

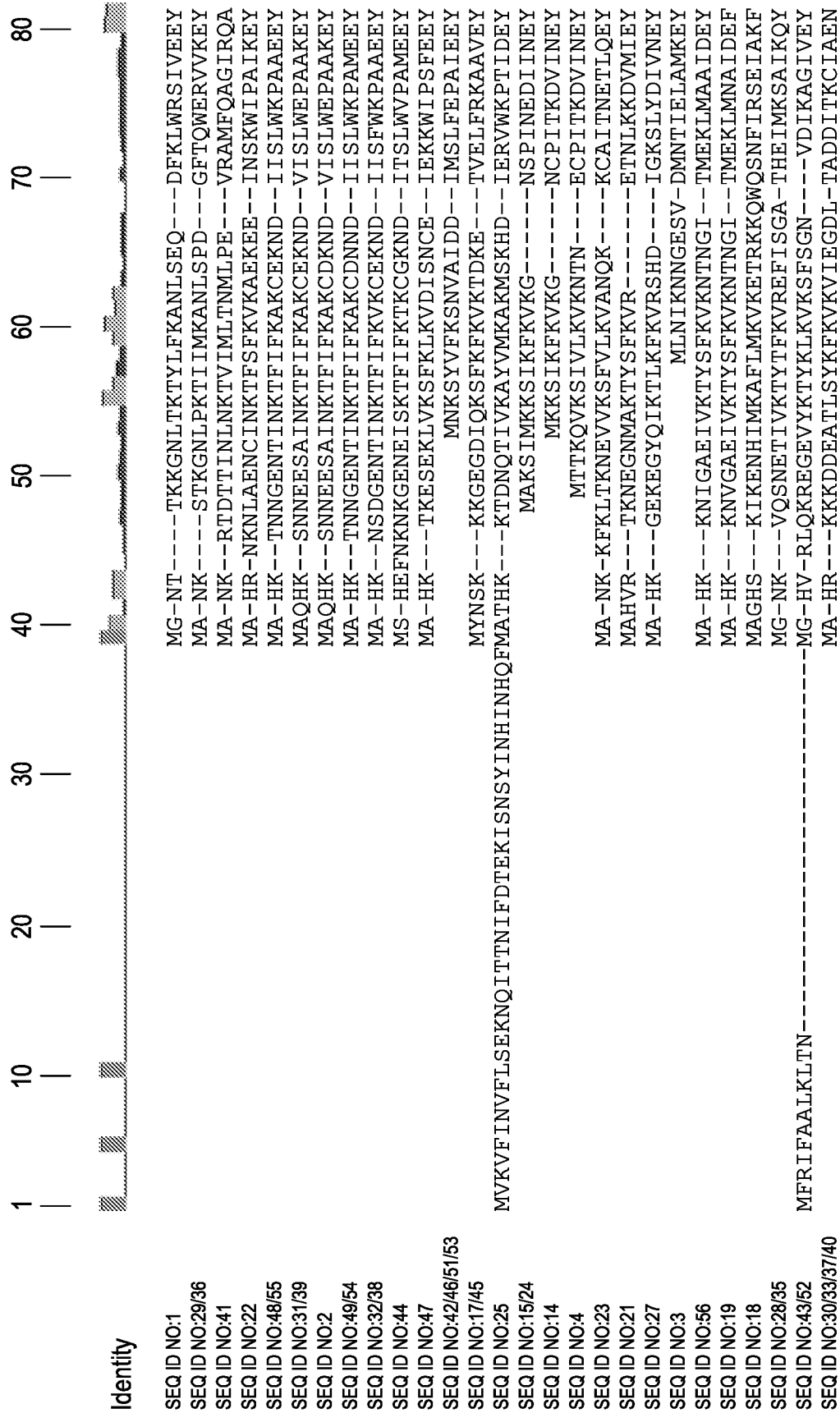


Fig. 1A

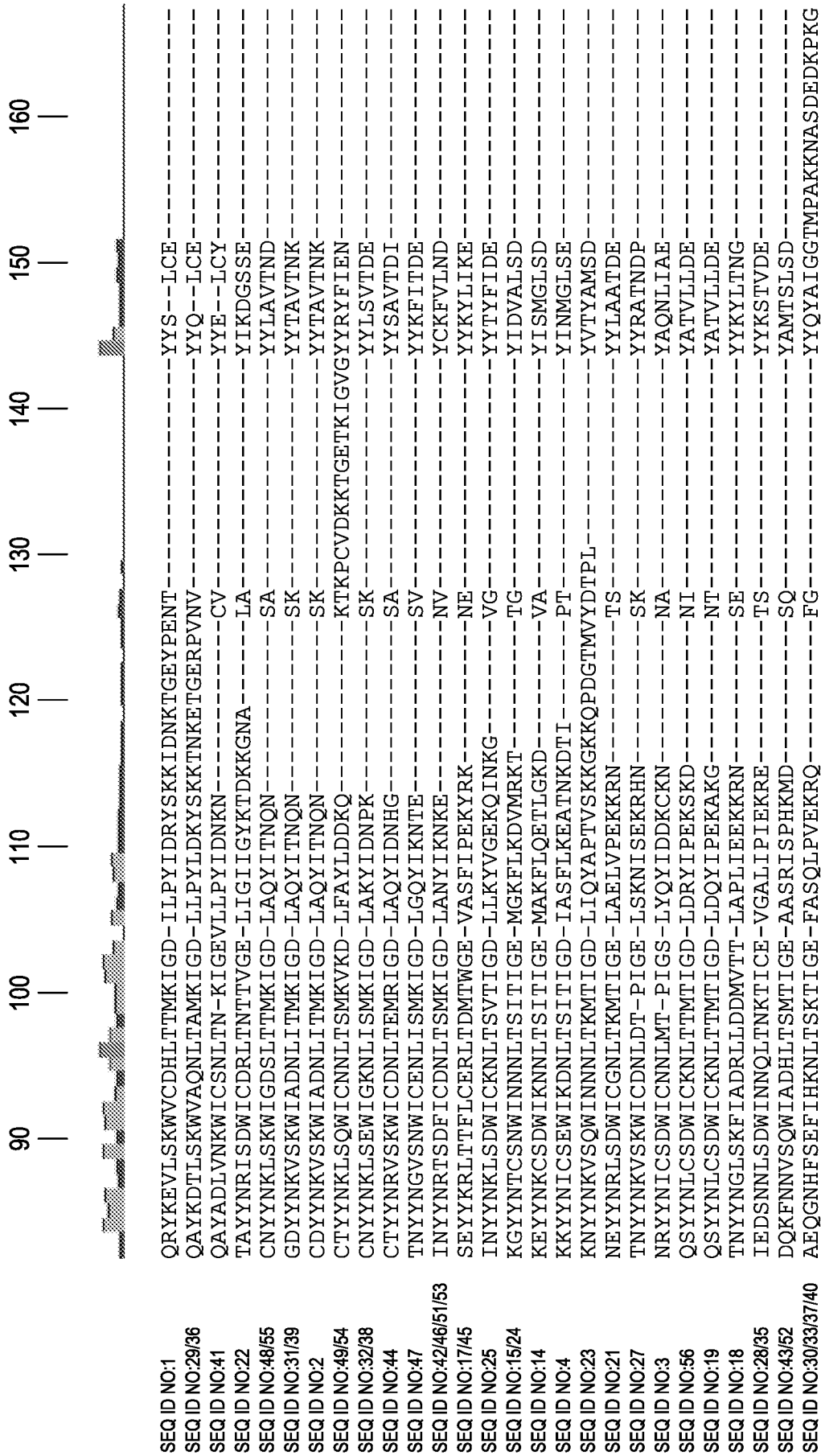


Fig. 1B

Identity	170	180	190	200	210	220	230	240
SEQ ID NO:1	---	EHKDEPLYKIFQ---	F---	---	DSNCRNNALYEVIRKINCD-	LYTG-NILNLGETYYRRNGFVKRVLA	---	---
SEQ ID NO:29/36	---	QHKDEPLYKLT---	Y---	---	DSNRNNAMYEIIRKTNCD-	GYKG-NILGISETHYRRNGFVKNILA	---	---
SEQ ID NO:41	---	KYKEAPLYTIFMKGK-	F---	---	DLNSRNNALYCAVVAQNID-	NYSG-NIFGFSQSDYRRNGYCKVVS	---	---
SEQ ID NO:22	---	KYRNPLPYCMFKN-	F---	---	PATTADNIMYQVIEKLGVD-	KYNG-NSLGLSGTYRRIGYIANVIG	---	---
SEQ ID NO:48/55	---	SKKDLPLYKIFQK-	F---	---	SSQCADNALYSAIKAINPE-	NYNG-NSLEIGETDYRRFGYVQSVIG	---	---
SEQ ID NO:31/39	---	KKKDLPLYRIFQK-	F---	---	SSQCADNALYCAIKSINPE-	NYKG-NSLIGESDYRRFGYIQSVVS	---	---
SEQ ID NO:2	---	KKKDLPLYRIFQK-	F---	---	SSQCADNALYCAIKSINPE-	NYKG-NSLIGESDYRRFGYIQSVVS	---	---
SEQ ID NO:49/54	---	NKEDMPLYWLTKN-	C---	---	SSSHADNLLFEFVRKVNHE-	EYNG-NSLGMGETDYRRFGYFQNVIS	---	---
SEQ ID NO:32/38	---	NKKDLPLYKIFQK-	F---	---	SSIDADNALYCAIDKLNPE-	GYNG-NSLGVKSDYRRNGYVSVVIG	---	---
SEQ ID NO:44	---	TKKDLPLYKIFKKG-	F---	---	SGLCADNALYCAIAKLNPE-	GYDG-NMFGLSETYYRRQGYIANVFG	---	---
SEQ ID NO:47	---	SISNPLPYKIFTLK-	---	---	QTQNVDNALFCAIKEINPE-	KYNG-NSIGLGETDYRRFGYVQCVIS	---	---
SEQ ID NO:42/46/51/53	---	DIKDLPLYKIFSLN-	LNSS-	---	QKKNADNALYEAIKVLNAD-	GYKGKNI LGLD TYFRNGYVKNVIS	---	---
SEQ ID NO:17/45	---	ENKDLPLYKMFTA-	A---	---	SSMFIHDSIERIVEALNPE-	GNTG-NILGFCCKSSYVRGGYLNKVVVS	---	---
