

A)

		10	20	30	40	50	60	70	80	90	100
hTNIK	1	MASDSPARSL	DEIDLSALRD	PAGIFELVEL	VGNNGTYGQVY	KGRHVKTGQL	AAIKVMDVTG	DEEEIKQEI	NMLKKYSHHR	NIATYYGAFI	KKNPPGMDDQ
xTNIK-full	1	MASDSPARSL	DEIDLSALRD	PAGIFELVEL	VGNNGTYGQVY	KGRHVKTGQL	AAIKVMDVTG	DEEEIKQEI	NMLKKYSHHR	NIATYYGAFI	KKNPPGMDDQ
xTNIK-Satow	1	MASDSPARSL	DEIDLSALRD	PAGIFELVEL	VGNNGTYGQVY	KGRHVKTGQL	AAIKVMDVTG	DEEEIKQEI	NMLKKYSHHR	NIATYYGAFI	KKNPPGMDDQ
hTNIK	101	LWLVMFCGA	GSVTDLIKNT	KGNTLKEEVI	AYICREILRG	LSHLHQHKVI	HRDIKQGNVL	LTENAEVKLV	DFGVSAQLDR	TVGRRNTFIG	TPYWMAPEVI
xTNIK-full	101	LWLVMFCGA	GSVTDLIKNT	KGNTLKEEVI	AYICREILRG	LSHLHQHKVI	HRDIKQGNVL	LTENAEVKLV	DFGVSAQLDR	TVGRRNTFIG	TPYWMAPEVI
xTNIK-Satow	101	LWLVMFCGA	GSVTDLIKNT	KGNTLKEEVI	AYICREILRG	LSHLHQHKVI	HRDIKQGNVL	LTENAEVKLV	DFGVSAQLDR	TVGRRNTFIG	TPYWMAPEVI
hTNIK	201	ACDENPDATY	DFKSDLWSLG	ITAIEMAEGA	PPLCDMHPMR	ALFLIPRNP	PRLSKKWSK	KFQSFIESCL	VKNHSQRPAT	EQLMKHPFIR	DQPNERQVRI
xTNIK-full	201	ACDENPDATY	DFKSDLWSLG	ITAIEMAEGA	PPLCDMHPMR	ALFLIPRNP	PRLSKKWSK	KFQSFIESCL	VKNHGQRST	EQLMKHPFIR	DQPNERQVRI
xTNIK-Satow	201	ACDENPDATY	DFKSDLWSLG	ITAIEMAEGA	PPLCDMHPMR	ALFLIPRNP	PRLSKKWSK	KFQSFIDSL	VKNHSQRPTT	DQLMKHPFIR	DQPNERQVRI
hTNIK	301	QLKDHDRTK	KKRGEKDETE	YEYSGSEEEE	EENDSGEPSS	ILNLPGESTL	RRDFLRLQLA	NKERSEALRR	QQLEQQQREN	EEHKRQLLAE	RQKRIFEEQKE
