVEDNG 	UKSLFDWLAE	AWVQRWPTTR P P P P P P P P	ELQSPDTLEW 	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA 129 LG/J MOL BAC CAS2 SPR1 MAC SPR1 CAR2 CAR1 CAR2 CER DUN COO FAM MIN PLA	RPKSLSDLTS		 NSLAHSNRQK Q Q KQ.CQ KQ.CQ KQ.CQ KQ.CQ KQ.Q KQ.YQ YQ YQ YQ DLQ DLQ MQAR 381	AKEHARKWIL	401	ILDQIEFLSL 	GPLSLDSEFN	UTARTVEDNG	441	AWVQRWPTTR P. P. P. P. P. TTTF	ELQSPDTLEW 	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA 129 LG/J MOL BAC CAS1 CAS2 SPR1 CAS2 SPR1 CAS2 CAS1 CAS2 CAS1 CAS2 CAS1 CAS2 CAS1 CAS2 CAS1 CAS2 CAS1 CAS2 CAS2 CAS2 CAS2 CAS2 CAS2 CAS2 SPI1 CAS2 CAS2 SPI1 CAS2 CAS2 SPI1 CAS2 CAS2 SPI1 CAS2 CAS2 SPI1 CAS2 CAS2 SPI1 CAS2 CAS2 SPI1 CAS2 CAS2 SPI1 CAS2 CAS2 SPI1 CAS2 CAS2 SPI1 CAS2 CAS2 SPI1 CAS2 CAS2 CAS2 SPI1 CAS2 CAS2 SPI1 CAS2 CAS2 CAS2 SPI1 CAS2 CAS2 CAS2 CAS2 CAS2 CAS2 CAS2 CAS2	RPKSLSDLTS	QKHRHTNHEL 	 NSLAHSNRQK 	AKEHARKWIL AKEHARKWIL 	401 TwksfvFsll	ILDQIEFLSL 	GPLSLDSEFN	 VIARTVEDNG 	VKSLFDWLAE	AWVQRWPTTR P. P. P. P. P. P. P. TTTF	ELQSPDTLEW 	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA 129 LG/J MOL BAC CAS1 CAS2 SPR1 CAR2 CSPR2 MAC SPR2 CAR2 CER DUN CAR2 CCO FAM MIN PLA C57BL AKR DBA	 RPKSLSDLTS 	QKHRHTNHEL 	 NSLAHSNRQK 	AKEHARKWIL AKEHARKWIL 	ACT	 ILDQIEFLSL 	GPLSLDSEFN	 VIARTVEDNG 	 VKSLFDWLAE 	AWVQRWPTTR P. P. P. P. P. P. P. TTTF	ELQSPDTLEW 	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA 129 LG/J MOL BAC CAS1 CAS2 SPR1 CAR2 CER DUN CAR2 CER DUN CAR2 CER DUN CAR2 CER DUN CAR2 CAR1 CAR2 CER DUN CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR1 CAR2 CAR2 CAR1 CAR2 CAR1 CAR2 CAR2 CAR2 CAR2 CAR2 CAR2 CAR2 CAR2	 RPKSLSDLTS 		 NSLAHSNRQK Q Q Q KQ.C.Q KQ.C.Q KQ.C.Q KQ.Q KQ.Y KQ.H.Q YQ YQA.R 381   PEDVPITRAM	AKEHARKWIL AKEHARKWIL 	401 TWKSFVFSLL	ILDQIEFLSL 	GPLSLDSEFN	 VIARTVEDNG 	 VKSLFDWLAE 	AWVQRWPTTR P P P P P P P P P P P P C C C C C C C	ELQSPDTLEW 	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA DBA 129J LGJJ MOL BAC CAS1 CAS2 SPR1 CAS2 SPR1 CAR2 CER DUN COO FAM MIN PLA C57BL AKR DE9 LGJJ MOL	 RPKSLSDLTS 	QKHRHTNHEL 	 NSLAHSNRQK Q Q Q KQC.Q KQC.Q KQC.Q KQQ KQ.YQ YQ.H.Q YQAR 381 PEDVPITRAM	AKEHARKWIL AKEHARKWIL 	AUNDINGGRLT	ILDQIEFLSL 	GPLSLDSEFN	 VIARTVEDNG 	 VKSLFDWLAE 	AWVQRWPTTR P P P TTTP SPWKHQSNS* *	ELQSPDTLEW 	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA DBA 129J LG/JJ MOL BAC CAS1 SPR1 CAS2 SPR1 CAR2 CER DUN COO