

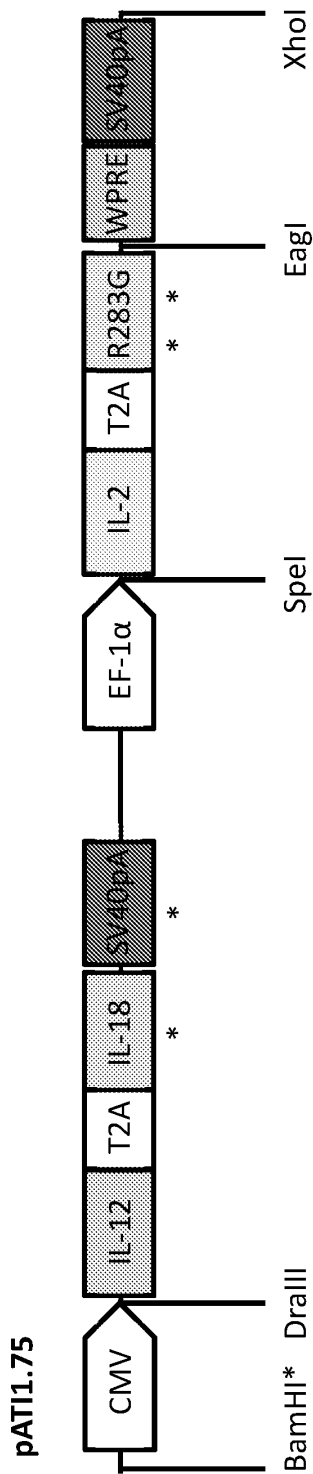
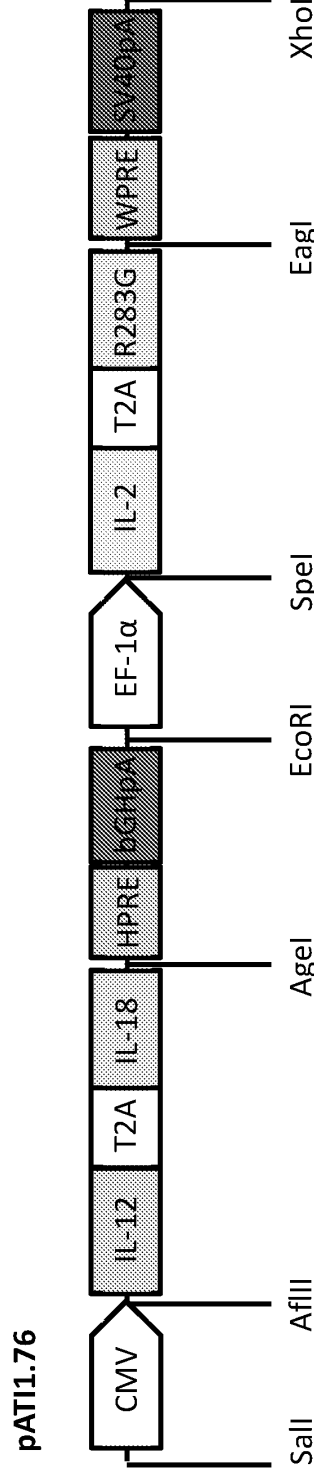