xTNIK-full	301	QLKDHDRTK	KKRGEKDETE	YEYSGSEEEE	EENDSGEPSS	ILNLPGESTL	RRDFLRLQLA	NKERSEALRR	QQLEQQQREN	EEHKRQLLAE	RQKRIFEEQKE
xTNIK-Satow	301	QLKDHDRTK	KKRGEKDETE	YEYSGSEEEE	EENDSGEPSS	ILNLPGESTL	RRDFLRLQLA	NKERSEALRR	QQLEQQQREN	EEHKRQLLAE	RQKRIFEEQKE
hTNIK	401	QRRRLEEQR	REKELRKQEQ	REQRHYEEQ	MRREEERRA	EHEQEYIRRO	LEEEQRQLEI	LQQQLLHEQA	LLLEYKRKQL	EEQRAERLQ	RQLQKERDYL
xTNIK-full	401	QRRRLEEQR	REKELRKQEQ	REQRHYEEQ	MRREEERRA	EHEQEYIRRO	LEEEQRQLEI	LQQQLLHEQA	LLLEYKRKQL	EEQRAERLQ	RQLQKERDYL
xTNIK-Satow	401	QRRRLEEQR	REKELRKQEQ	REQRHYEEQ	MRREEERRA	EHEQEYIRRO	LEEEQRQLEI	LEEEQRQLEI	LLLEYKRKQL	EEQRAERLQ	RQLQKERDYL
hTNIK	501	VSLQ---QR	QEQRPVEKK	PLYHYKEGMS	PSEKPAWAKE	VEDRSRLNRQ	SSPAMPKHVA	NRISDPNLP	RSEFSFISGV	QPARTPPMLR	PVDQ--IPLH
xTNIK-full	501	VSLQ---QR	QEQRPVEKK	PLYHYKEGMS	PSEKPAWAKE	VEDRSRLNRQ	SSPAMPKHVA	NRISDPNLP	RSEFSFISGV	QPARTPPMLR	PVDQ--IPLH
xTNIK-Satow	472	VSLQ---QR	QEQRPVEKK	PLYHYKEGMS	PSEKPAWAKE	VEDRSRLNRQ	SSPAMPKHVA	NRISDPNLP	RSEFSFISGV	QPARTPPMLR	PVDQ--IPLH
hTNIK	596	VAVKSQGPAL	TASQSVHEQP	TKGLSGFQEA	LNVTSHRVM	PRQNSDPTSE	NPPLPTRIEK	FDRSSWLRQE	EDIPPKVPQR	TTSISPALAR	KNSPGNGSAL
xTNIK-full	601	VSVKTQGSLL	SASQSLHEQS	AKGMSAFQEG	IIS--HRPEM	PRQNSDPTSE	NPPLPTRIEK	FDRSSWLRQE	EDFPKVPQR	TTSISPALAR	KNSCGNGNSL
