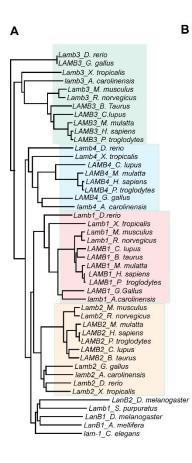
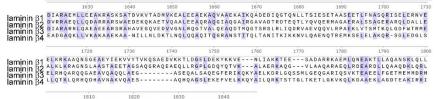
1 Supplementary Figures

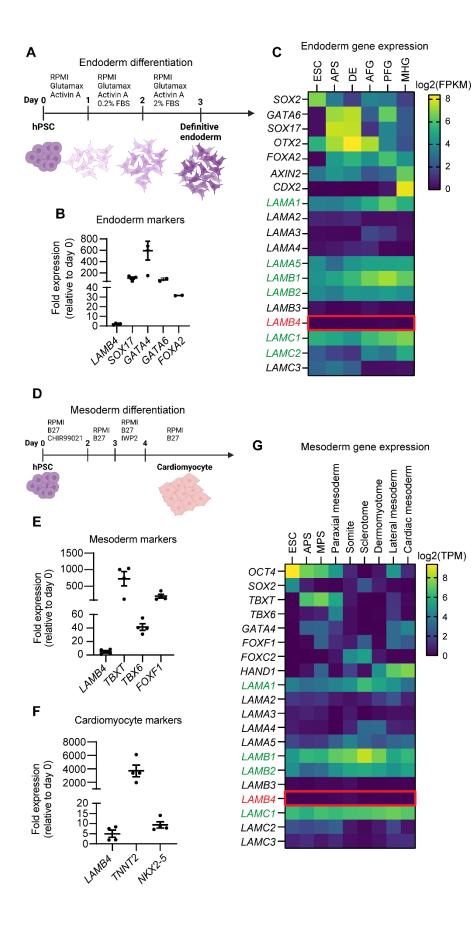


laminin	B1		10	20	30	40 RADEPEESYG	50 CAEGSCYPAT	60	70	80 IKPEPYCIVSH IGPQPYCIVSH IKPETYCTQ-Y	90
aminin	32	MELTSRER	GRGQPLPWEL	RLGLLLS	- V LAATI	AQAPAPDVPG	CSRGSCYPAT	GDLLVGRADE	RETASSTCOL	GPQPYCIVSH	LQ
laminin	<u></u>		M	QFQLTLFLHL	GWLS	YSKAQDD	CNRGACHPTT	GDLLVGRNTO	QLMASSTCGLS	RAQKYCILSY	LE
			100	110	120	130	140	150	160	170	180
laminin	ß1	EDKKCFIC	NSQDPYHETL	NPDSHLIENV	VTTFAPNEL	IWWQSENGVE	NVTIQUDUEA	EFHETHLIMT	FKTERPAAML	IERSSDFGKT VERSADFGRT IERSSDFGKT	WG
aminin	83	WQMKCCKC	DSRQPHNY	YSHRVENV	ASSSGPM	RWWQSQNDVN	PVSLQLDLDR	RFQLQEVMME	FQGPMPAGML	IERSSDFGKT	WR
laminin	β4	GEQKCFIC	DSRFPYDPYD	QPNSHIIENV	IVSFEPDREN	KWWQSENGLD	HVSIRLDLEA	LERESHLILI	IFKIERPAAML	VERSTDYGHN	WK
laminin	B1	VYPYEAYD	190	200	210	220	230	240	250	260	270
laminin	82	VYRYFSYDO	GADFPGVPL	APPRHWDDVV	CESRYSEIE-	PSTEGEVIYR	VLDPAIPIPD	PYSSRIQNLL	KITNLRVNLT	KLHTLGDNLLI RLHTLGDNLLI RLAPVPQRGY	DP
laminin	β 4	VEKYEAKD	CATSFPRURQ	GQAQGVGDIV	CDSKYSDIE-	PSTGGEVVLK	VLDPSFEIEN	PYSPYIQDLV	TLTNLRUNFT	KLHTLGDALL	GR
		3	280	290	300	310	320	330	340	350	360
										EGRNSNACKK	
aminin aminin	B3	HPPS	AYYAVSQLRL	QGSCFCHGHA	DRCAPKPGAS	AGP-STAVQV	HDVCVCQHNT	AGPNCERCAP	FYNNRPWRPA	EGQDAHECQR	CD
laminin	β4	RQNDSLDK	YYYALYEMIV	RGSCFCNGHA	SECRPMQKMF	8 G D V F S P P <mark>G M V</mark>	неосусонит	DGPNCERCKE	DFFQDAPWRPA	ADLQDNACRS	CS
			370	380	390	400	410	420	430	440	450
laminin Iaminin Iaminin	B1 B2	CHGHTHSCI	HFDMAVYLAS	GNVSGGVCDG	CQHNTAGRHO	ELCRPFFYRD	PTKDLRDPAV	CRSCDCDPMG	SQDGGRCDSH	TDFSTGLIAG DDPALGLVSG	QC
laminin	83 84	CNGHSETCI	HFDPAVFAAS HFDMTTYLAS	Q G A Y G G V C D N G G L S G G V C E D	CRDHTEGKNO	ERCQLHYFRN	RRPGASIQET PLKTISDPYA	CISCECDPDG	AVPGAPCDP -	SDPALGSVAG	Q C O C
i.a.	P. 1	1000 - 1000 - 1100					and the second				
laminin	ß1	RCKLNVEG	460 EHCDVCKEGF	470 YDLSSEDPFG	480 CKSCACNPLC	490 TIPGGNPCDS	500 ETGHCYCKRL	510 VTGOHCDOCL	520 PEHWGLSNDL	530 DGCRPCDCDL	540 6 G
aminin	32	RCKEHVVG	TRCQQCRDGF	FGLSISDRLG	CRRCQCNARG	TVPGSTPCDP	N S G S C Y C K R L	V T G R G C D R C L	P G H W G L S H D L	DGCRPCDCDL LGCRPCDCDV HGCSPCDCDI	GG
laminin	β 4	LCKENVEG	AKCDQCKPNH	YGLSATDPLG	CQPCDCNPLO	SLPF-LTCDV	DTGQCLCLSY	VTGAHCEECT	T V G Y <mark>W G L</mark> G N H L	HGCSPCDCDI	GG
		·	550	560	570	580	590	600	610	620	630
laminin laminin laminin	ß1					IVLYEAEEANL		GVSI	VERQYIQDRI	PSWTGAGEVR	P
laminin	33										
					DOVEEADINE	VIVEAFEATT		TECOCOAVUN	WI CEDUDOND	VITHITCOCEADY	
aminin	рŦ	AISHVUSEI	KNGQCECRPH	VTGRSCSEPA	PGYFFAPLNF		LQGLAPLGSE	TFGQSPAVHV	V LGEPVPGNP	VTWTGPGFAR	V L
amm	μŦ		640	650	660	670	680	690	700	710	720
laminin	61	EGAYLEFF	640 IDNIPYSMEY	650 DILIRYEPQL	660 PDHWEKAVIT	670 VQRPGRIPTS	680 SRCGNTIPDD	690 DNQVVSLSPG	700	710 CFEKGTNYTV CLEPGISYKL	720 R L
laminin laminin laminin	61 32 33	EGAYLEFF EGQTLEFL	640 IDNIPYSMEY VASVPKAMDY	650 DILIRYEPQL DLLLRLEPQV	660 PDHWEKAVIT PEQWAELELI	670 VQRPGRIPTS VQRPGPVPAH	680 SRCGNTIPDD SLCGHLVPKD	690 DNQVVSLSPG DRIQGTLQPH	700 SRYVVLPRPV ARYLIFPNPV	710 CFEKGTNYTV	720 R L H L
laminin Iaminin	61 32 33	EGAYLEFF EGQTLEFL	640 IDNIPYSMEY VASVPKAMDY	650 DILIRYEPQL DLLLRLEPQV	660 PDHWEKAVIT PEQWAELELI	670 VQRPGRIPTS VQRPGPVPAH	680 SRCGNTIPDD SLCGHLVPKD	690 DNQVVSLSPG DRIQGTLQPH	700 SRYVVLPRPV ARYLIFPNPV	710 CFEKGTNYTVI CLEPGISYKLI CLEPDVQYSII	720 R L H L
laminin laminin laminin laminin	β1 β2 β3 β4	EGAYLEFF EGQTLEFL PGAGLRFA ELPQYTSS	640 IDNIPYSMEY VASVPKAMDY VNNIPFPVDF 730	650 DILIRYEPQL DLLLRLEPQV TIAIHYETQS 740 YTLIDSLVLM	560 PDHWEKAVIT PEQWAELELI AADWTVQIVV 750 PYCKSLDIFT	670 VQRPGRIPTS VQRPGPVPAH -NPPGGS 760 VGGSGDGVVT	580 SRCGNTIPDD SLCGHLVPKD EHCIPKTLQS 770 NSAWETFQRY	690 DNQVVSLSPG DRIQGTLQPH KPQSFALPAA 780 RCLENSRSVV	700 SRYVVLPRPV ARYLIFPNPV TRIMLLPTPI 790 KKTPMTDVCRN	710 CFEKGTNYTVK CLEPGISYKLI CLEPDVQYSII 800 IIFSISALLHO	720 R L H L D V 810 2 T
laminin laminin laminin laminin	β1 β2 β3 β4	EGAYLEFF EGQTLEFL PGAGLRFA ELPQYTSS KLVRTGGS	640 IDNIPYSMEY VASVPKAMDY VNNIPFPVDF 730 DSDVESP AQPETPYSGP	650 DILIRYEPQU TIAIHYETQS 740 YTLIDSLVLM GLLIDSLVLL	000 PDHWEKAVIT PEQWAELELI AADWTVQIVV 750 PYCKSLDIFT PRVLVLEMFS	670 VQRPGRIPTS VQRPGPVPAH -NPPGGS 760 VGGSGDGVVT 6GDAAA	580 SRCGNTIPDD SLCGHLVPKD EHCIPKTLQS 770 NSAWETFQRY	690 DNQVVSLSPG DRIQGTLQPH KPQSFALPAA 780 RCLENSRSVV	700 SRYVVLPRPV ARYLIFPNPV TRIMLLPTPI 790 KKTPMTDVCRN	710 CFEKGTNYTVE CLEPGISYKLE CLEPDVQYSIE	720 R L H L D V 810 2 T
laminin laminin laminin	β1 β2 β3 β4	EGAYLEFF EGQTLEFL PGAGLRFA ELPQYTSS	640 IDNIPYSMEY VASVPKAMDY VNNIPFPVDF 730 DSDVESP AQPETPYSGP ESHAHS	650 DILIRYEPQU TIAIHYETQS 740 YTLIDSLVLM GLLIDSLVLL	660 PDHWEKAVIT PEQWAELELI AADWTVQIVV 750 PYCKSLDIFT PRVLVLEMFS PQINSLENFC	670 VQRPGRIPTS VQRPGPVPAH -NPPGGS 760 VGGSGDGVVT GGDAAA SKQDA	SRCGNTIPDD SRCGNTIPDD ELGIPKTLQS 770 NSAWETFQRY LERQATFERY	690 DNQVVSLSPG DRIQGTLQPH KPQSFALPAA 780 RCLENSRSVV QCHEEGLVPS NCVEIASAMG	700 SRYVVLPRPV ARYLIFPNPV TRIMLLPTPI 790 KTPMTDVCRN KTSPSEACAP	ZIO CFEKGTNYTVI CLEPGISYKLI CLEPDVQYSII SOO IIFSISALLHO LIISLSTLIVI	720 R L H L D V 810 Q T N G