FIG. 1A



EES26

FIG. 1B

ADN-457 pAT11.76 CMV mull-36y DelCyt T2A mull-12p70 P2A muOX40L HPRE bGHpA

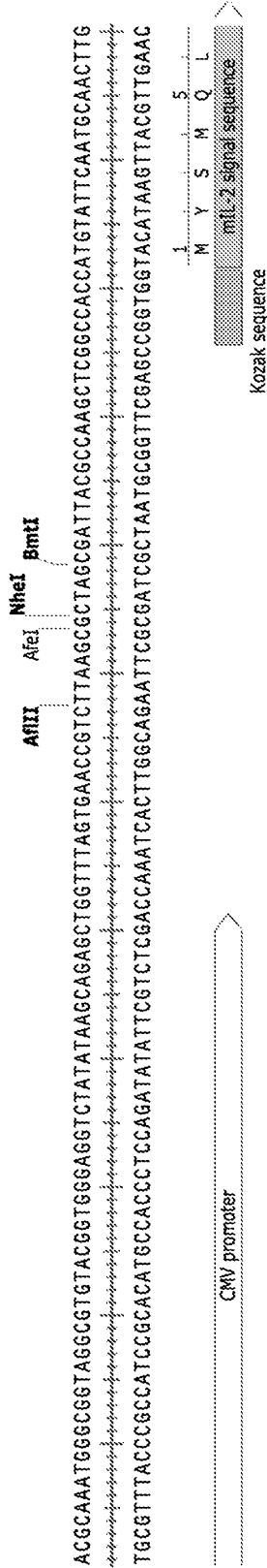


FIG. 1C

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

Human	1	MPHSSLHPSIPCPRGHGAQKAALVLLSACLVTWGLGEPPEHTLRYLVLH	50
		 :..:.. ... : : :	
Tasmanian	1	MPRSHLHPSIPQPRGWGAQKAACVLLSLCMAAVYILGESAAFTLQWLLFY	50
Human	51	LASLQLGLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPLRGALLL	100
		..: : : :..: : : : : : :	
Tasmanian	51	FTTVQVGLLLKGAYCLAEELYHIQSRHQGSYWQAIQACIHYPFQRISSL	100
Human	101	LSIYFYSLPNAVGPPFTWMLALLGLSQALNILLGLKGLAPAEISAVCEK	150
		. : : : : : : : : : :	
Tasmanian	101	LSGYFYVTLNKPNSLTWTFFALLGLSHALSFILGLQNLTSAEISEVCEK	150
Human	151	GNFNVAHGLAWSYYIGYLRLLPELQARIRTYNQHYNNLLRGAVSQRLYI	200
		.: : :	
Tasmanian	151	RHLNVAHGLAWSYYIGYKLILPGLQTRIQIYNQFNKDVLRSPGHRHLHI	200
Human	201	LLPLDCGVDPNLSMADPNIRFLDKLPQQTGDHAGIKDRVYSNSIYELLEN	250
		: . . : : : : : : : : : : : : : : :	
Tasmanian	201	LIPLDCSVDPNLSQADPNIQFLQELPQHKLDRAQIKGRIYTNSIYKISED	250
Human	251	GQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLAQAKLFCRTLEDILA	300
		. .. :	
Tasmanian	251	GQPAEVCVLEFATPLQTLFAMSQDARAGFSREDRLAQAKLFCRTLEDILE	300
Human	301	DAPESQNNCRLLIAYQEPADD--SSFSLSQEVLRLRQEEKEEVTVGS�KT	348
		:.. : : : : : : . : : : : : : : : : : : : :	
Tasmanian	301	DAPEARDCCLRVVYQEPEDKAVSNFSLSKEILRLRQERQEEFAIGPKRA	350
Human	349	SAVPSTSTMSQEPPELLISGMEKPLPLRTD-FS	379
		.. :..: : : : : : : : : : : : : : : : : : : :	
Tasmanian	351	MTVTTSTLSQEPQLLISGMEQPLSLRTDGF-	381