hTNIK	696	GPRLSQPIR	ASNPDLRRE	PILESPLQRT	SSGSSSSST	PSSQSSQGG	SQPQSGAGSS	ERTRVRA-NS	KSEGSPLVPH	EPAKVKEEES	RDITRPSRPA
xTNIK-full	699	GNNLATHPIR	ASNPDLRRE	TVIENPIQRI	SSGSSSSST	PSSQSSQGG	SQPQSGAGSS	ERNRARAGNN	KPEGSPLLPH	ETSNSKAEEN	RDVTRPSRPA
hTNIK	795	SYKKAIDE--	-----	-----	--DLTALAKE	LRELRIEETN	RPMKKTVDYS	SSSEESSE	EEEEEGESET	HDGTVAVSDI	PRLIPTGAPG
xTNIK-full	799	SYKKAIDEAV	ISQTEPADDG	MVMPRRVSKS	KDTLALAKE	LRELRIEETN	RPIKKTVDYS	SSSEESSE	EE--DGESEA	QDGTVPVSDI	PRLITITG--
hTNIK	871	S-NEQYVNM	VGTHGLETS	ADSFSGSIR	EGTLMIRETS	GDKKRSRSHD	SNGFASHINL	PDLVQSSHSP	AGTPTEGLGR	VSTHSQEMDS	GTEYGMGSST
xTNIK-full	895	SENEPYNVGM	QGMETSQSET	FRN----ISR	LDMIR--TS	GDKKRSRSHD	SNGFASHINL	PDLVQSSHSP	AGTPTEGLGR	GPTHAQEMDT	VNEYGMANNT
hTNIK	970	KASFTPFVDP	RVYQTSPTDE	D-EEDEE---	---SSAAALF	TSELLRQEQ	KLNEARKISV	VNVNPTNIRP	HSDTPEIRKY	KKRFNSEILC	AALWGVNLLV
xTNIK-full	988	KASFTPFVDP	RVYQTSPTDN	DDEEDED	DEESSATALF	TSELLRQEQ	KLNEARKISV	VNVNPTNIRP	HSDTPEIRKY	KKRFNSEILC	AALWGVNLLV
hTNIK	1063	GTENGLMLLD	RSQGQKVYNL	INRRRFQMD	VLEGLNVLT	ISGKKNLKV	YLSWLNRI	LHNDPEVEKK	QGWITVGDLE	GCIHYKVVKY	ERIKFLVIAL
xTNIK-full	1088	GTENGLMLLD	RSQGQKVYNL	INRRRFQME	VLEGLNVLT	ISGKKNLKV	YLSWLNRI	LHNDPEVEKK	QGWITVGELE	GCVHYKVVKY	ERIKFLVIAL
hTNIK	1163	KNAVEIYAWA	PKPYHKFMAF	KSFADLQHKP	LLVDLTVVEEG	QLRKVIFGSH	TGFHVIDVDS	GNSYDIYIPS	HIQGNITPHA	IVILPKTDGM	EMLVCYEDEG