SEQ ID NO:25	---	OKTDLPLYTLFTDC-	---	---	PKTHADNLLFEAVRKINPE-	NYNG-NLLSLFETGYRRNGYFDNVIS	---	---
SEQ ID NO:15/24	---	EWKDKPMYYLFTKK-	Y---	---	NPKHANNLLYYFIKEKKLD-	KFNG-NILNVPEYYRKEGYFKLVAG	---	---
SEQ ID NO:14	---	EWKDKPLYHLFTKK-	Y---	---	HTNNADNLLYYIYIKEKNLD-	GYKG-NTLNIGNTFRQFGYFKLVVS	---	---
SEQ ID NO:4	---	EWKYKPIYHLFTDD-	Y---	---	HEKSANNLLYAYFKEKNLD-	CYNG-NILNLSETYYRRNGYFKSVVG	---	---
SEQ ID NO:23	---	EWKNKPLYIYIFKKE-	Y---	---	NTNNANNLLYEAIRNLNVD-	EYDG-NQLNFNSTYYRTQGYVNRVFS	---	---
SEQ ID NO:21	---	KWINEPMYKLTDE-	YTKKSSFTDPLVA-	---	NSNCDNLILTATDVLNPE-	GYEG-NLLSLCKSTYRTFGYAKQIIS	---	---
SEQ ID NO:27	---	NWKNEPMWKIFTKK-	FSNGETFSEQGKNDKLANLS	CNDNLSYSIIDYNID-GYTG-NILGLTDTSYRLNGYISNCIS	---	---	---	---
SEQ ID NO:3	---	EWKDKPLYMFKG-	Y---	---	NANNCANAICCAIRSQVPE-	VNKAENILNLSYTYFFRNGVIKSVIS	---	---
SEQ ID NO:56	---	VWKNQPLYKIFGKK-	Y---	---	SANNRNNALYCALSSV-	ID-MNKE-NVLGFSKTHYVRNGYILNVIS	---	---
SEQ ID NO:19	---	AWKNQPLYKIFGKK-	Y---	---	SSNNRNNALYCALSSV-	ID-MTKE-NVLGFSKTHYIRNDYILNVIS	---	---
SEQ ID NO:18	---	DWDGKPLYIFKEG-	F---	---	NSTNADNILLANSILVRVYCEQNYTG-	NGFGLSYSYVVVIGFAKEVIA	---	---
SEQ ID NO:28/35	---	LWANKPCFKMTND-	FTKEENFATR-	---	NIGNGKNCKNIIITSAYKSTVNP-	SFR--NVLDLTKVKYFSDGYGANVCS	---	---
SEQ ID NO:43/52	---	EWKDQPLYKIFTRG-	F---	---	GGMNADNLIIECTKTEENC-	KYDKEKSLGFSSEVFRFTFGFAANASS	---	---
SEQ ID NO:30/33/37/40	---	ELIDWSKKPFYVLFSGK-	Y---	---	SATHAVNLI FNVYLNSEEGKAFSAKNSMNLKSQFAYS	SGFVQIVCA	---	---