FIGURE 2

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

Human	1	MPHSSSLHPSPICPRGHGAQKAALVLLSACLVTLWGLGEPPHTLRYLVLH	50
Marmoset	1	MPHSSSLHPSPIPHPRGHGAQEAAALVLLSVCLVTLWWLREAPEDILRFLVLH	50
Human	51	LASLQLGLLLNGVCSLAEELRHHSRYRGSYWRTVRACLGCPLRGALLL	100
Marmoset	51	LASLQLGLLLNRRLCSLAEELRHVHTRYQGSYWRAVRACLGCPIRLGAQLL	100
Human	101	LSIYFYYSLPNAVGPPTWMLALLGLSQALNILLGLKGLAPAEISAVCEK	150
Marmoset	101	LSIYFYCFLPN---GRPETWMLALLGFSQALNILLGLKGLAPAEISAVCEK	148
Human	151	GNFENVAGHLAWSYYIGYLRLLPQLQARITYNQHYNNLLRGAVSQRLYI	200
Marmoset	149	RNFENVAGHLAWSYYIGYLRLLPGFQARITYNQHNNNVLRGPASQRLYI	198
Human	201	LLPLDCGVDPNLMSADPNIRFLDKLPQQTGDHAGIKDRVYSNSIYELEN	250
Marmoset	199	LFPLDCGVDPNLSTADPNIRFLDKLPQETIDRAGIKGRVYTNSIYELEN	248
Human	251	GQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLQAKLFCRTLEDILA	300
Marmoset	249	GQRAGACVLEYASPLQTLFAMSQYGQAGFSREDRLQAKLFCRTLEDILA	298
Human	301	DAPESQNNCRLIAYQEPADDSSFSLSQEVLRLHRQEEKEEVTVGSLKTSA	350
Marmoset	299	DAPESQNNCRLIVYEEPADGSSFFLSQEVLRHQEEEEVEVTVGSLKTSE	348
Human	351	VPSTSTMSQEPPELLISGMEKPLPLRTDFS	379
Marmoset	349	VPSTSTMSQEPPELLISGMEKPLPLRSDLF	377

FIGURE 3

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

Human	1	MPHSSLHPSIPCPRGHGAQKAALVLLSACLVTLWGLGEPPEHTLRYLVLH	50
Cattle	1	MPHSSLHPSIPQPRGLRAQKAALVLLSACLVALWGLGEPDYLKWLVLH	50
Human	51	LASLQLGLLNGVCSLAEELRHHSRYRGSYWRTVRACLGCPPLRRGALLL	100
Cattle	51	LASQQMGLLIKGICSLAEELCHVHSRYHGSYWRAVRACLCSSMRCGALLL	100
Human	101	LSIYFYYSLPNAVGPFTWMLALLGLSQALNILLGLKGLAPAEISAVCEK	150
Cattle	101	LSCYFYCSLPNMADLPFTWMLALLGLSQALNILLGLQGLAPAEVSAICEK	150
Human	151	GNFNVAGHLAWSYYIGYLRILPELQARIRTYNQHYNNLLRGAVSQRLYI	200
Cattle	151	RNFNVAGHLAWSYYIGYLRILPGLPARIQIYNQFHNNTLQGAGSHRLHI	200
Human	201	LLPLDCGVPDNLMSADPNIRFLDKLPQQTGDHAGIKDRVYSNSIYELLEN	250
Cattle	201	LFPLDCGVPDDLNVADPNIRFLHELPPQSSADRAGIKGRVYTNSIYELLEN	250
Human	251	GQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLAQAKLFCRTLEDILA	300
Cattle	251	GQRAGVCVLEYATPLQTLFAMSQDGRAGFSREDRLAQAKLFCRTLEDILA	300
Human	301	DAPESQNNCRLLIAYQEPADDSSFSLSQEVLRHLRQEEKEEVTVGSLKTS	350
Cattle	301	NAPESQNNCRLLIVYQEPAGSSFSLSQEILQHLRQEER-EVTMGSTETSV	349
Human	351	VPSTSTMSQEPPELLISGMEKPLPLRTDFS	379
Cattle	350	MPGSSVLSQEPPELLISGLEKPLPLRSDVF	378

FIGURE 4

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	LSIYFYSLPNAVGPPFTWMLALLGLSQALNILLGLKGLAPAEISAVCEK	150
Cat	101	LSCYFYSTLP-STDLPFTWMLALLGLSQALNILLDLQGLAPAEVSAVCEK	149
Human	151	GNFNVAGLAWSYIYGRLRILPELQARIRTYNQHYNNLLRGAVSQRLYI	200
Cat	150	KNFNVAGLAWSYIYGRLRILPGLPARVLTNCQLHNNILRGTSRHLHI	199
Human	201	LLPLDCGVDPNLSMADPNIRFLDKLPQQTGDHAGIKDRVYSNSIYELLEN	250
Cat	200	LFPLDCGVDPDDMSVADPNIRFLYELPQQSADRAGIKGRVYTNSVYALLEN	249
Human	251	GQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLAQAKLFCRTLEDILA	300
Cat	250	GQQAGICVLEYATPLQTLFAMSQDGRAGFSREDRLAQAKLFCRILEDILA	299
Human	301	DAPESQNNCRLLIAYQEPADDSSFSLSQEVLRLRHLRQEEKEEVTVGSLKTS	350
Cat	300	DTPECQNNCRLLIVYQEPEEGSNFSLSQEILRLRHLRQEER-EVTVGSGVTSM	348
Human	351	VPSTSTMSQEPPELLISGMEKPLPLRTDFS	379
Cat	349	VRNPSVLSQEPNLLISGMEQPLPLRTDVF	377

