

1/14

Human STING (SEQ ID NO:306) and Tasmanian devil STING (SEQ ID NO:349):

[illegible]

FIGURE 1

2/14

Human STING (SEQ ID NO:306) and Marmoset STING (SEQ ID NO:359):

Human	1	MPHSSLHPSIPCPRGHGAQKAALVLLSACLVTLWGLGEPPEHTLRYLVLH	50
		. : :	
Marmoset	1	MPHSSLHPSIPHPRGHGAQEAAALVLLSVCLVTLWWLREAPEDILRFLVLH	50
Human	51	LASLQLGLLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPLRRGALLL	100
		.:. : : : : . : . .	
Marmoset	51	LASLQLGLLLNRLCSLAEELRHVHTRYQGSYWRAVRACLGCPIRLGAQLL	100
Human	101	LSIYFYYSLPNAVGPFFTWMALLGLSQALNILLGLKGLAPAEISAVCEK	150
			
Marmoset	101	LSIYFYCFLPN--GRPFTWMALLGFSQALNILLGLKGLAPAEISAVCEK	148
Human	151	GNFNVAHGLAWSYYIGYLRILPELQARIRTYNQHYNNLLRGAVSQRLYI	200
		 : . .	
Marmoset	149	RNFNVAHGLAWSYYIGYLRILPGFQARIRTYNQHNNNVLRGPASQRLYI	198
Human	201	LLPLDCGVDPNLSMADPNIRFLDKLPQQTGDHAGIKDRVYSNSIYELLEN	250
		. . : . . . :	
Marmoset	199	LFPLDCGVDPNLSMADPNIRFLDKLPQETIDRAGIKGRVYTNSIYELLEN	248
Human	251	GQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLQAKLFCRTLEDILA	300
		. : .	
Marmoset	249	GQRAGACVLEYASPLQTLFAMSQYQGAGFSREDRLQAKLFCRTLEDILA	298
Human	301	DAPESQNNCRLIAYQEPADDSSFSLSQEVLRLRQEEKEEVTVGSLKTS	350
		. : . . : : .	
Marmoset	299	DAPESQNNCRLIVYEEPADGSSFLLSQEVLQHLRQEEEEVTVGSLKTSE	348
Human	351	VPSTSTMSQEPPELLISGMEKPLPLRTDFS	379
		: ..	
Marmoset	349	VPSTSTMSQEPPELLISGMEKPLPLRSDLF	377

FIGURE 2

REPLACEMENT SHEET

3/14

Human STING (SEQ ID NO:306) and cattle STING (SEQ ID NO:360):

Human	1	MPHSSLHPSIPCPRGHGAQKAALVLLSACLVTLWGLGEPPEHTLRYLVLH	50
Cattle	1	MPHSSLHPSIPQPRGLRAQKAALVLLSACLVALWGLGEPDPDYTLKWLVLH	50
Human	51	LASLQLGLLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPLRGALLL	100
Cattle	51	LASQQMGLLIKIGICSLAEELCHVHSRYHGSYWRVAVRACLCSSMRCGALLL	100
Human	101	LSIYFYYSLPNAVGPFFTWMALLGLSQALNILLGLKLAPAEISAVCEK	150
Cattle	101	LSCYFYCSLPNMADLPFFTWMALLGLSQALNILLGLQLGAPAEVSAICEK	150
Human	151	GNFNVAHGLAWSYYIGYLRILPELQARIRTYNQHYNNLLRGAVSQRLYI	200
Cattle	151	RNFNVAHGLAWSYYIGYLRILPGLPARIQIYNQFHNNTLQGAGSHRLHI	200
Human	201	LLPLDCGVPDNLMSADPNIRFLDKLPQQTGDHAGIKDRVYSNSIYELLEN	250
Cattle	201	LFPLDCGVPDDLNVADPNIRFLHELPPQGSADRAGIKGRVYTNSIYELLEN	250
Human	251	GQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLAQAKLFCRTLEDILA	300
Cattle	251	GQRAGVCVLEYATPLQTLFAMSQDGRAGFSREDRLAQAKLFCRTLEDILA	300
Human	301	DAPESQNNCRLIAYQEPAADSSFSLSQEVLRHLRQEEKEEVTVGLKTS	350
Cattle	301	NAPESQNNCRLIVYQEPAGSSFSLSQEILQHLRQEER-EVTMGSTETSV	349
Human	351	VPSTSTMSQEPPELLISGMEKPLPLRTDFS	379
Cattle	350	MPGSSVLSQEPPELLISGLEKPLPLRSDVF	378