laminin laminin laminin laminin	β1 β2 β3 β4	EGAYLEFF EGQTLEFL PGAGLRFA ELPQYTSS KLVRTGGS YFSQPLQG	640 IDNIPYSMEY VASVPKAMDY VNNIPFPVDF 730 DSDVESP AQPETPYSGP ESHAHS 820	650 DILIRYEPQL DILLREPQV TIAIHYETQS 740 YTLIDSLVEM GLLIDSLVEM GLLIDSLVEL HVEVDSLGET 830	660 PDHWEKAVIT PEQWAELELI AADWTVQIVV 750 PYCKSLDIFT PRVLVLEMFS PQINSLENFC 840	670 VQRPGRIPTS VQRPGS 760 VGGSGDGVVT GGDAAA SKQD 850	680 SRCGNTIPDD SLCGHLVPKD EHCIPKTLQS 770 NSAWETFQRY LERQATFERY LDEYQLH 860	690 DRQVVSLSPG DRQGTLQPH KPQSFALPAA 780 RCLENSRSVV QCHEEGLVPS NCVEIASAMG 870	700 SRYVVLPRPV ARYLIFPNPV TRIMLLPTPI 790 KTPMTDVCRN KTSPSEACAP PQVLPGACER 880	710 CFEKGTNYTVI CLEPGISYKLI CLEPGISYKLI CLEPDVQYSII S00 IIFSISALLHU LIISUSTLIYI LIISMSAKLHU 890	720 RL HL DV 810 2 T NG 900
laminin laminin laminin laminin laminin laminin laminin	61 52 53 53 53 53 53 53 54 55 55 54 55 55 54 55 55 54 55 55 55	EGAYLEFF EGQTLEFL PGAGLRFA ELPQYTSS KLVRTGGS YFSQPLQG GLACECDP1	640 TDNIPYSNEY VASVPKAHDY VNNIPFPVDF 	650 DILIRYEPQL DLLLRLEPQV TIAIHYETQS 740 YTLIDSLVLM GLLIDSLVLL HVLVDSLGLI 830	600 PDHWEKAVIT PEQWAELELI AADWTVQIVV 750 PYCKSLDIFT PRVLVLEMES PQINSLENEC 840 VVGRTCNRCA	670 VQRPGPVPAH - NPPGGS 760 VGGSGDGVVT GGDAAA SKQD 850 PGTFGFGPSG	680 SRCGNTIPDD SLCGHLVPKD EHCIPKTLQS 770 NSAWETFQRY LERQATFERY LDEYQLH 860 CKPCECHLQG	690 DNQVVSLSPG DRIQGTLQPH KPQSFALPAA 780 RCLENSRSVV QCHEEGLVPS NCVEIASAMG 870 SVNAFCNPVT	700 SRYVULPRPV ARYLIFPNPV TRIMLLPTPI 790 KTSPSEACAP PQVLPGACER 880 6QCHCFQGVY	ZIO CFEKGTNYTVI CLEPGISYKLI CLEPDVQYSII SOO IIFSISALLHO LIISLSTLIVI	720 RL HL DV 810 QT NG 900 HW
laminin laminin laminin laminin laminin laminin laminin laminin laminin	B1233 B1233	EGAYLEFF EGQTLEFL PGAGLRFA ELPQYTSS KLVRTGGS YFSQPLQG GLACECDP ALPCQCNP	640 IDNIPYSNEY VASVPKAHDY VNNIPFPVDF 730 	650 DILIRYEPQL DLLLRLEPQV TIAIHYETQS 740 YILIDSLVLM GLLIDSLVLL HVLVDSLGLI 830 NGGQCQCRPN HGGQCLCKPG	600 PDHWEKAVIT PEQWAELELI AADWTVQIVV 750 PYCKSLDIFT PRVLVLEMES PQINSLENEC 840 VVGRTCNRCA VVGRTCNRCA	670 VQRPGPVPAH -NPPGGS 760 VGGSGDGVVT GGDAAA SKQD 850 PGTFGFGPSG PGYGFGPTG	680 SRCGNTIPDD SLCGHLVPKD EHCIPKTLQS 770 NSAWETFQRY LERQATFERY LDEYQLH 860 CKPCECHLQG CQACQCSHEG	690 DNQVVSLSPG DRIQGTLQPH KPQSFALPAA 780 RCLENSRSVV QCHEEGLVPS NCVEIASANG 870 SVNAFCNPVT ALSSLCEKTS	700 SRYVVLPRPV ARYLIFPNPV TRIMLLPTPI 790 KTPMTDVCRN KTSPSEACAP PQVLPGACER 880 GQCHCFQGVY GQCLCRTGAF	710 CFEKGTNYTVI CLEPGISYKLI CLEPDVQYSII 500 IIFSISALLHU LIISLSTLIYI LIISMSAKLHI 890 ARQCDRCLPGF	720 RL HL 810 QT WG 900 HW
laminin laminin laminin laminin laminin laminin laminin	B1233 B1233	EGAYLEFF EGQTLEFL PGAGLRFA ELPQYTSS KLVRTGGS YFSQPLQG GLACECDPO AVACKCHPO	640 IDNIPYSNEY VASVPKAHDY VNNIPFPVDF 730 	650 DILIRYEPQL DLLLRLEPQV TIAIHYETQS 740 YILIDSLVLM GLLIDSLVLL HVLVDSLGLI 830 NGGQCQCRPN HGGQCLCKPG	600 PDHWEKAVIT PEQWAELELI AADWTVQIVV 750 PYCKSLDIFT PRVLVLEMES PQINSLENEC 840 VVGRTCNRCA VVGRTCNRCA	670 VQRPGPVPAH -NPPGGS 760 VGGSGDGVVT GGDAAA SKQD 850 PGTFGFGPSG PGYGFGPTG	680 SRCGNTIPDD SLCGHLVPKD EHCIPKTLQS 770 NSAWETFQRY LERQATFERY LDEYQLH 860 CKPCECHLQG CQACQCSHEG	690 DNQVVSLSPG DRIQGTLQPH KPQSFALPAA 780 RCLENSRSVV QCHEEGLVPS NCVEIASANG 870 SVNAFCNPVT ALSSLCEKTS	700 SRYVVLPRPV ARYLIFPNPV TRIMLLPTPI 790 KTPMTDVCRN KTSPSEACAP PQVLPGACER 880 GQCHCFQGVY GQCLCRTGAF	710 CFEKGTNYTVI CLEPDVQYSII S00 IIFSISALLHU LIISLSTLIYY LIISMSAKLHU S90 ARQCDRCLPGG GRRCDRCLPGG	720 RL HL 810 QT WG 900 HW
laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin	B12 B23 B23 B23 B23 B23 B23 B23 B23 B23 B2	EGAYLEFF EGQTLEFL PGAGLRFA1 ELPQYTSS KLVRTGGS. YFSQPLQG GLACECDPI ALPCQCNP1 AVACKCHPI GFPSCQPC0	640 IDNIPYSHEY VASVPKANDY VNNIPPPVDF 730 - DSDVESP AQPETPYSGP - ESHAHS 820 QGSLSSCOP QGSLSSCOP 910 CNGHADDCDI	650 DILIRYEPQL DILLRLEQV TIAIHYETQS 740 GLLIDSLVEM GLLIDSLVEL NVEVDSLGLI 830 NGGQCCQCRPL 920 920	060 PDHWEKAVIT PEQWAELELI AADWTVQIVV 750 PYCKSEDIFT PRVLVLEMES PQINSLENEC 840 VVGRCCDRCS 950 DYTMGHNCER	670 VQRPGRIPTS VQRPGRIPTS VQRPGPVAH - NPPGGS 760 VGGGEDGVT GGDAAA SKQD 850 PGTFGFGPSG PGTYGFGFTG GSYDLGHHG 940 CLAGYYGDPI	680 SRC GNTIPDD SLC GHLVFKD EHCIPKTLQS 770 NSAWETFQRY LERQATFRRY 	690 DNQVVSLSPG DRQGTLQPH KPQSFALPAA 780 RCLENSRSVV QCHEEGLVS NCVEIASANG 870 SVNAFCNPVT ALSSLCEKTS SKDTVCDQVT 960 PCPDGPDSGR	700 SRYVULPRPV ARYLIFPNPV TRIMLLPTPI 700 KTSPSEAGAP PQVLPGACER 800 GQCLCFQGVY GQCLCFQGVY GQCLCFQGVY GQCPCHGEVS 970 QFARSCYQDP	710 CFEKGTNYTVI CLEPGISYKLI CLEPDVQYSI B00 IIFSISALHH LLISLSTLIY LIISMSAKLHU B90 ARQCDRCLPGG GRRCDRCLAG GRRCDRCLAG	720 RL HL 900 900 900 WG 900 W F F 990 G
laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin	β1 β2 β2 β3 β4 β1 β2 β3 β4 β1 β2 β3 β4 β1 β2 β3 β4 β1 β2 β3 β4 β2 β3 β4 β2 β3 β4 β4 β4 β4 β4 β4 β4 β4 β4 β4	EGAYLEFF EGQTLEFL PGAGLEFA ELPQYTSS KLURTGGS, YFSQPLQG GLACECDPI AVACKCHPI GFPSCOPC(GFPSCOPC(640 I D N I P YS NE Y VA S Y PKAND Y VN N I P FP V D F 730 730 730 730 730 730 730 730	050 DILIRYEPQL ILIREPQV IIAIHYETQS 740 YIEIDSLVIM GLLIDSLVIM GLLIDSLVIL HVLVDSLGLT 450 GCCCCRPN 450 GCCCCRPN 450 CCCCRPN 920 920 920 920 920 920 920 920 920 920	640 PDHWEKAVIT PQMAELEI AADWIVQIVU 750 PVCSEDIFF	620 VQREGYPAN 	680 SRC 6H LYPRD EHCIPKTLQS 770 NSAMETFQRY LERQATFERY 	690 DNQVVSLSPG DRQGTLQPH KPQSFALPAA 780 RCLENSRSVV QCHEEGLVS NCVEIASANG 870 SVNAFCNPVT ALSSLCEKTS SKDTVCDQVT 960 PCPDGPDSGR	700 SRYVULPRPV ARYLIFPNPV TRIMLLPTPI 700 KTSPSEAGAP PQVLPGACER 800 GQCLCFQGVY GQCLCFQGVY GQCLCFQGVY GQCPCHGEVS 970 QFARSCYQDP	710 CFEKGTWYTVI CLEPGISYKLI Sö0 IIFSTSALLHI LIISLSTLIYI LIISMSAKLHI 890 CACLPGG GLRCDRCQRG GRRCDRCLAG	720 RL HL 900 900 900 WG 900 W F F 990 G
laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin	β1 β2 β2 β3 β4 β1 β2 β3 β4 β1 β2 β3 β4 β1 β2 β3 β4 β1 β2 β3 β4 β2 β3 β4 β2 β3 β4 β4 β4 β4 β4 β4 β4 β4 β4 β4	EGAYLEFF EGQTLEFL PGAGLEFA ELPQYTSS KLURTGGS, YFSQPLQG GLACECDPI AVACKCHPI GFPSCOPC(GFPSCOPC(640 I D N I P YS NE Y VA S Y PKAND Y VN N I P FP V D F 730 730 730 730 730 730 730 730	050 DILIRYEPQL ILIREPQV IIAIHYETQS 740 YIEIDSLVIM GLLIDSLVIM GLLIDSLVIL HVLVDSLGLT 450 GCCCCRPN 450 GCCCCRPN 450 CCCCRPN 920 920 920 920 920 920 920 920 920 920	640 PDHWEKAVIT PQMAELEI AADWIVQIVU 750 PVCSEDIFF	670 VQRPGRIPTS VQRPGRIPTS VQRPGPVAH - NPPGGS 760 VGGGEDGVT GGDAAA SKQD 850 PGTFGFGPSG PGTYGFGFTG GSYDLGHHG 940 CLAGYYGDPI	680 SRC 6H LYPRD EHCIPKTLQS 770 NSAMETFQRY LERQATFERY 	690 DNQVVSLSPG DRQGTLQPH KPQSFALPAA 780 RCLENSRSVV QCHEEGLVS NCVEIASANG 870 SVNAFCNPVT ALSSLCEKTS SKDTVCDQVT 960 PCPDGPDSGR	700 SRYVULPRPV ARYLIFPNPV TRIMLLPTPI 700 KTSPSEAGAP PQVLPGACER 800 GQCLCFQGVY GQCLCFQGVY GQCLCFQGVY GQCPCHGEVS 970 QFARSCYQDP	710 CFEKGTNYTVI CLEPGISYKLI CLEPDVQYSI B00 IIFSISALHH LLISLSTLIY LIISMSAKLHU B90 ARQCDRCLPGG GRRCDRCLAG GRRCDRCLAG	720 RL HL 900 900 900 WG 900 W F F 990 G
laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin	β1 β2 β2 β3 β4 β1 β2 β3 β4 β1 β2 β3 β4 β1 β2 β3 β4 β1 β2 β3 β4 β2 β3 β4 β2 β3 β4 β4 β4 β4 β4 β4 β4 β4 β4 β4	EGAYLEFF EGQTLEFL PGAGLRFA ELPQYTSS KLVRTGGS. YFSQPLQG GLACECDPI AVACKCHPI GFPSCQPCC GFPSCQPCC GFPSCPPC	640 10 N J PS M E Y VAS V PK AM O Y VAS V PK AM O Y VN N I P F P V D F 	050 DILLRYPOL LIRLPOV TIAIHYETQS 740 YIIIDSLVLW LIDSLVLW LIDSLVLW LIDSLVLW LIDSLVLW LIDSLVLW LIDSLVLW LGGQCQCRPN LGGQCQCRPN LGGQCQCRPL S20 PVTGCLNCQ PVTGCLNCQ LGGQCQCRPL S20 PVTGCLNCQ LGGQCQCRPL S20 PVTGCLNCQ S20 S20 S20 S20 S20 S20 S20 S20 S20 S20	960 POHIKKAVII PEQMAELELI AADHIYQIVV 750 PCKSLDIFI RAVLVLEHS PQINSLENE 440 VVGRTCORECORES 950 DYTMGHICER 01 GENECER 67 TIGRICER	620 VQRPGPVPAH - NPPGS 760 VGGSGDGVVT GGDAAA SKQD 850 PGTFGFGPSG PGTYGFGFTG CLAGYHGDPI CLAGYHGDPI CLAGYHGDPI CLAGYYGNPS 1030	680 SRC6HLVPKD SLC6HLVPKD EHCIPKTLQS 770 NSAWETFQRY LERQATFERY LDEYQLH 860 CKPCECHLQ6 CQACQCSHE6 CKPCECHLQ6 050 IGSODHCRPC LPYG6QCRPC SGQPDRPC 1040	600 DAQUYG SP DORIGGT QPH DARIGGT QPH KPQSFALPAA 780 RGLENSRSVV QCHECLVPS NCVETAANG 750 NCVETAANG 75	700 SRYVLPPPV ARVLIFPNPV TRIALPTPI 750 ***********************************	710 CFEKGTNYTVI CLEPGISYKLI BOD ITFSISALLHU LIISLSTLIV LIISMSAKLHU B90 GRRDDRCLAG GRRDDRCLAG 900 VTLQLAGVCDD YSQQIVCHCRA	720 RL HL 900 900 900 WG 900 W F F 990 G
laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin	612034 62236 6226 62256 625666 625666 62566 62566 62566 62566 62566 62566 62566 62566 6256	EGAYLEFF EQTLEFL PGAGLRFA' ELPQYTSS KLVRTGGS. YFSQPLQG GLACECDPI AVACKCHPI GFPSCQPC GFPSCPPC GFPSCPPC YIGSRCDDI	640 ID NI PYSMEY VA SV PKA NO Y VN NI PP PV OF 	50 DILIRYEPQL IIRIEPQV IIAIHYETQS 240 TIAIHYETQS 240 TIAIHYETQS 240 TIAIHYETQS 240 TIAIHYETQS 240 TIAIHYETQS 250 250 250 250 250 250 250 250	940 PDHWEKAVIT PEQWAELELI AADBYTVQIVV 750 PVCSLDIFT PRVLVLEMES PQINSLENEC 940 VVGRCCLRES 930 VVGRCCLRES 930 PVTMHNCER 0TGGRCCER 950 GFTTGRNCER 1020 CHNNIDTTDF	670 VQRPGRIPTS VQRPGPVPAH -NPPGGS 760 VGGGGDGVVT GGDAAA SKQD 850 PGTFGFGPSG PGTFGFGPSG PGTFGFGPSG GLAGFHGOPR CLAGFHGOPR CLAGFHGOPR CLAGFHGOPR CLAGFYGPR	600 SRC 6NTIPDD SLC 6HLVPKD EH0IPKTLQS 770 770 NSAWETFQRY LERQATFCRY LDEYQLH 800 CKPCEQCACQCSHEG 050 IGSGDHCRPC LPYGQCCRPC SGQPCRPC 1040 LKCLYHTEGE	590 DNQVVSLSPG DRIGT_QPH FRQSFLPAA 780 RELENSRSVV QCHECLVPS SVNAFCNPVT SVNAFCNPVT SVNAFCNPVT SSLSLCEKTS SKDTVCDQVT 990 PCPOPDSGR PCFCPSSNQ LCPDPSSNQ 1050	700 SRYVLPRPV ARVLIFPPV TRINLPTPI 700 CQUPGACER 800 CQUCCTOAF GQCPCHGEVS 970 QFARSCYQDP YFAHSCYQNL 1060 GDALQQ	710 CFEKGTNYTVI CLEPGISYKLI BOD ITFSISALLHU LIISLSTLIV LIISMSAKLHU B90 GRRDDRCLAG GRRDDRCLAG 900 VTLQLAGVCDD YSQQIVCHCRA	720 RL HL B10 QV 900 HW QV F 990 G G G 1080
laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin	612034 62036 6200 60056	EGAYLEFF EQTLEFL PRAGLRFA ELPQYTSS KLVRTGGS. YFSQPLQG GLACECDPI AVACKCHPI GFPSCQPC GFPSCPPCI GFPSCPPCI YTGSRCDDI YTGLRCEA	640 ID NI PYSMEY VA SV PKA NO Y VN NI PP PV OF 	50 DILIRYEPQL IIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 740 740 740 740 740 740 740	940 PDHWEKAVIT PEQWAELELI AADWTVQIVV 750 PVCSLDIFI PRVLVLEME PQINSLENEC 940 VVGRTCNRCAR 950 VVGRTCNRCAR 950 PVTMHNCER 950 PVTMHNCER 950 PTTGRNCER 1020 CCHNNIDTTDPC CSGNIDPMDE	670 VQRPGRIPTS VQRPGGS 760 VGGGGGOVT GGDAAA SKQD 850 PGTFGFGPSG PGTFGFGPSG PGTFGFGPSG CLAGFHGOPR CLAGFYGOPSI CLAGFYGOPSI CLAGFYGOPSI CLAGFYGOPSI CLAGFYGOPSI CLAGFTGOPSC CLAG	600 SRC GNTIPDD SLC GHLVPKD EH0IPKTLQS 770 NSAWETFQRY LERQATFERY LDEYQLH 800 CKPCEQCSHEG 040 USSGDHCRPC 950 IGSGDHCRPC SCQPCRPC 1040 LKCLYHTEGEL	590 DNQVVSLSPG DRIGT_QPH KPQ5FALPAA 780 RELENSRSVV QCHECLVPS NEVEIASANG 970 SVNAFCNPVT SSKDTVEDQVT 990 PCPDPDSGR PCECPCSQQ LCPDPSSNQ 1050 HCQFCRFGYY HCAHCKPSFN	700 ISRYVLPRPV ARYLIFPPV TRINLPTPI 790 CQUPGACER 800 CQUCCTOAF GQUPCHGEVS 970 QFARSCYQDP HATSCHQPL 1060 GQARQSCHR	710 CFEKGTWYTVI CLEPGISYKLI CLEPDVQYSI 800 IIFSISALLHU LIISLSTLIVI LIISMSAKLHU 890 000 GRRCDRCLPG GRRCDRCLAG 900 VTLQLAGVCDU WSSDVICNCLO	720 RL HL 900 900 900 900 900 900 900 900 900 V G G C G 1080 900 900 900 900 900 900 900 900 900
laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin	612034 62036 6200 60056	EGAYLEFF EQTLEFL PRAGLRFA ELPQYTSS KLVRTGGS. YFSQPLQG GLACECDPI AVACKCHPI GFPSCQPC GFPSCPPCI GFPSCPPCI YTGSRCDDI YTGLRCEA	640 ID NI PYSMEY VA SV PKA NO Y VN NI PP PV OF 	50 DILIRYEPQL IIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 TIAIHYETQS 740 740 740 740 740 740 740 740	940 PDHWEKAVIT PEQWAELELI AADWTVQIVV 750 PVCSLDIFI PRVLVLEME PQINSLENEC 940 VVGRTCNRCAR 950 VVGRTCNRCAR 950 PVTMHNCER 950 PVTMHNCER 950 PTTGRNCER 1020 CCHNNIDTTDPC CSGNIDPMDE	670 VQRPGRIPTS VQRPGGS 760 VGGGGGOVT GGDAAA SKQD 850 PGTFGFGPSG PGTFGFGPSG PGTFGFGPSG CLAGFHGOPR CLAGFYGOPSI CLAGFYGOPSI CLAGFYGOPSI CLAGFYGOPSI CLAGFYGOPSI CLAGFTGOPSC CLAG	600 SRC GNTIPDD SLC GHLVPKD EH0IPKTLQS 770 NSAWETFQRY LERQATFERY LDEYQLH 800 CKPCEQCSHEG 040 USSGDHCRPC 950 IGSGDHCRPC SCQPCRPC 1040 LKCLYHTEGEL	590 DNQVVSLSPG DRIGTQPH KPQ5FALPAA 780 RELENSRSVV QCHECLVPS NEVEIASANG 970 SVNAFCNPVT SVNAFCNPVT SSLDTVEDQVT 990 PCPOPDSGR PCEGPOSGR LCPDPSSNQ 1050 HCQFCRFGYY HCAHCKPSFN	700 ISRYVLPRPV ARYLIFPPV TRINLPTPI 790 CQUPGACER 800 CQUCCTOAF GQUPCHGEVS 970 QFARSCYQDP HATSCHQPL 1060 GQARQSCHR	710 CFEKGTWYTVI CLEPGISYKLI CLEPDVQYSI 800 IIFSISALLHU LIISLSTLIVI LIISMSAKLHU 890 GRRCDRCLPG GRRCDRCLAG 900 VTLQLACVCD 900 VTLQLACVCD 1070 CTCNLLGTNP	720 RL HL 900 900 900 900 900 900 900 900 900 V G G C G 1080 900 900 900 900 900 900 900 900 900
laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin	622334 622336 6226 6226 6226 6226 6276 627	EGAYLEFF EGATLEFL PGAGLRFA' ELPQYTSS KLVRTGGS, YFSQPLQG GLACECOPI ALPCOCNPI GFPSCOPC GFPSCOPC GFPSCOPC GFPSCOPC YTGSRCDD YTGSRCDD YTGSRCDD	440 10 N 19 S N E Y X A S Y KA HO Y V N I P FP V D F 70 - D S D V E S P Q Q F T Y S O P Q S L S S C M	bo bo f LIRY POL LIRE POV trianty Engl trianty Engl trianty	640 P D HU K K A V T I P C WA E L E L I A A D H T VQ I V V 750 P Y C K S L D I F I P K V V C K S L D I F I P K V V C K S L D I F I P Y V K S L D I F I V V G R C C N R C A V V G R C C N R C A V V G R C C N R C A V V G R C C N R C A V V G R C C N R C A V V G R C C N R C A V V G R C C N R C A V V G R C C N R C A V V G R C C N R C A V V G R C C N R C A V V G R C C N R C A V V G R C C N R C A V V G R C C N R C A V V G R C C N R C A V V G R C N R C A V V V R V V V V V V V V V V V V V V V V	620 VQ RP GP VPAH VQ RP GP VPAH VQ RP GP VPAH VG RS GD GVVT GG DAAA SK QDAA SK QD	680 SRC 6H LYPKD EHCIPKTLQS 770 NSAMETFQRY LERQATFERY LDEYQLH 860 CKPCECHLQG CKPCECHLQG CKPCECHLQG 050 1050 LSGQCHCRPC 1040 LKCLYHTEGE LRCLHHTGGA 1130	600 DAQUYS SP C DRIGTL QPH KPQ5FALPAA 700 RCLENSRSVV QCHECLV75 870 570 570 570 570 570 570 570 570 570 5	700 SRYVLPRPV IARVLIFPNPV IREIMLLPTPI 700 KTPMTDVCRN KTPMTDVCRN KTPMTDVCRN KTPMTDVCRN KTPMTDVCRN KTPGCRAP 6QCHCFQGVY 6QCLCRTGAF 6QCHCFQGVY 6QCLCRTGAF 970 070 070 070 070 070 070 070	710 CF EKGTHN TVU CLE PGI S XLL CLE PGI S XLL CLE PGI S XLL S00 IIF SISALLHN HIS IS ALLHN HIS IS ALLHN HI	720 RL HL 900 W 990 990 F F 990 900 F F 26 26 26 26 26 1080 20 20 20 1080 1080 1080 1080 1080
laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin		EGAYLEFF EGATLEFL PGAGLRFA' ELPQYTSS KLVRTGGS, YFSQPLQG GLACECDPI ALPCOCNPI AVACKCHPI GFPSCOPC GFPSCOPC GFPSCOPC GFPSCOPC YIGSRCDD YTGLRCEAI YTGSRCDD	440 10 N J V S N E Y X N S V K A HO Y V N I P FP V D F 70 - D S D V E S N E Y 20 S L S V C D P 20 S L S V C D P 20 S L S S C M P 20 S L S S C M P 20 S V S S S C M P 20 O 20 N H A D C D C N F A C L D 20 O C N F A C L D 20 S Y E S S S C M 20 O 20 N F A C L D 20 O 20 O		640 P D HUK KA VI T P C Q HA EL EL I AAAD W T VQ I VV 750 P Y C KS L D I F I P Y C KS L D I F I VV G R C C L C A VV G R C C A V A VV G R C A V A V A	620 VQREGVPAN VQREGVPAN VQREGVPAN VGRGSOGVVT GGDAAA SKQDAA SKQD	680 SRC 6H LYPRD EHCIPKTLQS 770 NSAWETFQRY LERQATFERY LDEYQLH 860 CCAPCECHLQG CCAPCECHLQG CCAPCECHLQG 950 16360HCRPC LPYGGQCRPC SGQPCRPC 1040 LKCLYHTEOP LRCLHNTQGA 1130 CCHPSRARGPD	600 DAQUYS SP G DRIGTI CPH KPQ5FALPAA 700 RCLENS RSVV QCHEC L VPS 700 870 870 870 870 870 870 870 870 870	700 SRYVLPRPV IARYLIFPNEV TRIMLLPTPI 700 KTPMTDVCRN KTPMTDVCRN KTPMTDVCRN KTPMTDVCRN KTPMTDVCRN GQCHCFQGVY GQCLCRTGAF GQCPCHGEVS 970 075 075 075 075 075 075 075 0	710 CF EKGTHN TVU CLEPGISYKLI CLEPGISYKLI S00 IIF SISALLHI LIISSTLIYY LIISSTLIYY ARQ CDRCLPG GR CDRCLPG GR CDRCLPG GR CDRCLG GR CDRCLG S00 VILQLACVCDF YSQQIVCHCRA WSSDVICNCLC 1070 CTCRLLGTNP CSCHASGVSP 1160 S	720 RL 810 900 900 900 900 900 900 900 900 900 9
laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin		EGAYLEFF EGATLEFL PGAGLRFA' ELPQYTSS KLVRTGGS, YFSQPLQG GLACECDPI ALPCOCNPI AVACKCHPI GFPSCOPC GFPSCOPC GFPSCOPC GFPSCOPC YIGSRCDD YTGLRCEAI YTGSRCDD	440 10 N J V S N E Y X N S V K A HO Y V N I P FP V D F 70 - D S D V E S N E Y 20 S L S V C D P 20 S L S V C D P 20 S L S S C M P 20 S L S S C M P 20 S V S S S C M P 20 O 20 N H A D C D C N F A C L D 20 O C N F A C L D 20 S Y E S S S C M 20 O 20 N F A C L D 20 O 20 O		640 P D HUK KA VI T P C Q HA EL EL I AAAD W T VQ I VV 750 P Y C KS L D I F I P Y C KS L D I F I VV G R C C L C A VV G R C C A V A VV G R C A V A V A	620 VQREGVPAN VQREGVPAN VQREGVPAN VGRGSOGVVT GGDAAA SKQDAA SKQD	680 SRC 6H LYPRD EHCIPKTLQS 770 NSAWETFQRY LERQATFERY LDEYQLH 860 CCAPCECHLQG CCAPCECHLQG CCAPCECHLQG 950 16360HCRPC LPYGGQCRPC SGQPCRPC 1040 LKCLYHTEOP LRCLHNTQGA 1130 CCHPSRARGPD	600 DAQUYS SP G DRIGTI CPH KPQ5FALPAA 700 RCLENS RSVV QCHEC L VPS 700 870 870 870 870 870 870 870 870 870	700 SRYVLPRPV IARYLIFPNEV TRIMLLPTPI 700 KTPMTDVCRN KTPMTDVCRN KTPMTDVCRN KTPMTDVCRN KTPMTDVCRN GQCHCFQGVY GQCLCRTGAF GQCPCHGEVS 970 075 075 075 075 075 075 075 0	710 CFEKGTWYTVI CLEPGISYKLI CLEPGISYKLI 800 117 STSALLHI LIISLSTLIYI LIISMSAKLHI 890 0 ACLPGG GLRCDRCQRG GRCDRCQRG GRCDRCLAGY 900 VTLQLACVCDF 400 CTCNLLGTNP CSCHASGVSP 1100 1070 1100 1070 1100 1070 1100 1070 1100 1070 1000 1070 1000	720 RL 810 900 900 900 900 900 900 900 900 900 9
laminin Iaminin Iaminin Iaminin Iaminin Iaminin Iaminin Iaminin Iaminin Iaminin Iaminin Iaminin Iaminin Iaminin	12234 12234 12234 12234 12234 12234 12234 12234 12234 12234 12234 12234	EGAYLEFF EGQTLEFL PGAGLRFA ELPQYTSS KLVRTGGS. YFSQPLQG GLACECDPI AVACKCHPI GFPSCOPCC GFPSCOPCC GFPSCOPCC GFPSCOPCC GFPSCOPCC YTGSRCDDI YTGSRCDDI YTGLRCEAL YTGLCGEI	440 15 N 19 V 16 V VAS V PKAN 6 V VAS V PKAN 6 V VN 19 FP V 0F - 0 SD V 5 P Q 0 FT V 3 CP - 0 SD V 5 P Q 0 SU SS CC 0P 0 CS U SS CS CS CS 0 CS U SS CS CS CS CS 0 CS U SS CS CS CS CS CS 0 CS U SS CS CS CS CS CS CS CS 0 CS U SS CS	000 DILLRYEPUL LIRLEPV TIAIHYETQS 740 YIIIIHYETQS VIIIIHYETQS VIIIIHYETQS VIIIIHYETQS VIIIIHYELQS VIIIIIHYELQS VIIIIIHYEL VIIIIIHYELQS VIIIIIHYEL VIIIIIHYEL VIIIIIN VIIIIIN VIIIIIN VIIIIIN VIIIIIN VIIIIIN VIIIIIN VIIIIIN VIIIIIN VIIIIN VIIIIIN VIIIIIN VIIIIN VIIIIIN VIIIIIN VIIIIN VIIIIIN VIIIIN VIIIIIN VIIIIIN VIIII	940 POHMEKAVIT PEQMAELELI AADHIVQIVV 750 PCKSLDIFI REVLVLEME 940 VVGRTCONCEA	670 VQRPGPVPAH - NPPGGS 760 VGGSGDGVVT GGDAAA SKQD BSC PGTFGFGPSG PGTFGFGPSG PGYGFGFGFG CIAGFHGDPR CIAGFHGDPR CIAGFHGDPR CIAGFHGDPR CIAGFHGDPR CIAGFHGDPR CIAGFHGDPR CIAGFHGDPR CIAGFHGCQPC 120	600 SRC6HLYPD SLC6HLYPD EHCIPKTLQS 770 NSAWETFQRY LERQATFERY LDEYQLH 800 CKPCECHLQG CQACQCSHEG CCACQCSHEG CCACQCSHEG CCACQCSHEG 050 IGSGDHCHCHPQG 950 IGSGCHCPC SGQPCRPC 1040 LKCLYHTEGE LRCLHNTQGA 1130 CCHPSRARGFT CDPRSARGFT CDPRSARGFT 1220	600 DAQ UY SUS DE DO DA EL QUE AL DA 780 REL EN SUS AL DA 780 REL EN SUS AL DA 780 REVETA SUS	700 SRYVLPPPV ARVLIFPNVLPPV ARVLIFPNVLPPV TRIMLLPTPI 790 KTSPSEAGAP PQVLPGACER 800 GQCLCRTGAF GQCLCRTGAF GQCLCRTGAF GQCLCRTGAF 970 QFARSCYQNL 1060 GDALQQ	710 CF EKGTWTYU CLEPGISYKLI GLEPDVQYSII 800 117 SISALLHO LIISLSTLIYY 117 SISALLHO LIISLSTLIYY 900 900 900 900 900 900 900 9	720 RL 810 20 9900 20 9900 20 9900 20 9900 20 9900 20 9900 20 9900 20 20 20 20 20 20 20 20 20 20 20 20 2