FIGURE 5

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

Human	1	MPHSSLHPS-----IPCPRGHGAQKAALVLLSACLVTLWGLGEPPEHTL	44
		. .	
Ostrich	1	MAHESGTPSNPATFLIPKAREGRAQHAAYVLLALCAAALYLAGEFPVVHIA	50
Human	45	RYLVLHLASLQLGLLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPLR	94
		 :	
Ostrich	51	RSFTSHFVALQIGALLKGICYLVEEIFHLETRHRGSFRRALSACL--HLR	98
Human	95	-RGALLLLSIYFYSLPNAVGPPTWMLALLGLSQALNILLGLKGLAPAE	143
		... :	
Ostrich	99	WHVTLLLVCGSAYVALLDGDEQPLGLHLGLACLQLLILALGLHKPSAVE	148
Human	144	ISAVCEKGNFENVAGHLAWSYIIGYLRILPELQARITYNQHYNNLLRGA	193
		: :	
Ostrich	149	ISEMSERSKQNVAGHLAWSYVGYLKIVLPRLKESMENIGRTNPNMLAHK	198
Human	194	VSQRLYILLPLDCGVPDNLMSADPNIRFLDKLPQQTGDHAGIKDRVYSNS	243
		: :	
Ostrich	199	ETWKLHILVPLSCNICDDLEKADSNIQYAMDLPETTLTRAGTKKRVYRNT	248
Human	244	IYELLENGQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLEQAKLFCR	293
		: :	
Ostrich	249	LYK-IKDEDKFRFCVVEYATPLQSLYAMSQDECAAFSREDRIEQAKLFYR	297
Human	294	TLEDILADAPESQNNCRLIAYQEPADDSSFSLSQEVLRLRQEEKEEYTV	343
		: :	
Ostrich	298	TLEEILQSAKECAGTYRLIVYEESEGEATHFLSREILRHLQQQRQEEYTV	347
Human	344	--GSLKTSAVPSTSTMSQEPPELLISGMEKPLPLRTDFS	379
		: :	
Ostrich	348	CDGTL-----CSTDLSLQISESDLPQPLRSDCL	375

FIGURE 6

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

Human	1	----MPHSSLHFS----IPCPRGHGAQKAALVLLSACLVTIWGLGEPPEHTL	44
		 : : ... :.. ...	
Crested	1	MSQEPQWLSHPTALLIPKARGGPAQHAVYLLALCAAVLYLAGEPLVPSA	50
Human	45	RYLVHLHLASLQLGLLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPRLR	94
		.: : ... : : : : : : : : : : : :	
Crested	51	RSLISHFMALQIGVLLKGTCTYLAEEIFHLQSRHHGSFWRALSACF--PLR	98
Human	95	RGALLLLSIYFYSLPNAVGPPFTWMLALLGLSQALNILLGLKGLAPAEI	144
		... : :	
Crested	99	WHGLMLLVCGSAYVALLEDGQPLGLHLGLASLCQLLILALGLHKPSAVEM	148
Human	145	SAVCEKGNFNVAHGLAWSYYIGYLRLLPELQARIRTYNQHYNNLLRGAV	194
		.: : : ...	
Crested	149	SEMSERSKQNVVAHGLAWSYYVGYLKIVLPRVKKSMEEFSPANPNVLARRE	198
Human	195	SQRLYILLPLDCGVDPNLSMADPNIRFLDKLPQQTGDHAGIKDRVYSNSI	244
		:.: :	
Crested	199	TWKLHILVPLSCDVYDDLEKADSNIQYLMDLPETTLTRAGTKKRKYKHS	248
Human	245	YELLENGQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLEQAKLFCRT	294
		:.. : ... :	
Crested	249	YTIRDEGNKLWHCAVEYATPLQSLYAMSQDEYAAFSREDRLEQAKLFYRT	298
Human	295	LEDILADAPESQNNCRLLIAYQEPADDSSFSLSQEVLRLHLRQEEKEEVTVG	344
		: : : ... :	
Crested	299	LEEILKGSKECAGTYRLIVYEESGEAETHSLSRDILWHLRQQCHEEYTVY	348
Human	345	SLKTSAPVSTSTMSQEPPELLISGMEKPLPLRTDFS	379
		 :	
Crested	349	EGNQPHNPSTTLHSTELNLQISESDLFPQPLRSDC-	382