FAM MIN PLA C57BL AKR DBA 129 LG/JJ MOL BAC CAS1	 RPKSLSDLTS 	QKHRHTNHEL 	 NSLAHSNRQK Q Q Q KQC.Q KQC.Q KQC.Q KQQ KQ.YQ YQ.H.Q YQAR 381 PEDVPITRAM	AKEHARKWIL AKEHARKWIL 	AUNDINGGRLT	ILDQIEFLSL 	GPLSLDSEFN	 VIARTVEDNG 	 VKSLFDWLAE 	AWVQRWPTTR P P P TTTP SPWKHQSNS* *	ELQSPDTLEW 	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA 129 LG/J MOL BAC CAS1 CAS2 SPR1 CAR2 CS78L AKR DUN CCO FAM MIN PLA C57BL AKR DBA 129 LG/J MOL CAS1 CAS1 CAS2 SPR1	 RPKSLSDLTS 	QKHRHTNHEL 	 NSLAHSNRQK Q Q Q KQC.Q KQC.Q KQC.Q KQQ KQ.YQ YQ.H.Q YQAR 381 PEDVPITRAM	AKEHARKWIL AKEHARKWIL 	AUNDINGGRLT	ILDQIEFLSL 	GPLSLDSEFN	 VIARTVEDNG 	 VKSLFDWLAE 	AWVQRWPTTR P P P TTTP SPWKHQSNS* *	ELQSPDTLEW 	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA 129 LG/J MOL BAC CAS1 SPR1 CAS2 SPR1 SPR2 MAC SPI CAR1 CAR2 CER DUN COO FAM MIN PLA C57BL AKR DBA CS7BL AKR DBA CAS1 CAS2 SPR1 CAS2 SPR1 SPR2 SPR2 SPR2 SPR2	 RPKSLSDLTS 		 NSLAHSNRQK 	AKEHARKWIL AKEHARKWIL 	4 01 TWKSFVFSLL	ILDQIEFLSL 	GPLSLDSEFN	 VIARTVEDNG 	 VKSLFDWLAE 	AWVQRWPTTR 	ELQSPDTLEW 	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA DI29 LG/JJ MOL BAC CAS1 CAS2 SPR1 SPR2 MAC CAS2 CER DUN COO FAM MIN PLA C57BL AKR DBA C57BL AKR DBA C257BL CAS1 CCAS2 SPR1 SPR2 MOC CAS1 CAS1 SPR2 SPR1 SPR1 SPR2 SPR1 SPR1 SPR1 SPR1 SPR1 SPR1 SPR1 SPR1	RPKSLSDLTS	QKHRHTNHEL 	 NSLAHSNRQK 	AKEHARKWIL AKEHARKWIL 	401 TWKSFVFSLL	ILDQIEFLSL 	GPLSLDSEFN	UIARTVEDNG	VKSLFDWLAE VKSLFDWLAE	AWVQRWPTTR 	SNS*	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA 129 LG/J MOL BAC CAS1 CAS2 SPR1 CAR2 CER DUN CAR2 CER DUN CAR2 CER DUN CAR2 CER DUN CAR2 CER DUN CAR2 CER DUN CAR1 CAR2 CAS1 CAS2 SPR1 DBA LG/J MOL CAS1 CAS2 SPR1 SPR2 MAC	 RPKSLSDLTS 		 NSLAHSNRQK Q Q Q KQ.CQ KQ.CQ KQ.CQ KQ.Y.Q Y.Q.MQ Y.Q.MQ Y.Q.MQ Y.Q.MQ Y.Q.MQ Y.Q.CN QA.R 381 PEDVPITRAM	AKEHARKWIL AKEHARKWIL 	401 TWKSFVFSLL	ILDQIEFLSL 	GPLSLDSEFN 	 VIARTVEDNG 	VKSLFDWLAE VKSLFDWLAE 441 SVGSVGVLSL * * * AGLASVGSVG AGLASVGSVG AGLASVGSVG AGLASVGSVG	AWVQRWPTTR 	SNS*	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA 129 LG/J MOL BAC CAS1 CAS2 SPR1 CAR2 CER MAC CAR1 CAR2 CER MAC C57BL DUN COO FAM MIN PLA C57BL DUN COO FAM MIN PLA C57BL DBAC CAR1 CAS2 SPR1 CAR2 SPR1 CAR2 CAR2 SPR1 CAR2 CCR2 SPR1 CAR2 CCR2 SPR1 CAR2 CCR2 CCR2 SPR1 CAR2 CCR2 CCR2 CCR2 CCR2 CCR2 CCR2 CCR2	 RPKSLSDLTS 	QKHRHTNHEL 	 NSLAHSNRQK Q Q KQ.CQ KQ.CQ KQ.CQ KQ.Q KQ.Q Y.	