laminin Iaminin	12234 12344 12	EGAYLEFF EGQTLEFL PGAGLRFA' ELPQYTSS KLVRTGGS. YFSQPLQG GLACECDP/ AVACKCHPI GFPSCQPC/ GFPSCQPC/ GFPSCQPC/ GFPSCQPC/ GFPSCQPC/ GFPSCQPC/ CPPGGAC CPPGGAC	440 10 N J PS N E Y VA S V PK AN O Y VA S V PK AN O Y VN I P E P V O F - 0 S D V E S P Q P T P Y S P Q S S S S C P P Q S S S C S R 90 0 C N C H A D D C D C N C H A D D C D C N C H A D D C D C S S S C P P I G D P S S S T G P Y G N P S C S C P S S Q C P C D C S S Q C P 109 100 100 100 100 100 100 100	000 DILLREPOV ILRED	940 POHMEKAVIT PEQMAELELI AADHIVQIVU 750 PCKSLDIFI REVLVLEME 840 VVGRTCARCARCA VVGRTCARCACC 930 930 930 930 930 930 930 930	670 VQRPGVS VQRPGVS VQRPGVS VQRPGVS VQRPGVS VQRPGVS VQRPGVS 100 VGCSGDGVVT GGDA AA SKQD	680 SRC 6H TIPDD SLC 6H LYPD SLC 6H LYPD SLC 6H LYPD HC IPK TLQS 770 770 770 770 770 770 770 77	600 DAQUYS (SP C DARIGST QPH KPQSFALPAA 780 RCLENSRSVV QCHECLVSS 700 RCVEIRSANG 7	700 SRYVLPPPV ARVLIFPNV ARVLIFPNV TRIMLPTPI 790 KTPMTDVCRN KTPMTDVCRN KTPMTDVCRN KTPMTDVCRN GQCLCFQGV GQCLCFQGV GQCLCRTGAF GQCPCHGEVS 970 07ARSCYQDP HFATSCHQDE YFAHSCYQNL 1060 CRAGFGGTCC CREGGCMCC RESALNQTCRN 1150 CRAGFGGTCC CREGGCMCC CREGGCMCC CREGGCMCC 1240 IALL THRTHRF	710 CF EKGTWI YU CLEPGISYKLI GLEPDIVQYSII 800 117 SISALLHO LLISLSILIYY 490 ARQCDRCLPGI GLRCDRCQRG GRRCDRCLPGI GRRCDRCLAG 900 900 900 900 CTCNLLGTNP 1007 CTCNLLGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1100 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTCNLCGTNP 1000 CTC	720 RL HL 900 QT 900 QT 900 QT 900 QV YF 990 QW 20 20 20 20 20 20 20 20 20 20 20 20 20
laminini laminini laminini laminini laminini laminini laminini laminini laminini laminini laminini laminini laminini laminini laminini laminini laminini laminini	12034 12034 12034 12034 12034 12034 12034 12034 12034	EGAYLEFF EQTLEFL PRAGLRFA ELPQYTSS KLVRTGGS. YFSQPLQG GLACECDPI AVACKCHPI GFPSCAPC GFPSCAPC GFPSCAPC GFPSCAPC GFPSCAPC GFPSCAPC CPS PDQC CPS PDQC CPS PDQC CPS CACCAL	640 10 N T PY SH 5 VA S V PKAH 0 Y VN N T P P V O F 730 - > S D V E S P AQ P E T P V S O P C S U S S V C D Y G S U S S C O P G S U S S C O P C N C H AD C D C N C H AD C D C N C H AD C D S S T G V F M H R 1090 10	50 DILIRY POL DILIRY POL DILIRY POL DILIRY POL DILIRY POL POL DILIRY POL POL DILIRY POL DILIRY POL DILI	940 P 0 H W E KA V I I P C Q A E L E L I A A D W T V I V V 750 P C KS L D IF T P P C KS L D IF T P P C KS L D IF T P P C KS L D IF T P C KS L D IF T	670 VQRPGRIPTS VQRPGRVPAH - NPPGGS 760 VVGGGGDVT GGDAAA SKQD 850 PGTF6F95G PGTF6F95G PGTY6F6P5G CLAGFH60PR CLAGFH60PR CLAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFA60PC CIAGFH60PR CIAGFA60PC	680 SRC GNT I PDD SLC GHLVPKD EHCIPKTLQS 770 NSAWETFQRY LERQATFERY LDEYQLH 860 CKPCECHLQG CKPCECHLQG GQACQCSHEG 050 IGSGDHCRPC LFYCGQCRPC SGQPCRPC 1040 LKCLYHTEGE LRCLHHTGP LRCLHTGP CDPHSLSPC CDPHSLSPC CDPRSQSH 1220 CVFPCCTPCH SIF ACHPC	600 DNQUYSL PP DNQUQSL PP PORIQGIQGIQGIQ REQUINT 700 REVENSIV QCHECLVPS NEVEIASANG 700 REVEIASANG 700 REVEIASANG 700 REVEIASANG 700 REVEIASANG 700 REVEIASANG 700 REVEISSAN	700 SRYVVLPRV ARYLIFPNV TRIHLPTPI 700 700 700 700 700 700 700 70	710 CFEKGTWYTVI CLEPGISYKLI 800 117 STSALLHU LIISLSTLIYI 118 MSAKLHU 890 GRRCDRCLAGY 990 VTLQLACYCDF 1070 1070 CTCNLLGTNP CSCHASOVSP 1160 SALAAIRQCPDR 8EQEN 1250	720 RL B10 20 900 900 900 900 900 900 900
laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin laminin	12034 12034 12034 12034 12034 12034 12034 12034 12034	EGAYLEFF EQTLEFL PRAGLRFA ELPQYTSS KLVRTGGS. YFSQPLQG GLACECDPI AVACKCHPI GFPSCAPC GFPSCAPC GFPSCAPC GFPSCAPC GFPSCAPC GFPSCAPC CPS PDQC CPS PDQC CPS PDQC CPS CACCAL	640 10 N T PY SH 5 VA S V PKAH 0 Y VN N T P P V O F 730 - > S D V E S P AQ P E T P V S O P C S U S S V C D Y G S U S S C O P G S U S S C O P C N C H AD C D C N C H AD C D C N C H AD C D S S T G V F M H R 1090 10	50 DILIRY POL DILIRY POL DILIRY POL DILIRY POL DILIRY POL POL DILIRY POL POL DILIRY POL DILIRY POL DILI	940 P 0 H W E KA V I I P C Q A E L E L I A A D W T V I V V 750 P C KS L D IF T P P C KS L D IF T P P C KS L D IF T P P C KS L D IF T P C KS L D IF T	670 VQRPGRIPTS VQRPGRVPAH - NPPGGS 760 VVGGGGDVT GGDAAA SKQD 850 PGTF6F95G PGTF6F95G PGTY6F6P5G CLAGFH60PR CLAGFH60PR CLAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFH60PR CIAGFA60PC CIAGFH60PR CIAGFA60PC	680 SRC GNT I PDD SLC GHLVPKD EHCIPKTLQS 770 NSAWETFQRY LERQATFERY LDEYQLH 860 CKPCECHLQG CKPCECHLQG GQACQCSHEG 050 IGSGDHCRPC LFYCGQCRPC SGQPCRPC 1040 LKCLYHTEGE LRCLHHTGP LRCLHTGP CDPHSLSPC CDPHSLSPC CDPRSQSH 1220 CVFPCCTPCH SIF ACHPC	600 DNQUYSL PP DNQUQSL PP PORIQGIQGIQGIQ REQUINT 700 REVENSIV QCHECLVPS NEVEIASANG 700 REVEIASANG 700 REVEIASANG 700 REVEIASANG 700 REVEIASANG 700 REVEIASANG 700 REVEISSAN	700 SRYVVLPRV ARYLIFPNV TRIHLPTPI 700 700 700 700 700 700 700 70	710 CFEKGTWYTVI CLEPDVQYSII 800 IIFSTSALLHU LIISLSTLIYI LIISMSAKLHU 890 GRRCDRCLAGY 900 VTLQLACYCDF 6GRCDRCLAGY 900 VTLQLACYCDF 1070 CTCNLLGTNP CSCHASOVSP 1160 SALAAIRQCPDR SALAAIRQCPDR SALAAIRQCPDR 1250	720 RL B10 20 900 900 900 900 900 900 900