FIGURE 7

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

Human	1	MPHSSLHPSIFPCPRGHGAQKAALVLLSACLVTLWGLGEPPHTLRYLVLH	50
Coelacanth	1	FGLQNMSAIIPQPRGNRANQMAYFITVILMLLWIFRNIMDNVLEVIALH	50
Human	51	LASLQLGLLLNQVCSLAEELRHIHSRYRGSYWRTVRACLGCPLRGALLL	100
Coelacanth	51	ILLQLGAAIMKIGICNFAEEVNVHVQPRYGGSYWRALEACLNLSKYDVMKIV	100
Human	101	LS--IYFYSLPNAVGPPFTWMLALL--GLSQALNILLGLKGLAPAEISA	146
Coelacanth	101	FAGVLWWHFSSSLFV---VWFLHLLVSCLCHELLNNVGLVKPSFVEVSE	146
Human	147	VCEKGNFNVAHGLAWSYYIGYLRILPELQARIRTYNQHYNNLLRGAVSQ	196
Coelacanth	147	IYERNRIGVAHGLAWSYYLGYLKLVLPELEDRIKSYNVSHGNLLKHKETW	196
Human	197	RLYIILLPLDCGVDPNLSMADPNIRFLDKLPQQTGDHAGIKDRVYSNSIYE	246
Coelacanth	197	RLHILLPLSCSIFDNLADVDSNIEFLDNLSELIQINRAGIKGRSYKHSYQ	246
Human	247	LLENGQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLQAKLFCRTLE	296
Coelacanth	247	VLDEDKRPHYCYLEYATPLKSLEMSKEASAETKEDRLQTKLFYRTLK	296
Human	297	DILADAPESQNNCRLIAY--QEPADDSFSLSQEVLRLHLRQEEKEEVTVG	344
Coelacanth	297	DILDNSQECRGRFRLVIYDGRSDSGKSHF-LSKELLRLHLNQQQKEEYFMS	345
Human	345	SLKTSAPVSTSTMSQEPellisGMEKPLPLRTDFS	379
Coelacanth	346	EQTQPNSSSTSCLSTEPQLMISDTPAPHTLKROVC	380