Fig. 1C

SEQ ID NO:1	NYATKISG-MKPS-VRKRKVTSDS--TEEEIRNQVVYEIFN--NNIKNEKDFKGVLEAESKCKTN--EAYVERIRLLYDFYIK--	250
SEQ ID NO:29/36	NYTTKIST-LELS-ERKRKIDSDS--PEDLIRSQVVYEMQK--NNIKDAKGFKSII EYLKSKKEVN--IQYLERLOILYEYFKN--	260
SEQ ID NO:41	NYATKMSS-LKPS-IKKVTINEES--TEETIQSQVIYEMFTNGRQWGKPEYFAEHLKYLEMKDNVS--DKLMFRMKTLC EYYQT--	270
SEQ ID NO:22	NYRTKVRG-MKAS-VKYRNFDPNDV--TEDVLENQTI FEINK--NGFECKGDFEKHIEYLNRELTDRLNKLILRMECLYNYVE--	280
SEQ ID NO:48/55	NFRTKMSS-LKVS-VKYKKFDVNDV--DEETLKTQTIYDVVK--YGI ESIKDFNEFIEVLKREETPQLNEKITRLECLCGYYSK--	290
SEQ ID NO:31/39	NFRTKMSS-LKVS-VKYKKFDVSNV--DEETLKIQT IYDVVK--YGIETAKEFEKELIETLKTTRVETPQLNDTIARLKCICDYYSK--	300
SEQ ID NO:2	NFRTKMSS-LKAT-VKWKKKFDVNNV--DEETLKIQT IYDVVK--YGIETAKEFEKELIETLKTTRVETPQLNDTIARLKCICDYYSK--	310
SEQ ID NO:49/54	NFRTKMSS-LKAT-TKWKKKFDVNDV--DEETLKNQTIYDVVK--YGI ESVNDFNERIDILKIREETEQTQDKIARLECLCKYYKE--	320
SEQ ID NO:32/38	NFRTKMVS-LKAN-VRWKKIDIGNV--DEETLRRQTI CDVEK--YRIESEKDFRDLIDILKAREETPRLKEKISRLELLYDYYSK--	330
SEQ ID NO:44	NYRTKMNAGLKVGCAKWKKFDNDV--DDEILMEQVI DVVVK--YDIDSKNEFKEYIEVLKCREENPKLLETIERLECLYGYYSQ--	
SEQ ID NO:47	NYRTKIGT-MKAS-IKYKTLPENQ--SYDVIFEQTM YEMID--KSLEKKEDWENIISNYKAKQ TEN--TSKINRMETLYSFFIE--	
SEQ ID NO:42/46/51/53	NYRTKFVT-LKPN-VKYSKIDINSV--TEQLIKTQTI FEVVN--KKIESETDFENLITYFKNRETPN--DEKIKRLELLFDY YTK--	
SEQ ID NO:17/45	NIRTKFAT-LKTG-IKYKKFNPAED--DEETILGQTV FEMEK--RGLEFKCDFEKTIKYLNKKGKTQ--EAE RLQCLMEYFST--	
SEQ ID NO:25	NYRTKMTT-LKIN-PKYKRFSSENMP TDEVLLLEQTVYEVTK--NDFKNDDWKKSIDYMKQKSEPN--TALIFRME TLFDYWKD--	
SEQ ID NO:15/24	NYRTKINT-LNFK-IKSKKVDANS--LSEDIEMQTI YEIVK--RGLNKKSDWDSYISYIECVQNP N--IDNINRYKLLRDYFCE--	
SEQ ID NO:14	NYRTKIRT-LNCE-IKRKKIDADS--TSEDIEMQTM YEIIK--HNLNKKTDWDEFISIYIENVENPN--IDNINRYKLLRKCFCE--	
SEQ ID NO:4	NYRTKIRT-LNYK-IKRKNVDENS--TNEDIELQVM YEIAK--RKLNIKKDWENYISYIENVENIN--IKNIDRYNLLYKH FCE--	
SEQ ID NO:23	NYRTKINT-LDIK-IKSKKVDENS--DVE TLEPQTMYEINK--LNLKTNKDWEERLQYLTMQENPN--QNTIDRTKILFN YFIN--	
SEQ ID NO:21	NMKTKIGA-LKPN-VKRRVLGENP--TYDEKMIQV L YEMYN--NGIADVTGFNDRIKYLKKQETPN--EKLISRMKMLR DFFKE--	
SEQ ID NO:27	NYTKTIRT-AKPK-VRSTAITHS--TVEEKTNN TIYEMVR--KGFMSPNDFKNQIKYLTEKENPN--DKLIDRLSILHSFYTE--	
SEQ ID NO:3	NYASKMRI-LSDKQIKYCI VSENT--PDKILIEQ CILELKR--RHEDLKDWEENLKYLILKGN--ESAITRFTILKDFYSK--	
SEQ ID NO:56	NYASKLSK-LNTG-VKSRAIKETS--DEATIIEQVI YEMEH--NKWESIEDWKQIEYLSKTDYN--PTYMERMKTLSAYYSE--	
SEQ ID NO:19	NYASKLSK-LNTG-VKSRAIKETS--DEATIIEQVI YEMEH--NKWESIEDWKQIEYLSKTDYN--PTYMERMKTLSAYYST--	
SEQ ID NO:18	NYRSSFQK-PKVK-IKKKKLSENP--TEDELI EQCIYTIYEFNEKKDQKWKDEIKFLKERGESK--ETRLKRIQTLFEFYKDKS	
SEQ ID NO:28/35	NYKTKLRT-LKPAKIKLVSSLSDC--DDNTLT EQVIREKQK--YGYSTPKDFEKRIEYLNKSEQNSKI IERLQKLYEFYDN--	
SEQ ID NO:43/52	DMKSRMTQ-AKVK-IGRKNIDE DS--ADDEKCLQAIYEIQK--NELLTDDNWKDRIGYLEMKG DQ--ERELERTTILYDY YRA--	
SEQ ID NO:30/33/37/40	NYASMLAN-ARPDKIKFEEITEAT--DDGT KKMQVVREMAE--RYLMKPKNFASRIEYLEANNTKGKFDKTIQRLRL LQPF FEK--	