AKEHARKWIL AKEHARKWIL G.R.G.  E.  R.T. 391 RITFVRETRE RITFVRETRE V. V. V. V. V. V. V. V. V. V. V. V. V.	401 Twksfvfsll	ILDQIEFLSL 	GPLSLDSEFN	UIARTVEDNG	VKSLFDWLAE VKSLFDWLAE	AWVQRWPTTR AWVQRWPTTR P P P P P P P P P P P P P P P P P P	SNS*	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA 129 LG/J MOL BAC CAS1 CAS2 SPR1 CAR2 CER DUN COA FAM MIN PLA C57BL AKR DBA CS7BL AKR DBA CAS2 SPR1 CAR2 CER DBAC CAS1 CAS2 SPR1 CAS2 SPR1 CAS2 SPR1 CAS2 CER DCAS2 CCAS1 CCAS2 CCAS1 CCAS2 CC	 RPKSLSDLTS 		 NSLAHSNRQK 	AKEHARKWIL AKEHARKWIL 	401 TWKSFVFSLL	ILDQIEFLSL 	GPLSLDSEFN	 VIARTVEDNG 	VKSLFDWLAE VKSLFDWLAE	AWVQRWPTTR AWVQRWPTTR P P P P P P P P P P P P P P P P P P	SNS*	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA 129 J MOL BAC CAS1 CAS2 SPR1 CAS2 SPR1 CAR2 CER DUN COO FAM MIN PLA C57BL AKR DEA 129 LG/J BAC CAS1 CAS2 SPR1 DUN COO FAM SPR2 MAC CAS1 CAS2 SPR1 DIN CAS1 CAS2 CER DUN CAS1 CAS2 SPR1 DIN CAS1 CAS2 CER DUN CAS1 CAS2 CER DUN CAS1 CAS2 SPR1 DIN CAS1 CAS2 SPR1 DUN CAS1 CAS2 SPR1 CAS1 CAS2 SPR1 CAS2 SPR1 CAS2 SPR1 CAS1 CAS2 SPR1 CAS2 SPR1 CAS2 SPR1 CAS2 CER DUN CAS1 CAS2 SPR1 CAS1 CAS2 SPR1 CAS1 CAS2 SPR1 CAS1 CAS2 SPR1 CAS1 CAS2 SPR1 CAS1 CAS2 SPR1 CAS1 CAS2 SPR1 CAS1 CAS2 SPR1 CAS1 CAS2 SPR1 CAS2 CER CAS2 SPR1 CAS2 CER CAS2 CER CAS2 CER CAS2 CER CAS2 CER CAS2 CER CAS2 CAS2 CAS2 CAS2 CAS2 CAS2 CAS2 CAS2	 RPKSLSDLTS 		 NSLAHSNRQK 	AKEHARKWIL AKEHARKWIL 	401 TWKSFVFSLL	ILDQIEFLSL 	GPLSLDSEFN	 VIARTVEDNG 	VKSLFDWLAE VKSLFDWLAE	AWVQRWPTTR AWVQRWPTTR P P P P P P P P P P P P P P P P P P	SNS*	YSIEDGIERL K. .FK. .FK. .FK. .K.
AKR DBA DEA DEA DEA DEA DEA DEA CAS2 SPR1 CAS1 CAS2 SPR1 CAR1 CAR2 CER DUN COO FAM MIN PLA C57BL AKR DBA CS7BL AKR DBA CAS1 CAS2 SPR1 SPR2 SPR1 SPR2 CAR1 CAS2 SPR1 CAR2 CAS1 CAS2 SPR1 SPR1 SPR1 SPR1 SPR1 SPR1 SPR1 SPR1	 RPKSLSDLTS 		 NSLAHSNRQK 	AKEHARKWIL AKEHARKWIL 	401 TWKSFVFSLL	ILDQIEFLSL 	GPLSLDSEFN	 VIARTVEDNG 	VKSLFDWLAE VKSLFDWLAE	AWVQRWPTTR AWVQRWPTTR P P P P P P P P P P P P P P P P P P	SNS*	YSIEDGIERL K. .FK. .FK. .FK. .K.

## Figure S1

Comparison of the Fv1 sequence from different mice. Predicted amino acid sequence encoded by the *Fv1* gene from 20 different sources, compared to the *Fv1<sup>b</sup>* allele found in C57BL mice. Source designations are as given in Table 1A. Single letter amino acid code; . = identical to Fv1b; - = deletion; \* = stop.