FIGURE 8

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

Human	1	-----MPHSSLHPSIPCPRGHGAQKAALVLLSACLVTLWGLGEPPE	41
Zebrafish	1	MSVMGEDALVPRARSRLPVMCAAGLG---FLTFLAVAWLLDSDKFSE---	43
Human	42	HTLRYLVHLASLQLGLLLNG----VCSLAEELR-HHSRYRGSYWRTVR	86
Zebrafish	44	-----RAGIIAFGLMLERFIYCICLLAEELLFHRSQRVYHGPMSEIFR	85
Human	87	ACLGCPLRRA--LLLLSIYFYYSLEPNVAGPPFTWMLALLGLSQAL----	130
Zebrafish	86	ACF-----RSGSIGLMCAIFL-----MLMLGGVSFSVKQWS	116
Human	131	--NIL-----LGLKGLAPAEISAVCEKGNFNVAHGLAWSYYIGYLR	169
Zebrafish	117	HFNLMCAGYMLLNSLGVLPAPVEISEICEAKMNVAHGLAWSFYIGYLK	166
Human	170	LILPELQARIRTYNQHYNNLLRGAVSQRLYIILLPLDCGPVDNLSMDPNI	219
Zebrafish	167	FLLPALEVNVREYSRR----ERLSSPRLHILLPLNARVPSPKPEEEDTNV	211
Human	220	RFLDKLPQQTGDHAGIKDRVYSNSIYELENQQRAGTCVLEYATPLQTTF	269
Zebrafish	212	VFHENLPDLKLDRAGVRKRSTNSVYKITHNNE-TFSCILEYATPLLTLTY	260
Human	270	AMSQYSQAGFSREDRLAQAKLFRCRTLEDILADAPESQNNCRLIAYQEPAD	319
Zebrafish	261	QMSQESSAGFGGERERKQQVLLFYRTLSQLDNLSECRNRYRLILLNDEHT	310
Human	320	DSSFSLSQEVLRHLRQEE-----KEEVTVGSLKTSAVPST-	354
Zebrafish	311	GDPHYLSRELQNLKQDGEIFMDPTNEVHPVPEGPGVGN-NGALQATF	359
Human	355	--STMSQEPELLISGMKPLPLR-----TDFS-----	379
Zebrafish	360	HEEPSMDEPTLMFS---RPQSLRSEPVTETDYENPSSAMKON	398

FIGURE 9

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

Human	1	MPHSSLHPSIPCPRGHGAQKAALVLLSACLVTWGLGEPPEHTLRYLVLH	50
		: :	
Boar	1	MPYSSLHPSIPQPRGLRAQVAALVLLGACLVALWGLGELPEYTLRWLVLH	50
Human	51	LASLQLGLLNGVCSLAEELRHHHSRYRGSYWRTVRACLGCPLRGALL	100
		. : . : . : . . . : .	
Boar	51	LASQQIGLLVKGLCSLAEELCHVHSRYQSSYWRAARACLGCPIRC GALL	100
Human	101	LSIYFYSLPNAVGPFFT WMLALLGLSQALNILLGLKGLAPAEISAVCEK	150
		. : : : :	
Boar	101	LSCYFYFSIRDKAGLPLPWMLALLGLSQALNILLGLQHLAPAEVSAICEK	150
Human	151	GNFNVAHGLAWSYYIGYLRLLLPQLQARIRTYNQHYNNLLRGAVSQRLYI	200
		 : . . : . . : . . :	
Boar	151	RNFNVAHGLAWSYYIGYLRLLLPGLRARIQAYNQ RHKNVLGGIGNHRLHI	200
Human	201	LLPLDCGVPDNLSMADPNIRFLDKLPQQTGDRAGIKDRVYSNSIYELLEN	250
		. . : : : . : . . . : :	
Boar	201	LFPLDCGVPDDL SVADPNIRFLHELPPQSADRAGIKGRVYTNSIYELLEN	250
Human	251	GQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLQAKLFCRTLEDILA	300
			
Boar	251	GQPAGVCVLGYATPLQTLFAMSQDGRAGFSREDRLQAKLFCRTLEDILA	300
Human	301	DAPESQNNCRLLIAYQEPADDSSFSLSQEVLRHLRQEEKEEVTVGSLKTS A	350
		: : : : .	
Boar	301	DAPEAQNNCRLLIVYQEPTEGGSFSLSQEILRHLRQEER-EVTMGSAETSV	349
Human	351	VPSTSTMSQEPPELLISGMEKPLPLRTDFS	379
		: : : . . : :	
Boar	350	VPTSSTLSQEPPELLISGMEQPLPLRSDIF	378