Fig. 1D

Identity	340	350	360	370	380	390	400	410
SEQ ID NO:1	HTDEIKEYVEYICVEQLKEFCGVKVNRSKSSMNINIQNF	-----SITRVDGKCT	-----SITRVDGKCT	-----SITRVDGKCT	-----SITRVDGKCT	-----SITRVDGKCT	-----SITRVDGKCT	-----SITRVDGKCT
SEQ ID NO:29/36	HENEIKEYITLAAVEQLKSFEGVVRVNEKSSMNEIQGF	-----SITRVDGACT	-----SITRVDGACT	-----SITRVDGACT	-----SITRVDGACT	-----SITRVDGACT	-----SITRVDGACT	-----SITRVDGACT
SEQ ID NO:41	HTDLIDTMAMNAGVEALKQFEGGLKLNDRDKFSMTITTNST	SPYTLTRVAGTCA	-----YNLHPCRRK	SYDRLWGNR	-----YNLHPCRRK	SYDRLWGNR	-----YNLHPCRRK	SYDRLWGNR
SEQ ID NO:22	HEDAVKAKMENYAIESFKTFGGCHRN-SNRSMSIQFTNN	SPLKIKKV-GKTS	-----FDLYMPINGE	VACLQLMGNK	-----FDLYMPINGE	VACLQLMGNK	-----FDLYMPINGE	VACLQLMGNK
SEQ ID NO:48/55	NEENIKNEIETMAISDLQKFGGCQRK-SLNTLTTHKQNS	-----LMEKV-GNTS	-----FTLQLSFNKK	PYTNLLIGNR	-----FTLQLSFNKK	PYTNLLIGNR	-----FTLQLSFNKK	PYTNLLIGNR
SEQ ID NO:31/39	NEKAINNEIETMAIADLQKFGGCQRK-SLNAFTTHKQDS	-----LMEKV-GNTS	-----FRLQLSFRKK	TYVINLLIGNR	-----FRLQLSFRKK	TYVINLLIGNR	-----FRLQLSFRKK	TYVINLLIGNR
SEQ ID NO:2	NEKAINNEIETMAIADLQKFGGCQRK-SLNAFTTHKQDS	-----LMEKV-GNTS	-----FRLQLSFRKK	TYVINLLIGNR	-----FRLQLSFRKK	TYVINLLIGNR	-----FRLQLSFRKK	TYVINLLIGNR
SEQ ID NO:49/54	HEEDIKNEIATMAIADLQKFGGCQRK-SMNTLTTHKQDS	-----PMEKV-GNTS	-----FNLRLTFNKK	PYTNLLIGNR	-----FNLRLTFNKK	PYTNLLIGNR	-----FNLRLTFNKK	PYTNLLIGNR
SEQ ID NO:32/38	NTKTIKSEMENMAISDLQKFGGCVRK-SLNTLTTHKQDS	-----KIEKE-GNTS	-----FRLHMFVNKK	PYTNLLIGNR	-----FRLHMFVNKK	PYTNLLIGNR	-----FRLHMFVNKK	PYTNLLIGNR
SEQ ID NO:44	HEEDIKKIEELVVEELKTFGGCVRK-SMTSCTITVQDF	-----VMERI-GNTG	-----YRINLTFNKK	PYVLGLLIGNR	-----YRINLTFNKK	PYVLGLLIGNR	-----YRINLTFNKK	PYVLGLLIGNR
SEQ ID NO:47	HSEEIIEKSNLVAIEQLALFNGCVRK-SLSTMTIHSQHS	-----KLQKN-GLTS	-----FV--FCINQK	IGSINLFGNR	-----FV--FCINQK	IGSINLFGNR	-----FV--FCINQK	IGSINLFGNR
SEQ ID NO:42/46/51/53	HKNEINEEIEKHAVESLKSFGNCRNRNGNRKTMVQMOKM	-----LLKKH-GLTS	-----YILHLVLDKK	PYDINLMGNR	-----YILHLVLDKK	PYDINLMGNR	-----YILHLVLDKK	PYDINLMGNR
SEQ ID NO:17/45	NTDKINEYRESLVLDLDIRKFGGCNRS-KSNSFSVTLEKA	-----DI-KEDGLTG	-----YTMK--VSKK	LKEIHLGLHR	-----YTMK--VSKK	LKEIHLGLHR	-----YTMK--VSKK	LKEIHLGLHR
SEQ ID NO:25	HKQDVEQYINQKRVECLKDFGGCKRRADGLSMVILLNKK	-----LTKIEADGLTS	-----YKLTNLFGG	KYMINIFGHR	-----YKLTNLFGG	KYMINIFGHR	-----YKLTNLFGG	KYMINIFGHR
SEQ ID NO:15/24	NEDVIKNKIEILSIEQIEFGGCIIMKPHINSMTFGIQKF	-----KIEEIEENSLG	-----FTFNLPNKN	NYKIELWGNR	-----FTFNLPNKN	NYKIELWGNR	-----FTFNLPNKN	NYKIELWGNR
SEQ ID NO:14	NENMIKNKLELLSIEQLKNFGGCIIMKQHINSMTLIIQHF	-----KIEEKENSLG	-----FILNLPNKK	QYQIELWGNR	-----FILNLPNKK	QYQIELWGNR	-----FILNLPNKK	QYQIELWGNR
SEQ ID NO:4	NESTINCKMELLSVEQLKEFGGCVMKQHINSMTINIQDF	-----KIEKENSLG	-----FILNLPNKK	KYQIELWGNR	-----FILNLPNKK	KYQIELWGNR	-----FILNLPNKK	KYQIELWGNR
SEQ ID NO:23	NNDTIFQKMEELS IKQLTEFGGCKMKDNTTSMNTINIQDF	-----KIKRKENSIG	-----YIMTIPFNKK	NVDVELYGHK	-----YIMTIPFNKK	NVDVELYGHK	-----YIMTIPFNKK	NVDVELYGHK
SEQ ID NO:21	NRNDIMDKCRIMAVEQLVSFGGCKRNINGASMTLRNQC	-----SVKRKDCGQ	-----YVVAIPVGTKNS	IVFDLYGR	-----YVVAIPVGTKNS	IVFDLYGR	-----YVVAIPVGTKNS	IVFDLYGR
SEQ ID NO:27	NEEDVNNAFSRMSVEMLNKNNNGCTRNGDKKTLNISSIDY	-----KVTRKEGCDG	-----YILSFGSRNQ	KYNIDLWGR	-----YILSFGSRNQ	KYNIDLWGR	-----YILSFGSRNQ	KYNIDLWGR
SEQ ID NO:3	NIERVKEEREIMAI AELKDFGGCRRKDDKLSMCIQSAGNSKDI	KVSRVKTTHNYTEL	VDDYTENFNKFS	ALDFNVGMGR	-----YILSFGSRNQ	KYNIDLWGR	-----YILSFGSRNQ	KYNIDLWGR
SEQ ID NO:56	HKSEIDAKMQEMAVENLVKFGGCCRNNSSKSMFIMGSNH	TNYTISYI-GENC	-----FNINF--AN	ILNFDVYGR	-----FNINF--AN	ILNFDVYGR	-----FNINF--AN	ILNFDVYGR
SEQ ID NO:19	HKSEVDAKMQEMAVENLVKFGGCCRNNSSKSMFIMGSNT	TNYTISYI-GGNS	-----FNINF--AN	ILNFDVYGR	-----FNINF--AN	ILNFDVYGR	-----FNINF--AN	ILNFDVYGR
SEQ ID NO:18	HKELVDERVANLVVDNIKEFGGCKRDIIDCPMSGIQQIHN	-----FDISINEKRN	-----YTCFPGNKKNL	TKLEVFNGR	-----YTCFPGNKKNL	TKLEVFNGR	-----YTCFPGNKKNL	TKLEVFNGR
SEQ ID NO:28/35	NTKLVEEKELELSVKSLVEFGGCCRGEKTMNLDPDIGY	-----EIQRKDDKYG	-----YIFTLCKSKRK	IIIDVWGSK	-----YIFTLCKSKRK	IIIDVWGSK	-----YIFTLCKSKRK	IIIDVWGSK
SEQ ID NO:43/52	NRTTVLDKLDNLKVEITLSKFRGSKRKSDRKILTLNGISY	-----DIKRKEGCG	-----FELKFSVDKN	HMEFDLLGHR	-----FELKFSVDKN	HMEFDLLGHR	-----FELKFSVDKN	HMEFDLLGHR
SEQ ID NO:30/33/37/40	NEEGITELYDLSVKALEHSGQCTYKGGRTISILEIGDI	-----RISRKENAKG	-----YLLTIPINRK	SVVFDLYGRK	-----YLLTIPINRK	SVVFDLYGRK	-----YLLTIPINRK	SVVFDLYGRK