xTNIK-full	1188	KNAVEIYAWA	PKPYHKFMAF	KSFTDLQHRP	LLCDLTVVEEG	QLRKVIFGSS	TGFHVIDVDS	GNTYDIYIPS	HIQGNITPHA	IVLPLKTDGM	EMLVCYEDEG
hTNIK	1263	VYVNTYGRIT	KDVLVQWGM	PTSVAIYHSN	QIMGWGEKAI	EIRSVETGHL	DGVFMHKRAQ	RLKFLCERN	KVFFASVRS	GSSQVFFMTL	NRNSMMNW
xTNIK-full	1288	VYVNTYGRIT	KDVLVQWGM	PTSVAIYHSN	QIMGWGEKAI	EIRSVETGHL	DGVFMHKRAQ	RLKFLCERN	KVFFASVRS	GSSQVFFMTL	NRNSMMNW

B)

		10	20	30	40	50	60	70	80	90	100
hMINK	1	MGDPAPARSL	DDIDLSALRD	PAGIFELVEV	VGNNGTYGQVY	KGRHVKTGQL	AAIKVMDVTE	DEEEIKQEI	NMLKKYSHHR	NIATYYGAFI	KKSPPGDDQ
xMINK	1	MASDPPARSL	DDIDLSALRD	PAGIFELVEV	VGNNGTYGQVY	KGRHVKTGQL	AAIKVMDVTE	DEEEIKQEI	NMLKKYSHHR	NIATYYGAFI	KKSPPGDDQ
hMINK	101	LWLVMFCGA	GSVTDLVKNT	KGNAKEDCI	AYICREILRG	LHLHAHKVI	HRDIKQGNVL	LTENAEVKLV	DFGVSAQLDR	TVGRRNTFIG	TPYWMAPEVI
xMINK	101	LWLVMFCGA	GSVTDLVKNT	KGNAKEDCI	AYICREILRG	LHLHAHKVI	HRDIKQGNVL	LTENAEVKLV	DFGVSAQLDR	TVGRRNTFIG	TPYWMAPEVI
hMINK	201	ACDENPDATY	DYRSDIWSLG	ITAIEMAEGA	PPLCDMHPMR	ALFLIPRNP	PRLSKKWSK	KFIDFIDTCL	IKTYLSRPT	EQLKHPFIR	DQPTERQVRI
xMINK	201	ACDENPDATY	DYRSDIWSLG	ITAIEMAEGA	PPLCDMHPMR	ALFLIPRNP	PRLSKKWSK	KFIDFIDTCL	IKNYMSRPT	EPLKHPFIR	DQPTERQVRI
hMINK	301	QLKDHDISR	KKRGEKEETE	YEYSGSEED	DSHGEEGEP	SIMNVPGEST	LRREFLRLQ	ENKSNSEALK	QQQLQQQQ	RDPEAHIKHL	LHQRRRIE