FIGURE 3

REPLACEMENT SHEET

4/14

Human STING (SEQ ID NO:306) and cat STING (SEQ ID NO:356):

Human	1	MPHSSLHPSIPCPRGHGAQKAALVLLSACLVTWGLGEPPEHTLRYLVLH	50
		.:. :. .:. .:. .	
Cat	1	MPRTGLHPSIPRPRGMGAQKAALVLLAVCLAALWRLGESPDHTLRWLVLH	50
Human	51	LASLQLGLLLNVCSLAEELRHIHSRYRGSYWRTVRACLGCPLRGALLL	100
		. .:. .:. .:. .:. .:. .:.	
Cat	51	LASLQLGLLFTGVCHLTEELCHLHSRYQGSYWRAMKACLGSPVRSGALLL	100
Human	101	LSIYFYYSPLNAVGPFTWMLALLGLSQALNILLGLKGLAPAEISAVCEK	150
		. .:. .:. :. .:.	
Cat	101	LSCYFYSTLP-STDLPFTWMLALLGLSQALNILLDLQGLAPAEVSAVCEK	149
Human	151	GNFNVAHGLAWSYYIGYLRILPELQARIRTYNQHYNNLLRGAVSQRLYI	200
		:. .:. .:. .:. .:. .:	
Cat	150	KNFNVAHGLAWSYYIGYLRILPGLPARVLTCNQLHNNILRGTGSHRLHI	199
Human	201	LLPLDCGVPDNLSMADPNIRFLDKLPQQTGDHAGIKDRVYSNSIYELLEN	250
		. . .:. .:. . .:. .:. .:. .:. .:. .:	
Cat	200	LFPLDCGVPDDMSVADPNIRFLYELPQQSADRAGIKGRVYTNSVYALLEN	249
Human	251	GQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLEQAKLFCRTLEDILA	300
		:. 	
Cat	250	GQQAGICVLEYATPLQTLFAMSQDGRAGFSREDRLEQAKLFCRILEDILA	299
Human	301	DAPESQNNCRLIAYQEPADDSSFSLSQEVLRLHLRQEEKEEVTVGSLKTS	350
		:. .:. . .:. . .:. .:. .:	
Cat	300	DTPECQNNCRLIVYQEPPEEGSNFSLSQEILRLHLRQEER-EVTVGSGVTSM	348
Human	351	VPSTSTMSQEPPELLISGMEKPLPLRTDFS	379
		.:. .:. . .:. .:. .:. .:. .:. .:	
Cat	349	VRNPSVLSQEPNLLISGMEQPLPLRTDVF	377

FIGURE 4

REPLACEMENT SHEET

5/14

Human STING (SEQ ID NO:306) and ostrich STING (SEQ ID NO:361):

Human	1	MPHSSLHPS-----IPCPRGHGAQKAALVLLSACLVTLWGLGEPPEHTL	44
		. .	
Ostrich	1	MAHESGTPSNPATPLIPKAREGRAQHAAYVLLALCAAALYLAGEPVVHIA	50
Human	45	RYLVHLHLASLQLGLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPRL	94
		 : : : : : : : : : : : : : :	
Ostrich	51	RSFTSHFVALQIGALLKGICYLVEEIFHLETRHRGSFRRALSACL--HLR	98
Human	95	-RGALLLSIYFYYSLPNAVGPFFTWMMLALLGLSQALNILLGLKGLAPAE	143
		... :	
Ostrich	99	WHVTLLLVCGSAYVALLDGDEQPLGLHLGLACLCQLLILALGLHKPSAVE	148
Human	144	ISAVCEKGNFNVAHGLAWSYYIGYLRLLPELQARIRTYNQHYNNLLRGA	193
		: :	
Ostrich	149	ISEMSESKQNVAHGLAWSYYVGYLKIVLPRLKESMENIGRTNPNMLAHK	198
Human	194	VSQRLYILLPLDCGVPDNLMSADPNIRFLDKLPQQTGDHAGIKDRVYSNS	243
		: :	
Ostrich	199	ETWKLHILVPLSCNICDDLEKADSNIQYAMDLPETTLTRAGTKKRVYRNT	248
Human	244	IYELLENGQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLEQAKLFCR	293
		: :	
Ostrich	249	LYK-IKDEDKFRFCVVEYATPLQSLYAMSQDECAAFSREDRIEQAKLFYR	297
Human	294	TLEDILADAPESQNNCRLIAYQEPADDSSFSLSQEVLRLRHLRQEEKEEVTV	343
		: :	
Ostrich	298	TLEEILQSAKECAGTYRLIVYEESGEAETHFLSREILRHLQQQRQEEYTV	347
Human	344	--GSLKTSAVPSTSTMSQEPPELLISGMEKPLPLRTDFS	379
		: :	
Ostrich	348	CDGTL-----CSTDLSLQISESDLPQPLRSDCL	375