Fig. 1E

420 | 430 | 440 | 450 | 460 | 470 | 480 | 490 | 500 |



SEQ ID NO:1 QVVLN-VDGTVP--D-----IIDII-NRHGESIDIIFKNGDIYFSFVSEDEKKDDF-EI--GNVVGVDVNTKHMIIQTNI---
 SEQ ID NO:29/36 QVVVN-KDGTVP--D-----ILDLT-NQHGSTINITIKNGEIIYFAFTVTSDFVKPEH-QI--KNVVGVDVNTKHMIIQMSNI---
 SEQ ID NO:41 QTVRW-VNGELV--D-----IADII-NQHGQTIIFTIKNGNVYVHIPYGLNFEKTEH-EI--KNVVGVDVNTKHMIIQTSI---
 SEQ ID NO:22 QAVCVGENGERC--D-----LVDIV-NSHKTITIKIINGEMYVDIPCVVNFEEKDE-DT--IKSVGVDVNIKHEIIATSV---
 SEQ ID NO:48/55 QVVKF-VDGKRV--D-----LIDIT-EKHGDWVTFNKNDLFLVHLTSPIDFEKEVC-EI--KNAVGVVDVNIKHMIIATSI---
 SEQ ID NO:31/39 QVVNF-VNGKRV--D-----LIDIA-ENHGDWVTFNKNGELFLHITSPIVFDKVR-DI--RNVVGIDVNIKHSMLATSI---
 SEQ ID NO:2 QVVNF-VNGKRV--D-----LIDIA-ENHGDWVTFNKNGELFLVHLTSPVFDKVR-DI--RNVVGIDVNIKHSMLATSI---
 SEQ ID NO:49/54 QVVKF-VGKKRI--D-----LINIT-ENHGDWVTFNKNNELFVHMTSPVDFEKEVC-EI--KNAVGVVDVNIKHMIIATSI---
 SEQ ID NO:32/38 QVVKY-IDGKRV--D-----IVNIV-EKHGDWVTFNKNGELFVHLTKCVFESKGQK-EI--KKAAGVDVNIKHAMLAASI---
 SEQ ID NO:44 QVVRY-VDGDRV--E-----LVDIV-NNHGNQITFNKNGELFVHLTSGVDFSKES-SM--ENIVGVVDVNIKHSMLASSI---
 SEQ ID NO:47 QLVSVDENGNRN--D-----IIDIC-NNYGDFTITQIKNGKMFIIITAKVDFDKENI-EI--KNVVGADVNIKHMIIASSI---
 SEQ ID NO:42/46/51/53 QTVKVDNNGNRV--D-----LVDIS-SKHGYDLTFEVKGKTLFTFSSEKDFSKKEQ-EI--KNILGIDINTKHSMLATSI---
 SEQ ID NO:17/45 RVVEV-VNGRRV--N-----LVDICGDKSGDSKVFFVDGDNLYVCIAPVKFSKNGM-EA--KKYIGVDMNMKHSIIISVSD---
 SEQ ID NO:25 ALVSV-CNGERAENE-----NIDIC-NKHGERFTFKIENGNLFVALTADYNYEKQPN-LP--KNIVGVVDVNIKHSMLNSSI---
 SEQ ID NO:15/24 QLKKG-NKESNVNS-----LDDFI-NTYQQNVVFTIKRKKLYIVFSYDYEFERGEC-NF--EKSVGLDVNFKHSILFVTSE---
 SEQ ID NO:14 QVNLKG-TKER-----DAFL-NTYGENIVFIINDELIVVFSYDYEFERGEC-NF--VKTVGLDVNFKHAFFVTSE---
 SEQ ID NO:4 QIKKG-NKDNKY--T-----LVDFI-NTYQQNIIFTIKNNKIYVFSYDYEFERGEC-NF--DKIVGIDVNFKHALFVASERDK
 SEQ ID NO:23 QTIKG-HKNSYT--E-----IVDIV-NKHGNTITFKIKNNQLFAIITSDTEVTKEP-QY--EKIVGVVDVNIKHTLMVTSE---
 SEQ ID NO:21 DVIK--DGV-----LVDVC-GKHTDTITIKSVNGELFLDMPVAINFEKKS-GC--TKTVGIDVNTKHMIIQTSV---
 SEQ ID NO:27 DTIS--NGK-----LIDL--SEHGEPLTITSENGDYVVCMTVDVPFEKKS-TG--EKVASVDVNTKHTMLSTDV---
 SEQ ID NO:3 DVVKTINKTKEDDSNTWGGTELVDII--NNHGCSTLTKLVDDKLYVDIPIDTEHINKTT-DT--KKSVDGIDVNLKHSILNTDI---
 SEQ ID NO:56 DVVK--NGE-----V-----LVDIM-ANHGDSIVLKI VNGELYADVPVCSVTLNKVES-NF--DKVVGIDVNMKHMIIISTSV---
 SEQ ID NO:19 DVVK--NGE-----V-----LVDIM-ANHGDSIVLKI VNGELYADVPVCSVTLNKVES-NF--DKVVGIDVNMKHMIIISTSV---
 SEQ ID NO:18 MVLL--NGE-----E-----IVDLP-NTHGEKLTLDI RGNAIYAAITAQVPFEKHMP-DG--NKTVGIDVNLKHSVFATSI---
 SEQ ID NO:28/35 ATIDS--NGN-----D-----KVDII-NTHGKSINFKI INNEMYDITVDVPFAKRKL-GI--KVVVGIDVNTKHMIIATNI---
 SEQ ID NO:43/52 ALIK--NGE-----M-----LVDIE-NCHGSQLSLEIDGDDMYAIISMRTECEKNES-KL--EKIIGADVNIKHMFLMTSE---
 SEQ ID NO:30/33/37/40 DTIGG--DGR-----D-----LIDIM-NTHGSSLSQFTADGNDIYLTITATKNFIKEKP-TFNEDTVLGGDVNIKHSYTVFST---