С

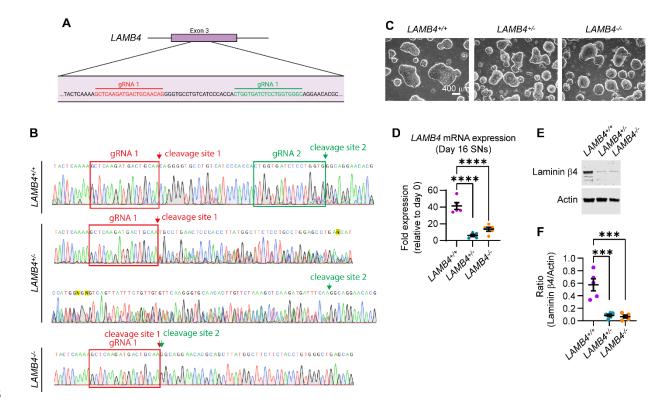


- 3 Figure S1. Similarities between *LAMB* genes. A) Dendrogram of the *LAMB* genes among
- 4 species. **B and C)** Alignment of regions in the **B)** N-terminal and **C)** C-terminal domains of the
- 5 amino acid sequences of the human laminin β chains.



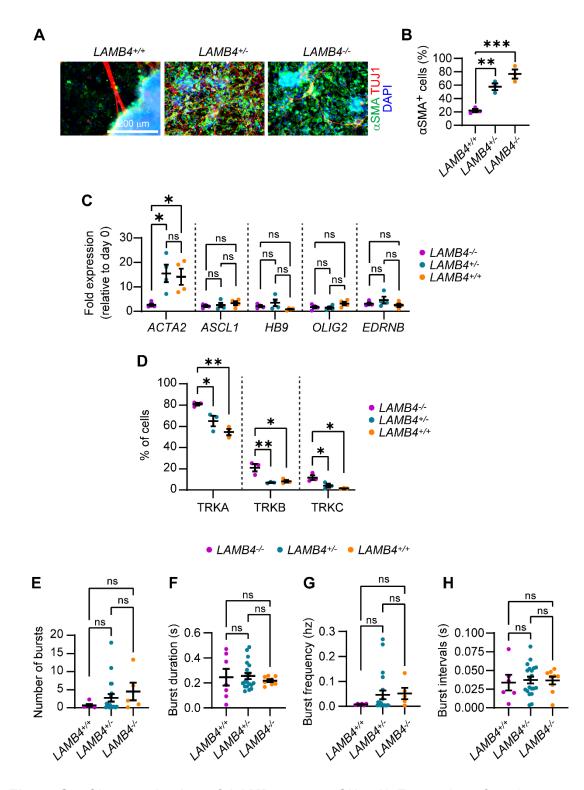


7 Figure S2. LAMB4 is not expressed in mesoderm and endoderm. A) Schematic of the 8 endoderm differentiation protocol. B) Gene expression of endoderm markers. hPSC-ctr-H9 cells 9 were differentiated into endoderm and RNA was isolated on day 3. mRNA levels were measured 10 using RT-qPCR (n=2-4 biological replicates). C) LAMB4 expression during endoderm 11 differentiated from hPSCs. D) Schematics of the mesoderm differentiation protocol. E) Expression 12 of early mesoderm marker. F) Expression of cardiomyocyte-related genes. Previously published 13 RNAseq data was analyzed to assess the expression of laminin chains. G) LAMB4 expression 14 from mesoderm and cardiomyocytes differentiated from hPSCs. Highly expressed laminin genes 15 are shown in green. *LAMB4* shown in red.