FIGURE 5

REPLACEMENT SHEET

6/14

Human STING (SEQ ID NO:306) and crested ibis STING (SEQ ID NO:362):

Human	1	---MPHSSLHPS---IPCPRGHGAQKAALVLLSACLVTWGLGEPPEHTL	44
		 : :	
Crested	1	MSQEPQWLSHPTALLIPKARGGRAQHAYVLLLALCAAVLYLAGEPLVPSA	50
Human	45	RYLVHLHLASLQLGLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPRL	94
		.: ... : : :	
Crested	51	RSLISHFMALQIGVLLKGTCYLAEEIFHLQSRHHGSFWRALSACF--PLR	98
Human	95	RGALLLSIYFYYSLPNAVGPFTWMLALLGLSQALNILLGLKGLAPAEI	144
		... : :	
Crested	99	WHGLMLLVCGSAYVALLEDGQPLGLHLGLASLCQLLILALGLHKPSAVEM	148
Human	145	SAVCEKGNFNVAHGLAWSYYIGYLRLLPELQARITYNQHYNNLLRGAV	194
		.: :	
Crested	149	SEMSERSKQNVAHGLAWSYYVGYLKIVLPRVKKSMEEFSTRANPNVLARRE	198
Human	195	SQRLYILLPLDCGVPDNLSMADPNIRFLDKLPQQTGDHAGIKDRVYSNSI	244
		:.: :	
Crested	199	TWKLHILVPLSCDVYDDLEKADSNIQYLMDLPETTLTRAGTKKRVYKHSL	248
Human	245	YELLENGQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLAQAKLFCRT	294
		.:...	
Crested	249	YTIRDEGNKLWHCAVEYATPLQSLYAMSQDEYAAFSREDRLAQAKLFYRT	298
Human	295	LEDILADAPESQNNCRLLIAYQEPADDSSFSLSQEVLRLRQEEKEEVTVG	344
		:	
Crested	299	LEEILKGSKECAGTYRLIVYEESGEAETHSLSRDILWHLRQQCHEEYTVY	348
Human	345	SLKTSAPVSTSTMSQEPPELLISGMEKPLPLRTDFS	379
			
Crested	349	EGNQPHNPSTTLHSTELNLQISESDLPQPLRSDC-	382

FIGURE 6

REPLACEMENT SHEET

7/14

Human STING (SEQ ID NO:306) and coelacanth (variant with SEQ ID NO:363) STING:

Human	1	MPHSSLHPSIPCPRGHGAQKAALVLLSACLVTWGLGEPPEHTLRYLVLH	50
			
Coelacanth	1	FGLQNMSAIIPQPRGNRANQMAYFIITVILMLLWIFRNIMDNVLEVIALH	50
Human	51	LASLQLGLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPPLRRGALLL	100
		:..	
Coelacanth	51	ILLQGAAIMKGICNFAEEVNHVQPRYGGSYWKALEACLNLSKYDVMKIV	100
Human	101	LS--IYFYYSLPNAVGPFTWMLALL--GLSQALNILLGLKGLAPAEISA	146
		.: :	
Coelacanth	101	FAGVLWWHFSSSLFV---VWFLHLLVSLCHLLNNVLGVLKPSPVEVSE	146
Human	147	VCEKGNFNVAHGLAWSYYIGYLRILPELQARIRTYNQHYNNLLRGAVSQ	196
		:.	
Coelacanth	147	IYERNRIGVAHGLAWSYYLGYLKLVLPEDRIKSYNVSHGNLLKHKETW	196
Human	197	RLYILLPLDCGVPDNLSMADPNIRFLDKLPQQTGDHAGIKDRVYSNSIYE	246
		:	
Coelacanth	197	RLHILLPLSCSIFDNLADVDSNIEFLDNLSELQINRAGIKGRSYKHSLYQ	246
Human	247	LENGQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLQAKLFCRTLE	296
		:	
Coelacanth	247	VLEDKRPHYCILEYATPLKSLEMSKEASAEFTKEDRLEQTKLFYRTLK	296
Human	297	DILADAPESQNNCRLIAY--QEPADDSSFSLSQEVLRLRHLRQEEKEEVTVG	344
		:	
Coelacanth	297	DILDNSQECRGRFRLVIYDGREDSGKSHF-LSKELLRLHNQQQKEEYFMS	345
Human	345	SLKTSAPVSTSTMSQEPPELLISGMEKPLPLRTDFS	379
			
Coelacanth	346	EQTQPNSSSTSCSTEPQLMISDTDAPHTLKRQVC	380

FIGURE 7

8/14

Human STING (SEQ ID NO:306) and zebrafish STING (SEQ ID NO:348):

Human	1	-----MPHSSLHPISIPCPRGHGAQKAALVLLSACLVTLWGLGEPPE	41
Zebrafish	1	MSVMGEDALVPRARSRLPVMCAAGLG---FLT LAVAWLLDSDKFSE---	43
Human	42	HTLRYLVHLASLQLGLLLNG---VCSLAEEELR-HIHSRYRGSYWRTVR	86
Zebrafish	44	-----RAGIIAFGLMLERFIYCICLLAEELLFHSRQRYHGMRMSEIFR	85
Human	87	ACLCGPLRRGA--LLLLSIYFYYSLPNAVGPPTWMLALLGLSQAL----	130
Zebrafish	86	ACF-----RSGSILGMCAIFL-----MLMLGGVSFSVKQWS	116
Human	131	--NIL-----LGLKGLAPAEISAVCEKGNFNVAHGLAWSYYIGYLR	169
Zebrafish	117	HFNLMCAGYMLLNSLGVLPAPVEISEICEAKKMNVAHGLAWSFYIGYLK	166
Human	170	LILPELQARIRTYNQHYNNLLRGAVSQRLYILLPLDCGVPDNLSMADPNI	219
Zebrafish	167	FLLPALEVNVREYSRR----ERLSSPRLHILLPLNARVPSKPEEEDTNV	211
Human	220	RFLDKLPQQTGDHAGIKDRVYSNSIYELENGQRAGTCVLEYATPLQTLF	269
Zebrafish	212	VFHENLPDLKLDRAGVRKRSTNSVYKITHNNE-TFSCILEYATPLLTLTY	260
Human	270	AMSQYSQAGFSREDRLAQAKLFCRTLEDILADAPESQNNCRLIAYQEPAD	319
Zebrafish	261	QMSQESSAGFGERERKQQVLLFYRTLSQLDNSLECRNRRLILLNDEHT	310
Human	320	DSSFSLSQEVLRHLRQEE-----KEEVTVGSLKTSAVPST-	354
Zebrafish	311	GDPHYLSREL FQN LKQQDG EIFMDPTNEVHPVPEEGPVGNC-NGALQATF	359
Human	355	--STMSQEPPELLISGMEKPLPLR-----TDFS-----	379
Zebrafish	360	HEEPSMDEPTLMFS---RPQSLRSEP VETTDYFNPSSAMKQN	398

FIGURE 8

REPLACEMENT SHEET

9/14

Human STING (SEQ ID NO:305) and boar STING (SEQ ID NO:365):