xMINK	301	QLKDHDISR	KKRGEKEETE	YEYSGSEED	ENHGDEGEP	SIMNVPGEST	LRREFLRLQ	ENKSNSEALK	QQ--VGAQH	RDSEAHIKOL	LHERQRIE
hMINK	401	QKEERRVVEE	QRREREQRK	LQEKEQRRR	EDMQALRRE	ERRQAEREQ	YKRKQLEEQ	QSERLQRLQ	QEHAYLKSQ	QQQQQQQLQ	QQQQLLPGD
xMINK	399	QKEERRVVEE	QRREREQRK	QKEEQRRR	DDI---RRE	ERRMAEREQ	YKRKQLEEQ	QSERLQRLQ	QEHAYLKSQ	QQQQQQQQQ	QQQK----
hMINK	501	RKPLYHYGRG	-MNPADKPAW	AREVEERTM	NKQNSPLAK	SKPGSTGPEP	PIPQASPGPP	GPLSQTPPMQ	RPVEPQEGPH	KSLVAHRVPL	KPYAA--PVP
xMINK	491	-KPLYHYNRG	VMNPSEKPAW	AREVEERSL	NKQS--SPLAI	TKLSSVESAG	NP-----	---SQTTPSQ	RPPEIQE--H	KPLRTTPQNR	---AAFRPTP
hMINK	598	RSQSLQDQPT	RNLAAFPASH	DDPAIPAPT	ATPSARGAVI	RQNSDPTSEG	PGPSPNPAP	VRPDNEA-PP	KVPQRTSSIA	TALNTSGAGG	SRPAQA---V
xMINK	573	RPNSLQDPLA	PPVRHAPVPP	PADRNHLRSQ	SSDPSPDGG	PSSRLERGP-	-----W	VKLQPEVHPP	KVPQRTSSIA	TALNTSGSGG	SRPVQQQP
hMINK	694	RARPRSNSAW	QIYLQRAER	GTPKPPGPPA	QPPGPPNASS	NPDLRSDPG	WERSDVSPLA	SHGLPQAGS	LERNRVGVS	KPDSSPVLSP	GNAKAPDDHR
xMINK	663	RA-----	-----	-----S	NPDLRRAESG	WERSDLSQS	PHPNLPQAGS	LERNRI-APH	KLEESSISPP	GSKTPGEEHR	
hMINK	794	SRPGRPASYS	RAIGEDFVLL	KERTLDEAPR	PKKAMDYSS	SSEEVESSED	DEEEGEGPA	EGSRDTPGG-	RS--DGD	VSTMVHVHVE	EITG-T-QPP
xMINK	725	SRPGRPA---	-----DHLLV	KDRP-EDVPK	APKKALDYSS	SSDELDSSE	EEEEGDAERQ	EPSRDSGAS	RSGRDADTDS	VSTMVHVHVE	ELMGSTSDS