Fig. 1F

Identity	510	520	530	540	550	560	570	580
SEQ ID NO:1	---VDNGNV	---VDNGNV	---VDNGNV	---VDNGNV	---VDNGNV	---VDNGNV	---VDNGNV	---VDNGNV
SEQ ID NO:29/36	---TDNGNV	---TDNGNV	---TDNGNV	---TDNGNV	---TDNGNV	---TDNGNV	---TDNGNV	---TDNGNV
SEQ ID NO:41	---KDNWVK	---KDNWVK	---KDNWVK	---KDNWVK	---KDNWVK	---KDNWVK	---KDNWVK	---KDNWVK
SEQ ID NO:22	---IDNGQL	---IDNGQL	---IDNGQL	---IDNGQL	---IDNGQL	---IDNGQL	---IDNGQL	---IDNGQL
SEQ ID NO:48/55	---KDDGNV	---KDDGNV	---KDDGNV	---KDDGNV	---KDDGNV	---KDDGNV	---KDDGNV	---KDDGNV
SEQ ID NO:31/39	---KDDGNV	---KDDGNV	---KDDGNV	---KDDGNV	---KDDGNV	---KDDGNV	---KDDGNV	---KDDGNV
SEQ ID NO:2	---KDVGNV	---KDVGNV	---KDVGNV	---KDVGNV	---KDVGNV	---KDVGNV	---KDVGNV	---KDVGNV
SEQ ID NO:49/54	---VDDGNV	---VDDGNV	---VDDGNV	---VDDGNV	---VDDGNV	---VDDGNV	---VDDGNV	---VDDGNV
SEQ ID NO:32/38	---VDDGQL	---VDDGQL	---VDDGQL	---VDDGQL	---VDDGQL	---VDDGQL	---VDDGQL	---VDDGQL
SEQ ID NO:44	---VDDGNV	---VDDGNV	---VDDGNV	---VDDGNV	---VDDGNV	---VDDGNV	---VDDGNV	---VDDGNV
SEQ ID NO:47	---IDNGNV	---IDNGNV	---IDNGNV	---IDNGNV	---IDNGNV	---IDNGNV	---IDNGNV	---IDNGNV
SEQ ID NO:42/46/51/53	---TDNGKV	---TDNGKV	---TDNGKV	---TDNGKV	---TDNGKV	---TDNGKV	---TDNGKV	---TDNGKV
SEQ ID NO:17/45	---EDKGKV	---EDKGKV	---EDKGKV	---EDKGKV	---EDKGKV	---EDKGKV	---EDKGKV	---EDKGKV
SEQ ID NO:25	---IDNNQF	---IDNNQF	---IDNNQF	---IDNNQF	---IDNNQF	---IDNNQF	---IDNNQF	---IDNNQF
SEQ ID NO:15/24	---KDNCHL	---KDNCHL	---KDNCHL	---KDNCHL	---KDNCHL	---KDNCHL	---KDNCHL	---KDNCHL
SEQ ID NO:14	---NPLQDN	---NPLQDN	---NPLQDN	---NPLQDN	---NPLQDN	---NPLQDN	---NPLQDN	---NPLQDN
SEQ ID NO:4	---KDNGLK	---KDNGLK	---KDNGLK	---KDNGLK	---KDNGLK	---KDNGLK	---KDNGLK	---KDNGLK
SEQ ID NO:23	---KDNKFD	---KDNKFD	---KDNKFD	---KDNKFD	---KDNKFD	---KDNKFD	---KDNKFD	---KDNKFD
SEQ ID NO:21	---IDDGTL	---IDDGTL	---IDDGTL	---IDDGTL	---IDDGTL	---IDDGTL	---IDDGTL	---IDDGTL
SEQ ID NO:27	---LDNGGI	---LDNGGI	---LDNGGI	---LDNGGI	---LDNGGI	---LDNGGI	---LDNGGI	---LDNGGI
SEQ ID NO:3	---TDNGSL	---TDNGSL	---TDNGSL	---TDNGSL	---TDNGSL	---TDNGSL	---TDNGSL	---TDNGSL
SEQ ID NO:56	---TDNGSS	---TDNGSS	---TDNGSS	---TDNGSS	---TDNGSS	---TDNGSS	---TDNGSS	---TDNGSS
SEQ ID NO:19	---VDNGKL	---VDNGKL	---VDNGKL	---VDNGKL	---VDNGKL	---VDNGKL	---VDNGKL	---VDNGKL
SEQ ID NO:18	---KVTDIS	---KVTDIS	---KVTDIS	---KVTDIS	---KVTDIS	---KVTDIS	---KVTDIS	---KVTDIS
SEQ ID NO:28/35	---KDDGNT	---KDDGNT	---KDDGNT	---KDDGNT	---KDDGNT	---KDDGNT	---KDDGNT	---KDDGNT
SEQ ID NO:43/52	---SPKDI	---SPKDI	---SPKDI	---SPKDI	---SPKDI	---SPKDI	---SPKDI	---SPKDI
SEQ ID NO:30/33/37/40	---	---	---	---	---	---	---	---