Human	1	MPHSSLHPSIPCPRGHGAQKAALVLLSACLVTWGLGEPPEHTLRYLVLH	50
		: : :	
Boar	1	MPYSSLHPSIPQPRGLRAQVAALVLLGACLVALWGLGELPEYTLRWLVLH	50
Human	51	LASLQLGLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPLRGALLL	100
		. : : . . . : : . . : .	
Boar	51	LASQQIGLLVKGLCSLAEELCHVHSRYQSSYWRAARACLGCPIRCGALLL	100
Human	101	LSIYFYSLPNAVGPPFTWMLALLGLSQALNILLGLKGLAPAEISAVCEK	150
		. : : : : : :	
Boar	101	LSCYFYFSIRDKAGLPLPWWMLALLGLSQALNILLGLQHLAPAEVSAICEK	150
Human	151	GNFNVAHGLAWSYYIGYLRLLPELQARIRTYNQHYNNLLRGAVSQRLYI	200
		 : : . . : . . :	
Boar	151	RNFNVAHGLAWSYYIGYLRLLPGLRARIQAYNQRHKNVLGGIGNHRLHI	200
Human	201	LLPLDCGVDPNLSMADPNIRFLDKLPQQTGDRAGIKDRVYSNSIYELLEN	250
		. : : : . : : . . : :	
Boar	201	LFPLDCGVDPDDLVSADPNIRFLHELPQQSADRAGIKGRVYTNSIYELLEN	250
Human	251	GQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLEQAKLFCRTLEDILA	300
		 : . . .	
Boar	251	GQPAGVCVLGYATPLQTLFAMSQDGRAGFSREDRLEQAKLFCRTLEDILA	300
Human	301	DAPESQNNCRLIAYQEPADDSSFSLSQEVLRLRHLRQEEKEEVTGSLK TSA	350
		: : . : . . : : : : : : .	
Boar	301	DAPEAQNNCRLIVYQEPTEGGSFSLSQEILRLRHLRQEER-EVTMGSAETSV	349
Human	351	VPSTSTMSQEPELLISGMEKPLPLRTDFS	379
		: : : : . : : ..	
Boar	350	VPTSSTLSQEPELLISGMEQPLPLRSDIF	378

FIGURE 9

REPLACEMENT SHEET

10/14

Human STING (SEQ ID NO:305) and bat STING (SEQ ID NO:366):

Human	1	MPHSSLHPSIPCPRGHGAQK-AALVLLSACLVTWGLGEPPEHTLRYLVL	49
		. .	
Bat	1	MSHSSLHPSVPRPRGRRARNIAAFVLLIVCLAALWLSGKPSEYTLRCLVL	50
Human	50	HLASLQLGLLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPLRGALL	99
		. .	
Bat	51	HLASQQLGLLSNRVCYLAEEELSHIHSRYQGNYWRAVRACLSCPIRFGVVL	100
Human	100	LLSIYFYYSPLNAVGPFFTWMALLGLSQALNILLGLKGLAPAEISAVCE	149
		. .	
Bat	101	LVSFFFYTSLPNIDDLPLTWMLAHLGLSEALNILLGLRGLTPAEVSTVCE	150
Human	150	KGNFNVAGHLAWSYYIGYLRILPELQARIRTYNQHYNNLLRGAVSQRLY	199
		:. .	
Bat	151	QRHFNVAGHLAWSYYIGYLRILPGLRARIHTYNQLHGNTLQGVGSHRLY	200
Human	200	ILLPLDCGVPDNLMSADPNIRFLDKLPQQTGDRAGIKDRVYSNSIYELLE	249
		. .	
Bat	201	ILFPLDCGVLDLSDADPNIRFLRELPRQSSDRAGIKNRVYTNSVYELLE	250
Human	250	NGQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLEQAKLFCRTLEDIL	299
		. .	
Bat	251	KGKPVGTCVLEYATPLQTLFAMSQDARAGFSQEDRLEQAKLFCRTLADIL	300
Human	300	ADAPESQNNCRLIAYQEPADDSSFSLSQEVLRLRQEEKEEVTVGSLKTS	349
		. .	
Bat	301	ADDPESQKSCRLIVYQEPTEESDFSLSQAILKHLRQEEKEEVTVGTVGTY	350
Human	350	AVPSTSTMSQEPPELLISGMEKPLPLRTDFS	379
		.. .	
Bat	351	EAPGSSTLHQEPPELLISGMDQPLPLRTDIF	380

FIGURE 10

11/14

Human STING (SEQ ID NO:305) and manatee STING (SEQ ID NO:367):