FIGURE 10

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

Human	1	MPHSSLHPSIFCPRGHGAQK--AALVLLSACLVTWGLGEPPEHTLRYLVL	49
		. : . .:. . . . : . : .	
Bat	1	MSHSSLHPSVPRPRGRARRNIAAFVLLIVCLAALWLSGKPSSEYTLRCLVL	50
Human	50	HLASLQLGLLLNVCSLAEELRHIHSRYRGSYWRTVRACLGCPLRGALL	99
		 : : . . : . :	
Bat	51	HLASQQLGLLSNRVCYLAEELSHIHSRYQGNYWRAVRACLSCPIRFVGVVL	100
Human	100	LLSIYFYYSLPNAVGPFFTWMIALLLGLSQALNILLGLKGLAPAEISAVCE	149
		:	
Bat	101	LVSFFFYTSLPNIDDLPLTWMLAHLGLSEALNILLGLRGLTPAEVSTVCE	150
Human	150	KGNFNVAGHLAWSYYIGYLRLLLPQLQARIRTYNQHYNNLLRGAVSQRLY	199
		:.:. 	
Bat	151	QRHFNVAHLAWSYYIGYLRLLLPGLRARIHTYNQLHGNTLQGVGSHRLY	200
Human	200	ILLPLDCGVDPNLSMADPNIRFLDKLPQQTGDRAGIKDRVYSNSIYELLE	249
		. . :	
Bat	201	ILFPLDCGVLDLSDAADPNIRFLRELPRQSSDRAGIKNRVYTNSVYELLE	250
Human	250	NGQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLQAKLFCRTLEDIL	299
		. :	
Bat	251	KGKPVGTCVLEYATPLQTLFAMSQDARAGFSQEDRLQAKLFCRTLADIL	300
Human	300	ADAPESQNNCRLLIAYQEPADDSSFSLSQEVLRHLRQEEKEEVTVGSLKTS	349
		. . : . . : . . : . . .	
Bat	301	ADDPESQKSCRLIVYQEPTEESDFSLSQAILKHLRQEEKEEVTVGTVGTY	350
Human	350	AVPSTSTMSQEPPELLISGMEKPLPLRTDFS	379
		.. : . :	
Bat	351	EAPGSSTLHQEPPELLISGMDQPLPLRTDIF	380

FIGURE 11

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

Human	1	----MPHSSLHPSIPCPRGHGAQKAALVLLSACLVTWGLGEPPEHTLRYL	47
Manatee	1	MVEMPHSSLHPSIPRHRGHGIQKAAFVLLVACLVALWELGEPFGHTLQWL	50
Human	48	VLHLASLQLGLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPLRRGA	97
		..	
Manatee	51	VCQLASLQLGLLKVICSLAEELCHVHSRYQSSYWRAVRACMGCPIRRGA	100
Human	98	LLLLSIYFYSLPNAVGPFTWMLALLGLSQALNILLGLKGLAPAEISAV	147
Manatee	101	LLLLSCYFYFCFPNMADLPLTWTLALLGLLQAMNILLSLQGLTPAEISAI	150
Human	148	CEKGNENVAHGLAWSYYIGYLRILPELQARIRTYNQHYNNLLRGAVSQR	197
		..	
Manatee	151	CEKRNLNVAHGLAWSYYIGYLRILPGLQDRIRTYNLQHNNMLRGTGSQR	200
Human	198	LYILLEPLDCGVDPNLSMADPNIRFLDKLPQQTGDRAGIKDRVYSNSIYEL	247
		: ..	
Manatee	201	LHILFPLDCGVDPNLSVADANIRFLQKLPQQSADCAIKGRVYTNSVYQL	250
Human	248	LENGQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLQAKLFCRTLED	297
		: ..	
Manatee	251	LEHGQPAGICVLEYATPLQTLFAMSQDGRAGFSREDRLQAKLFCRTLED	300
Human	298	ILADAPESQNNCRLIAYQEPADDSSFSLSQEVLRLHLRQEEKEEVTVGSLK	347
Manatee	301	ILADAPEYQNNCR LIVYQESAEGSSFSLSQEILRLHLRQEERE ETVGSGV	350
Human	348	TSAV-----PSTSTMSQEPellisGMEKPLPLRTDFS	379
		..	
Manatee	351	TSVVPSPSPSTSSLSQEPKLLISGMEQPLPLRTDVF	387