hMINK	889	YGGGTMVVQR	TPEEERLLH	ADSNYTNLP	DVVQPSHPT	ENSKGQSPSS	KDGS--DYQS	RGLVKAPGKS	SFTMFVDLGI	YQP--GGSDS	IPITA-LVGG
xMINK	816	YGDGTMVQQR	TPEEERLLH	ADSNYTNLP	DVVQPSHPT	EPKQGTSPSS	KEGNSDYQS	RGLVKAPKPT	SFTMFVDLGL	YQS5GGGDDT	IPVAASYVSG
hMINK	986	EGTRLDQLQY	DVRKGSVNVN	NPTNTRAHSE	TPEIRKYKRR	FNSEILCAAL	WGVNLLVGT	NGLMLLDRSG	QGVYGLIGR	RRFQQMDVLE	GLNLLITISG
xMINK	916	DPARLEQLKY	EARKGSVNVN	NPTNTRPHSD	TPEIRKYKRR	FNSEILCAAL	WGVNLLVGT	NGLMLLDRSG	QGVYGLITR	RRFQQMDVLE	GLNLLITISG
hMINK	1086	KRNKLRVYLL	SWLRNKILHN	DPEVEKQGW	TTVGDMEGCG	HYRVVKYERI	KFLVIALKSS	VEVYAWAPK	YHKFMAFKSF	ADLPHRPLLV	DLTVEEGQRL
xMINK	1016	KRNKLRVYLL	SWLRNKILHN	DPEVEKQGW	STVGDMDGCV	HYRVVKYERI	KFLVIALKNS	VEVYAWAPK	YHKFMAFKSF	TDIHPRLQLV	DLTVEEGQRL
hMINK	1186	KVIYGSAGF	HAVDVDSGNS	YDIYIPVHIQ	SQITPHAIIF	LPNTDGMEML	LCYEDGYYV	NTYGRIKDV	VLQWGMEMTS	VAYICSNQIM	GWGEKAIER
xMINK	1116	KVIYGSAGF	HAVDVDSGNN	YDIYIPVHIQ	SQINPHAIIF	LPNTDGMEML	LCYEDGYYV	NTYGRIKDV	VLQWGMEMTS	VAYICSNQIM	GWGEKAIER
hMINK	1286	SVETGHLDGV	FHMKRAQRLK	FLCERNDKVF	FASVRSGGSS	QYVFMFLNRS	CIMNW				
xMINK	1216	SVETGHLDGV	FHMKRAQRLK	FLCERNDKVF	FASVRSGGSS	QYVFMFLNRS	CIMNW				

Figure S1i

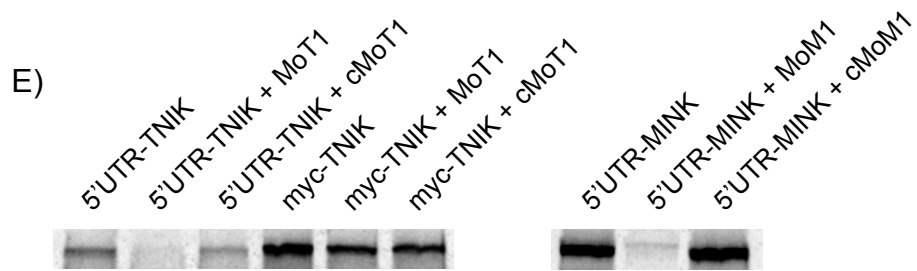
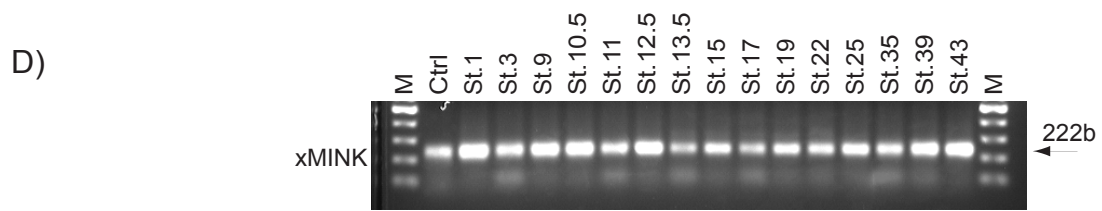
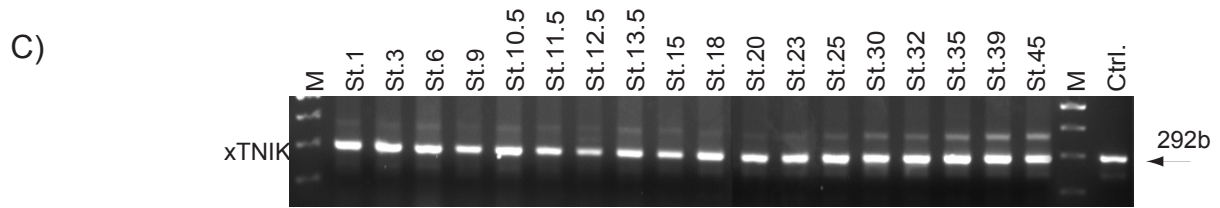


Figure S1ii

F)

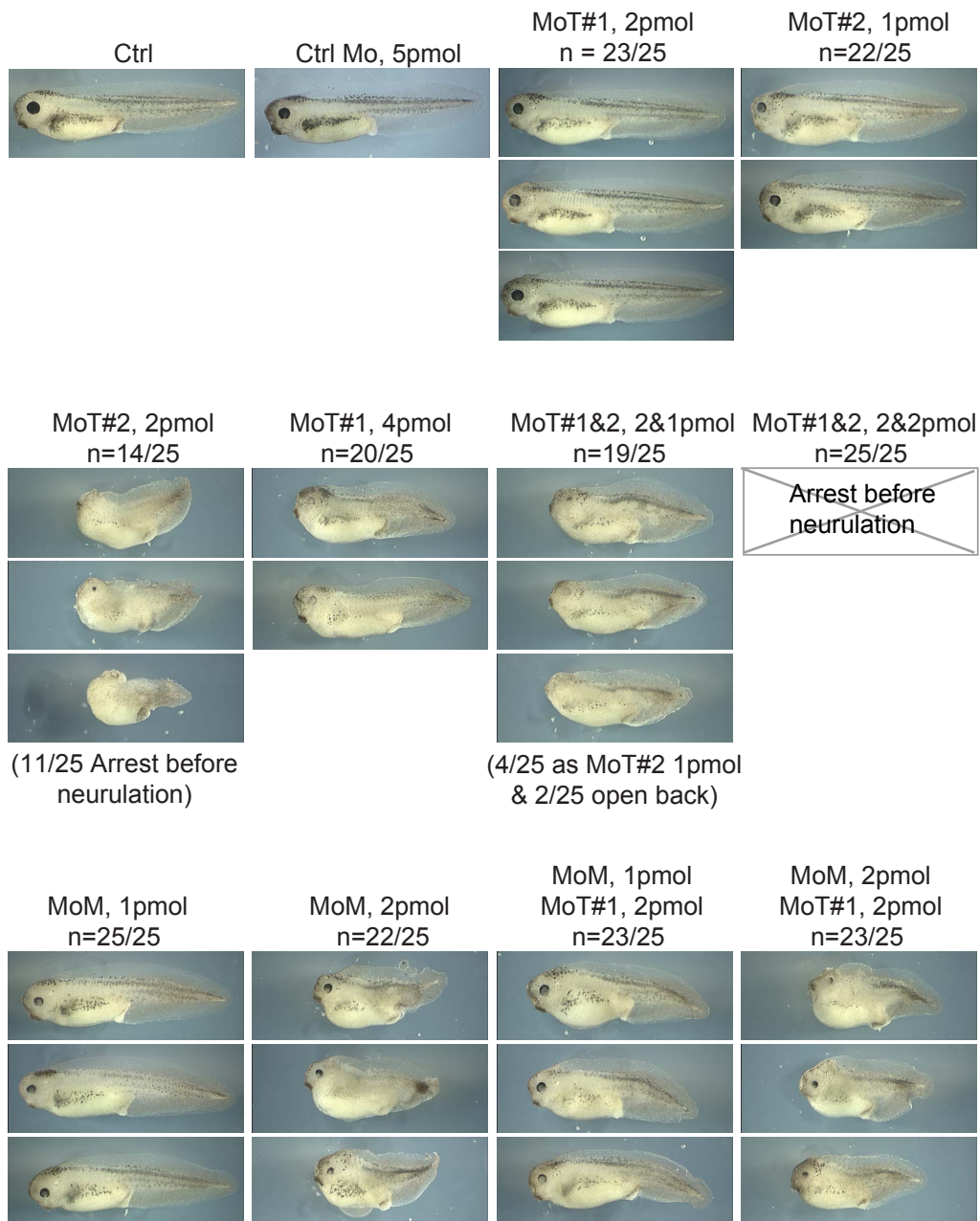


Figure S1iii