16

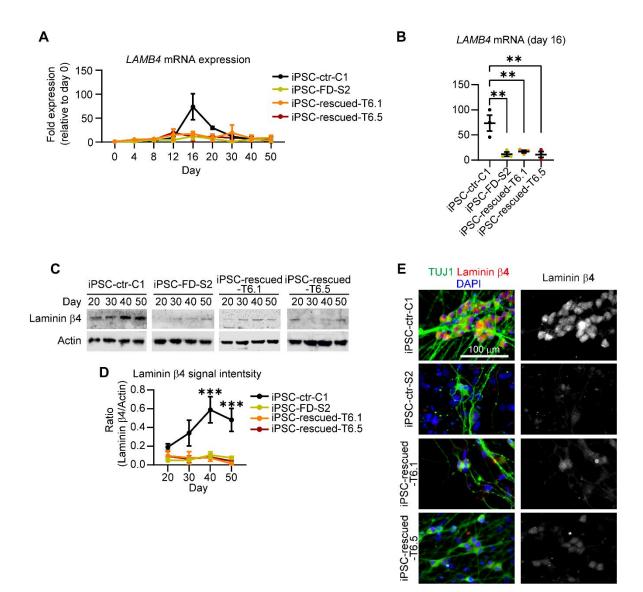
17 Figure S3. LAMB4 editing strategy and characterization. A) Schematics of the strategy used 18 to edit LAMB4 by CRISPR/Cas9. B) Sequencing results of LAMB4^{+/+}, LAMB4^{+/-}, and LAMB4^{-/-} hPSCs. C) Characterization of LAMB4^{+/+}, LAMB4^{+/-}, and LAMB4^{-/-} hPSCs by brightfield 19 20 microscopy. D) LAMB4 expression in SNs differentiated from LAMB4^{+/+}, LAMB4^{+/-}, and LAMB4^{-/-} 21 hPSCs. RNA was isolated on day 16 and LAMB4 expression was measured by RT-qPCR (n=5 22 biological replicates). **E)** Laminin β4 levels in *LAMB4^{+/+}*, *LAMB4^{+/-}*, and *LAMB4^{-/-}* SNs. Total protein 23 of day 20 SNs was immunoblotted for laminin β 4 and actin. F) Measuring of signal intensity of the 24 immunoblots from F) (n=5 biological replicates). For D) and F), one-way ANOVA followed by Tukey's multiple comparisons test. ***p<0.001, ****p<0.0001. Graphs show mean ± SEM. 25



26

Figure S4. Characterization of *LAMB4* mutant SNs. A) Expression of markers upon loss of *LAMB4*. *LAMB4*^{+/+}, *LAMB4*^{+/-}, and *LAMB4*^{-/-} SNs were fixed on day 20 and stained for the nonneural ectoderm marker α -Smooth Muscle Actin (α SMA). Nuclei were stained with DAPI. B)

Percentage of aSMA⁺ cells from A) over DAPI was plotted. C) Expression of genes not expressed 30 in SNs. RNA of day 20 SNs differentiated from LAMB4^{+/+}, LAMB4^{+/-}, and LAMB4^{-/-} hPSCs was 31 isolated. Gene expression was measured by RT-qPCR (n=4 biological replicates). D) Percentage 32 33 of cells expressing TRK proteins. Day 20 SNs were stained with TRKA, TRKB, and TRKC 34 fluorescently-tagged antibodies and analyzed by flow cytometry (n=3 biological replicates). E-H) Measurement of electrical activity of LAMB4^{+/+}, LAMB4^{+/-}, and LAMB4^{-/-} SNs. E) Number, F) 35 36 duration, G) Frequency, and H) intervals of bursts were measured. Each dot represents the mean 37 firing rate of 6 wells measured over 40 days (n=4 biological replicates). For C), one-way ANOVA followed by Dunnett's multiple comparisons test. For B), D), E), F), G), and H) one-way ANOVA 38 followed by Tukey's multiple comparisons test. ns, non-significant, *p<0.05, **p<0.005. Graphs 39 show mean ± SEM. 40





42 Figure S5. LAMB4 expression is not dependent on ELP1. A) LAMB4 expression in SNs differentiated from ELP1-rescued iPSCs of severe FD patients. ELP1^{+/-} severe FD iPSCs (iPSC-43 rescued-T6.1 and iPSC-rescued-T6.5), one severe FD iPSC line (S2), and one healthy iPSC 44 45 control line (C1) were differentiated into SNs. Total RNA was isolated at the indicated times and gene expression was measured by RT-qPCR (n=3 biological replicates). B) LAMB4 expression 46 47 by SNs on day 16 shown in **A**) is shown (n=3 biological replicates). **C**) Laminin β 4 expression 48 during SN development. iPSC-rescued-T6.1, iPSC-rescued-T6.5, iPSC-FD-S2, and iPSC-ctr-C1 49 cells were differentiated into SNs. Lysates were collected on the indicated days and were

immunoblotted for laminin β 4 and actin. **D**) Quantification of signal intensity of immunoblots shown in **C**) (n=3 biological replicates). **E**) Laminin β 4 in *ELP1*-rescued severe FD SNs. iPSC-rescued-T6.1, iPSC-rescued-T6.5, iPSC-FD-S2, and iPSC-ctr-C1 hPSCs were differentiated into SNs. Cells were fixed on day 20 and stained for laminin β 4, TUJ1, and DAPI. For **B**), one-way ANOVA followed by Tukey's multiple comparisons test. For **D**), two-way ANOVA followed by Šídák's multiple comparisons test. **p<0.005, ***p<0.001. Graphs show mean ± SEM.

Supplementary Table 1 - List of primers used in this study

Gene	Forward sequence	Reverse sequence
SOX10	CCAGGCCCACTACAAGAGC	CTCTGGCCTGAGGGGTGC
P75NTR	CCTCATCCCTGTCTATTGCTCC	GTTGGCTCCTTGCTTGTTCTGC
NGN1	GCCTCCGAAGACTTCACCTACC	GGAAAGTAACAGTGTCTACAAAGG
NGN2	CAAGCTCACCAAGATCGAGACC	AGCAACACTGCCTCGGAGAAGA
BRN3A	AGTACCCGTCGCTGCACTCCA	TTGCCCTGGGACACGGCGATG
RUNX1	CCACCTACCACAGAGCCATCAA	TTCACTGAGCCGCTCGGAAAAG
RUNX3	GGCAATGACGAGAACTACTCCG	GATGGTCAGGGTGAAACTCTTCC
TRKA	CACTAACAGCACATCTGGAGACC	ACAGTCAGCTCAAGCCAGACAC
TRKB	ACAGTCAGCTCAAGCCAGACAC	GTCCTGCTCAGGACAGAGGTTA
TRKC	CCGACACTGTGGTCATTGGCAT	CAGTTCTCGCTTCAGCACGATG
TBXT	CCTTCAGCAAAGTCAAGCTCACC	TGAACTGGGTCTCAGGGAAGCA
TBX6	TCATCTCCGTGACAGCCTACCA	CCGCAGTTTCCTCTTCACACGG
FOXF1	CAGCCTCACATCACGCAAGG	AGCCGAGCTGCAAGGCATC
TNNT2	AAGAGGCAGACTGAGCGGGAAA	AGATGCTCTGCCACAGCTCCTT
NKK2-5	AAGTGTGCGTCTGCCTTTCCCG	TTGTCCGCCTCTGTCTTCTCCA
GAPDH	GTCTCCTCTGACTTCAACAGCG	ACCACCCTGTTGCTGTAGCCAA
LAMA1	GAAGGTGACTGGCTCAGCAAGT	AGGCGTCACAACGGAAATCGTG
LAMA2	GGCAATCTGAATACACTCGTGAC	TGTGTTGGTCCTCTCAGCATCC
LAMA3	TAGAGGAAGCCTCTGACACAGG	CCGATAGTATCCAGGGCTACAAC
LAMA4	GAGATGACTCTCTGCTGGACCT	AGTTCCAGGCAGCCAACAAAGC
LAMA5	AACCAGATGAGCATCACATTCCTG	ACAGTGTTGCGCGTCTCCGTAT
LAMB1	GAGGTGTCTCAAGTGCCTGTAC	ACTGGCAGTCAGAGCCGTTACA
LAMB2	GCGGACTTGTTCTGAGTGCCAA	ACCTGTGAAGCGGTGACACTGA
LAMB3	GTCACAGAGCAGGAGGTGGCT	GCTTCTGTCAAGACTCTCCAGG
LAMB4	GTGGAGGCTTTACAACTGGCAG	GGATCATCTGGACACAGGCAAG
LAMC1	CTGTGAGGTCAACCACTTTGGG	AGCCTTCTCTGCATTCACAGCG
LAMC2	TACAGAGCTGGAAGGCAGGATG	GTTCTCTTGGCTCCTCACCTTG
LAMC3	CTGTAACCAGCATGGCACCTGT	ACCTGGCAAACAGCGTTCACAG