FIGURE 12

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

Human	1	MPHSSLHPSIFCPRGHGAQKAALVLLS---ACLVTLWGLGEPPEHTLRYLV	48
GhostShark	1	-----MSDSIPRPRGKVATYVGLILMSGLACLYFML---TPDYHIKFIV	41
Human	49	LHLASLQL-----GLLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPL	93
GhostShark	42	QQVAQ-QLIVSFFALCLLRLCEFVEELGHKQTRVQNSWVRALNASLDWK-	89
Human	94	RRGALLLLSIYFYYSLPNAVGGPFTWMLALLGLSQALNI-----LL	134
GhostShark	90	KYGFCLLISLLFNWVLPYEKHMYSY----AVPTVGQTISLTCFCVLFLKVF	135
Human	135	GLKGLAPAEISAVCEKGNFNVAHGLAWSYYIGYLRLLPELQARIRTYNQ	184
GhostShark	136	QLDVLSPAQISEISETNKCNAVHGLAWSYYLGYLKIVLPKLEEKINQYHR	185
Human	185	HYNNLLRGAVSQRLYIILLPLDCGVDPNLSMADPNIRFLDKLPQQTGDRAG	234
GhostShark	186	EYGNVLQ-QKGKKLYILIPFSCKVLDKLEKVDNIVFYQNLPPELLVDRAG	234
Human	235	IKDRVYSNSIYELL-ENGQRAGTCVLEYATPLQTLFAMSQYSQAGFSRED	283
GhostShark	235	IKRSRYKHSIYLIYDQKKQOPHHCILEYATPLRSLFEMTNDSSAAAFSKEQ	284
Human	284	RLEQAKLFCRTLEDILADAPESQNNCRLLIAYQEPADSSFS---LSQEV	330
GhostShark	285	RLDQAKLFYRTLKSIILNNVPEVTGSYRLIPYDDLEGAELGPHFVSEEIL	334
Human	331	RHLRQEEKEEVTVGS�KTSAVPSTSTMSQEPELLISGMEKPLPLRTDFS	379
GhostShark	335	KHMRQELTEYPVA-----EPSNANETDCMSSEPHLMIS---DDPKPLRSYCP	378

FIGURE 13

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

Human	1	MPHSSLHPSIFCPRGHGAQKAALVLLSACLVTLWGLGEPPENTLRYLVLH	50
Mouse	1	MPYSNLHPAIPRPRGHRSKYVALIFLVASLMILWWAKDFPNHTLKYLAH	50
Human	51	LASLQLGLLLNGVCSLAEELRHIHSRYRGSYWRTVRACLGCPLRGALLL	100
Mouse	51	LASHELGLLLKKNLCCLAEEELCHVQGSRYQGSYWKAVRACLGCPHMCAMIL	100
Human	101	LSIYFYYSLPNAVGPPTWMLALLGLSQALNILLGLKGLAPAEISAVCEK	150
Mouse	101	LSSYFYF-LQNTADIYLSWMFGLLVLYKSLSMILLGLQSLTPAEVSACEE	149
Human	151	GNFNVAHGLAWSYYIGYLRLLLPQLQARIRTYNQHYNNLLRGAVSQRLYI	200
Mouse	150	KKLNVAHGLAWSYYIGYLRLLLPGLQARIRMFNQLHNNMLSGAGSRRLYI	199
Human	201	LLPLDCGVPDNLMSADPNIRFLDKLPQQTGDRAGIKDRVYSNSIYELEN	250
Mouse	200	LEPLDCGVPDNLVVDPNIRFRDMLPQQNIDRAGIKNRVYSNSVYEILEN	249
Human	251	GQRAGTCVLEYATPLQTLFAMSQYSQAGFSREDRLQAKLFCRTLEDILA	300
Mouse	250	GQPAGVCILEYATPLQTLFAMSQDAKAGFSREDRLQAKLFCRTLEEILE	299
Human	301	DAPESQNNCRLLIAYQEPADSSFSLSQEVLRHLRQEEKEEVTVGSLKTS	350
Mouse	300	DVPESRNNCRLLIVYQEPDGNFSFSLSQEVLRHLRQEEKEEVTMNAPMTSV	349
Human	351	VPSTSTMSQEPELLISGMEKPLPLRTDFS	379
Mouse	350	APPFSVLSQEPRLISGMDQPLPLRTDLI	378

FIGURE 14