Human	1	---MPHSSLHPSIPCPRGHGAQKAALVLLSACLVTLWGLGEPPEHTLRYL	47
		 ::	
Manatee	1	MVEMPHSSLHPSIPRHRGHGIQKAAFVLLVACLVALWELGEPGHTLQWL	50
Human	48	VLHLASLQLGLLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPLRRGA	97
		: . : :.. . : : :	
Manatee	51	VCQLASLQLGLLLKVICSLAEELCHVHSRYQSSYWRAVRACMGCPIRRGA	100
Human	98	LLLLSIYFYSLPNAVGPPFTWMLALLGLSQALNILLGLKGLAPAEISAV	147
		. :.. : . : . :	
Manatee	101	LLLLSCYFYFCFPNMADLPLTWTLALLGLLQAMNILLSLQGLTPAEISAI	150
Human	148	CEKGNFNVAHGLAWSYYIGYLRILPELQARIRTYNQHYNNLLRGAVSQR	197
		 : ...	
Manatee	151	CEKRNLNVAHGLAWSYYIGYLRILPGLQDRIRIYNLQHNNMLRGTSQR	200
Human	198	LYILLPLDCGVPDNLSMADPNIRFLDKLPQQTGDRAGIKDRVYSNSIYEL	247
		: . : : : : : :	
Manatee	201	LHILFPLDCGVPNDLSVADANIRFLQKLPQQSADCAGIKGRVYTNSVYQL	250
Human	248	LENGQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLEQAKLFCRTLED	297
		:: ...	
Manatee	251	LEHGQPAGICVLEYATPLQTLFAMSQDGRAGFSREDRLEQAKLFCRTLED	300
Human	298	ILADAPESQNNCRLIAYQEPADDSSFSLSQEVLRHLRQEEKEEVTVGSLK	347
		. . . :.. : : : : : :	
Manatee	301	ILADAPEYQNNCRLIVYQESAEGSSFSLSQEILRHLRQEEREVTVGSVG	350
Human	348	TSAV----PSTSTMSQEPellisGMEKPLPLRTDFS	379
		. : : : : : : : : ..	
Manatee	351	TSVVPSPSPSTSSLSQEPKLLISGMEQPLPLRTDVF	387

FIGURE 11

12/14

Human STING (SEQ ID NO:305) and ghost shark STING (SEQ ID NO:368):

Human	1	MPHSSLHPSIPCPRGHGAQKAALVLLS--ACLVTLWGLGEPPEHTLRYLV	48
GhostShark	1	-----MSDSIPRPRGKVATYVGLILMSGLACLYFML----TPDYHIKFIV	41
Human	49	LHLASLQL-----GLLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCP	93
GhostShark	42	QQVAQ-QLIVSFFALCLLRLLCEFVEELGHKQTRYQNSWVRALNASLDWK-	89
Human	94	RRGALLLLSIYFYSLPNAVGPPFTWMLALLGLSQALNI-----LL	134
GhostShark	90	KYGFCLLISLLFNWVLPYEKHMSY---AVPTVGQTISLTCFCVLFKVF	135
Human	135	GLKGLAPAEISAVCEKGNFNVAHGLAWSYYIGYLRLLPELQARIRTYNQ	184
GhostShark	136	QLDVLSPAQISEISETNKCENVAHGLAWSYYLGYLKIVLPKLEEKINQYHR	185
Human	185	HYNNLLRGAVSQRLYIILLPLDCGVDPNLSMADPNIRFLDKLPQQTGDRAG	234
GhostShark	186	EYGNVLQ-QKGKKLYILIPFSCKVLDKLEKVDTNIVFYQNLPELLVDRAG	234
Human	235	IKDRVYSNSIYELL-ENGQRAGTCVLEYATPLQTLFAMSQYSQAGFSRED	283
GhostShark	235	IKRSYKHSIYLIYDQKKQQPHHCILEYATPLRSLFEMTNDSSAAAFSKEQ	284
Human	284	RLEQAKLFCRTLEDILADAPESQNNCRLIAYQEPADDSSFS---LSQEV	330
GhostShark	285	RLDQAKLFYRTLKLSILNNVPEVTGSYRLIPYDDDLGAELEGPHFVSEEIL	334
Human	331	RHLRQEEKEEVTGSLKTSAPVSTSTMSQEPPELLISGMEKPLPLRTDFS	379
GhostShark	335	KHMRQELTEYPVA--EPSNANETDCMSSEPHLMIS--DDPKPLRSYCP	378