Fig. 1G

SEQ ID NO:1	-----EKLRLAEKILTSVLDRSFEKY-----NGI-DCNIANYISNVRMLRSKCKSYFTLKMKYKELQHKYDNEM-GYVDT	590
SEQ ID NO:29/36	-----AEMRQIEKVFSDILDEQYKKY-----KDI-DTSIANYISYVRKLRSQCCAYFKLKMKYKELQRFQDKEQ-DYKDL	600
SEQ ID NO:41	-----EADNNAEKCEKVLNNLVKQY-----EGD-DVHVNYIHNKKLRALCKASFVLKYYKAAELQKAFDDAQ-GYNDQ	610
SEQ ID NO:22	H-----IKLREERERILTGILKRIGQEH-----SDV---DVRNYVRFVNMLRSKESYFVLKNKYEEKMQEFDSTQ-NYVDV	620
SEQ ID NO:48/55	-----NKFIRRELAMQKVFNDITKTN-----KDQ---NIVDYVNVYVVKMLRAKYKAYFILKEKYEEKQKEYDIKM-GFTDV	630
SEQ ID NO:31/39	-----NKLIRRELAMQKVFERITKTN-----KDQ---NIVDYVNVYVVKMMRAKCKASYILKEKYDEKQKEYYVVKM-GFTDE	640
SEQ ID NO:2	-----NKLIRRELAMQKVFERITKTN-----KDQ---NIVDYVNVYVVKMMRAKCKASYILKEKYDEKQKEYYVVKM-GFTDE	650
SEQ ID NO:49/54	-----NQLIRREIAMQKVFNDITKTN-----NDK---NIVDYVNVYVVKMLRAKYKAYFILKEKYEEKQKEYYDDMM-GFNDE	660
SEQ ID NO:32/38	-----NQLIRRERAMEKVFDRIVKTT-----SNK---HIIDYVNVYVVKMLRAKYKAYFILKEKYHEKQREYDLSM-GFTDE	
SEQ ID NO:44	-----SRLARRERVVGKVFDRIVKTN-----GDV---HVVNYIHAVKMLRAKCKAYFVLKQKYEEKQKEYDDAH-GYTDE	
SEQ ID NO:47	-----DRFLRREKSIENVLNRLSKQY-----RYK-DCKIATYIDYTKIMRDSYKSYFILKEKYEEKQKEYDISM-GYVDE	
SEQ ID NO:42/46/51/53	-----ETLLKREIAISQTLNLAKKY-----RDK-NCKIASYIDYTKMLRSYKSYFILKQKYEEKNHEYDDKM-GFSDI	
SEQ ID NO:17/45	LKVQAEKKLIEREAAYERVLDKLRKGT-----SDT---DTENYINYNKILRAKIKSAYILKDKYYEMLGKYDSERAGSGDL	
SEQ ID NO:25	-----SILCKRELAMQDVFEKLEKRY-----KD--DHKIKFYLGSTQKLRQYISYFKIKEAYNRKQOEYDLAH-GKTDN	
SEQ ID NO:15/24	-----SKISEKEKVLKILYSLQKKL-----KNEKRTKEYIYVSCVNKLRAKYVSFYFKLQKYNKQKEYDIEM-GFVDD	
SEQ ID NO:14	-----SKFCKEQVLSKLLYALQKQL-----KDNERTKEYIYVSCVNKLRAKYVSFYFILKEKYEEKQKEYDIEM-GFVDD	
SEQ ID NO:4	-----GKSNDKEQVLSKLLYSLQIKL-----KNEKIQEYIYVSCVNKLRAKYVSFYFILKEKYEEKQKEYDIEM-GFTDD	
SEQ ID NO:23	-----DENTKKELAFSNVLYDIQKQL-----KNTNNILQYNIACVNKLRAKYKAYFVLKMSYMKQKIYDTNM-GFFDI	
SEQ ID NO:21	-----QKYKLAEDRITELLKQWGINF-----DAGCMSQERIYVQCVKRLRGNLKRLLYLQNKYYEAAQOEYDKKM-GFDDK	
SEQ ID NO:27	-----AYEKKVEDRITHSMEKMLKTE-----TDE---RNKMYLGSVIMRALLKVYISTKNRYHKEQOQSYDESM-GFTDT	
SEQ ID NO:3	-----DNTNKMIEAFSSVLNMIRKELEIKLLHSSKEESPLIRKQIYINCICLRNELKQYAIKHHRYKKQOEYDTLC-----	
SEQ ID NO:56	-----KVKMEKAYSEILEALKWKF-----FANGDNKNRIYVESIQIRQIKALCVIKNAYEQQSAYDI-----DK	
SEQ ID NO:19	-----KVKMEKVYSEILEALKWKF-----FANGDNKNRIYVESIQIRQIKALCVIKNAYEQQSAYDI-----DK	
SEQ ID NO:18	Y-----ENVYKAEVAFVNVIKRLQSQ-----EANGDAQGALYMSYLSKMRALKNYINLKLAYYDHQSAYDLKM-GFTDI	
SEQ ID NO:28/35	-----NGDIRTEQAIRRTLHLSKKF-----SDGNHETERIYVQNVFSIREQLKHFIILSNRYSEQSDYDTKM-GFIDE	
SEQ ID NO:43/52	-----QHEKIVEDKITSGMKKIAIRL-----FQEGKVRERIYVQNVLIRALLKALFSTKLAYSNEQKIYDNLM-RFGEK	
SEQ ID NO:30/33/37/40	ATFRETQKLLIALEKAIERVMKQVFDKY-----NDGKHPLAIIYIGNAIKYRRLIKGYLAQKKKYSAHSEYDKAM-GYTDD	