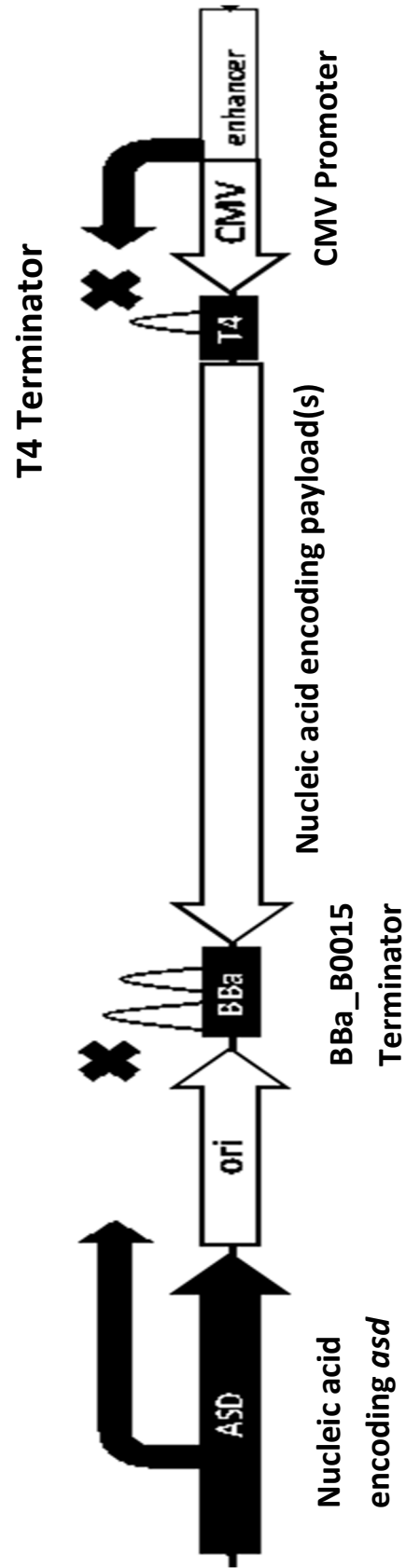
FIGURE 12

13/14

Human STING (SEQ ID NO:305) and mouse STING (SEQ ID NO:369):

Human	1	MPHSSLHPSIPCPRGHGAQKAALVLLSACLVTLWGLGEPPEHTLRLYLVLH	50
Mouse	1	MPYSNLHPAIPRPRGHRSKYVALIFLVASLMILWVAKDPPNHTLKYALAH	50
Human	51	LASLQLGLLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPLRRGALLL	100
Mouse	51	LASHELGLLLKLNLCCLAEELCHVQSRYSYQGSYWKAVRACLGCPIHCMAMIL	100
Human	101	LSIYFYYSLPNAVGPFFTWMMLALLGLSQALNILLGLKGLAPAEISAVCEK	150
Mouse	101	LSSYFYF-LQNTADIYLSWMFGLLVLYKSLSMLLGLQSLTPAEVSACEE	149
Human	151	GNFNVAHGLAWSYYIGYLRLLPELQARIRTYNQHYNNLLRGAVSQRLYI	200
Mouse	150	KKLNVAHGLAWSYYIGYLRLLPGLQARIRMFNQLHNNMLSGAGSRRLYI	199
Human	201	LLPLDCGVDPNLSMADPNIRFLDKLPQQTGDRAGIKDRVYSNSIYELLEN	250
Mouse	200	LFPLDCGVDPNLSVVDPNIRFRDMLPQQNIDRAGIKNRVYSNSVYEILEN	249
Human	251	GQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLQAKLFCRTLEDILA	300
Mouse	250	GQPAGVCILEYATPLQTLFAMSQDAKAGFSREDRLQAKLFCRTLEEILE	299
Human	301	DAPESQNNCRLIAYQEPADDSSFSLSQEVLRLRHLRQEEKEEVTGSLK TSA	350
Mouse	300	DVPESRNNCRLIVYQEPTDGNFSFSLSQEVLRLHIRQEEKEEVTMNAPMTSV	349
Human	351	VPSTSTMSQEPellisGMEKPLPLRTDFS	379
Mouse	350	APPPSVLSQEPRLlisGMDQPLPLRTDLI	378

FIGURE 13



Plasmid construct in which the expression cassette is reversed on the plasmid and is followed by the BBa_B0015 terminator, and the T4 terminator is inserted downstream of the CMV promoter.

FIGURE 14