Fig. 1H

Identity	670	680	690	700	710	720	730	740
SEQ ID NO:1	FSDSCVEMDSRRKENP--	FVQNTNEAMELIGKMSVAQDI	IGCRDNIIT	YAYNVFRRNGYDT	VGLENLESSQFE	---	RFSS-	
SEQ ID NO:29/36	STESKETMDKRRWENP--	FRNTPEASKLIKMDNVSRQLI	IGCRDNIIT	YAYRVEKNGYDT	ISLENLESSQFE	---	NNDH-	
SEQ ID NO:41	STETKETMDKRRWENP--	FIQTREAQELIAKMDNAVAGI	IGCRDNIIT	YAYKVFGDNNYDT	TVGLENLTSSQFD	---	NYST-	
SEQ ID NO:22	STASKETMDKRRFDNP--	FRNTEVANELLKIDNVLGDI	KGCMANIT	YAFKVLQKNGYNT	IGLEYLDSQFE	---	NMRT-	
SEQ ID NO:48/55	STESKETMDKRRMEFP--	FVNTDTAKELLAKLNNEQDLI	IGCRDNIIT	YAFNFKNNGYDT	LAVEYLDQAQFD	---	KRRM-	
SEQ ID NO:31/39	STESKETMDKRRREFP--	FVNTDTAKELLVKQNNIRQDI	IGCRDNIIT	YAFNFKNNEYDT	LSVEYLDSSQFD	---	KRRI-	
SEQ ID NO:2	STESKETMDKRRREFP--	FVNTDTAKELLVKQNNIRQDI	IGCRDNIIT	YAFNFKNNEYDT	LSVEYLDSSQFD	---	KRRI-	
SEQ ID NO:49/54	STENKEMMDKRRFEFS--	FINTDTAQELLIKLNKVEQDLI	IGCRDNIIT	YAFNFKTNGYDT	LAVEYLDQAQFD	---	KAKM-	
SEQ ID NO:32/38	S-----DERRELYP--	FINTETAKEILGKKRNVEQDLI	IGCRDNIIT	YAFNVLNRNGYDT	ISVEYLDSSQFD	---	KRRM-	
SEQ ID NO:44	STASKETMDKRRFENP--	FVETDVAKELLGKLACVEQDI	IGCRDNIIT	YAFNVLNRNGYDT	ISVEYLDSSQFD	---	KIGM-	
SEQ ID NO:47	STNSKKTMDKRRFENP--	FIEETAKNLSKLNRIE	SRILIGCRDNIIT	YAFNVLNRNGYDT	ISVEYLDSSQFD	---	KTKV-	
SEQ ID NO:42/46/51/53	STNSKETMDPRRFENP--	FINTDIAKGLIVKLENVKCDI	VGCRDNIIT	YADVI	VNLNGFDT	IGLEYLDSQFE	---	KTKV-
SEQ ID NO:17/45	SEE-----NKIKYKDE--	FNETEKGEILGKLNNVYKDI	IGCRDNIIT	YAVNLF	IRNGYDT	VALEYLESSQFE	---	KARR-
SEQ ID NO:25	PDEV-----YKSD--	FINEPSAKEMLVKLNRIE	RKIIGCRDNIIT	YAFNVLNRNGYDT	IGVEYLTSSQFE	---	KKRR-	
SEQ ID NO:15/24	STESKESMDKRRFENP--	FINTPVAKELLEKMNNVKQD	INGCKNIIT	YAYKVLEQNGYNT	IALENLENSNFE	---	KIRV-	
SEQ ID NO:14	STESKESMDKRRTEFP--	FRNTPVANELLSKLNNVQD	INGCLKNIIT	YAYKVLEQNGYNT	IALENLENSNFE	---	KKQV-	
SEQ ID NO:4	STESKESMDKRRLEFP--	FRNTQIANGFLEKLSNVQD	INGCLKNIIT	YAYKVLEQNGYNT	IALENLENSNFE	---	KKQV-	
SEQ ID NO:23	STESKESMDKRRLEFP--	FRNTQIANGFLEKLSNVQD	INGCLKNIIT	YAYKVLEQNGYNT	IALENLENSNFE	---	KKQV-	
SEQ ID NO:21	STESKETMDQRRSLYP--	FINTETIAQNIITKMN	VQDINGCLKNIIT	YAYKVLEQNGYNT	IALENLENSNFE	---	KKQV-	
SEQ ID NO:27	STDSKETMDKRRWESP--	FRNTEEGTKLYDEINTYQNR	IIGIRNSIIT	YAYLVLENGYDNLS	EYLTSSQFK	---	VNKT-	
SEQ ID NO:3	STASKDTMDKRRFENP--	FSETETGKLNNDLSALSKKI	IGCRDNIIT	YAYVTTIQDNGYTM	IGVEDLNSSTFA	---	NTRN-	
SEQ ID NO:56	--DTLHGVDYKQI-HP--	YAQSGEGAEQMKMKT	TIENNLIANRNNIIT	YAYVTFELNFDL	IALENI	TKDIME	DKKRRKS-	
SEQ ID NO:19	TQEYIET-----HP--	FSLTEKGMSIKSKMDKICQTI	IGCRNIIIT	YAYSFERNNGYTI	IGLEKLTSSQFE	---	KTKS-	
SEQ ID NO:18	TQEYIET-----HP--	FSLTEKGMSIKSKMDKICQTI	IGCRNIIIT	YAYSFERNNGYTI	IGLEKLTSSQFE	---	KTKS-	
SEQ ID NO:28/35	STESKETMDERRKLP--	FNKEKEAQEILAKMKNISNVI	IACRNNIIT	YAVMYKMFERNGYDF	IGLEKLESSQMK	---	KRQSR-	
SEQ ID NO:43/52	NTTSNATMDKRRFDKSLMFRYTQ	RGRLYEIERIECGRKITE	IRDNIIT	YARNVFLNGYDT	IALEYLTNATIQ	---	KPTR-	
SEQ ID NO:30/33/37/40	-----DDRRKDEG--	FHTTCRGTSRSEMDMLSKKIL	ACRDNIIIT	YAYGVYVIGLNGF	DGIGSLENLESSTFM	---	DVKI-	
	DTDRKENMDERRFDKSKFRYTPEA	QALLDTMHTIEKKIVGCVSNAIS	YAYHKFDENG	FNVALENLT	SATFAKKYKSDK-			

Fig. 11

SEQ ID NO:1	750		760		770		780		790		800		810		820		830	
SEQ ID NO:29/36																		
SEQ ID NO:41																		
SEQ ID NO:22																		
SEQ ID NO:48/55																		
SEQ ID NO:31/39																		
SEQ ID NO:2																		
SEQ ID NO:49/54																		
SEQ ID NO:32/38																		
SEQ ID NO:44																		
SEQ ID NO:47																		
SEQ ID NO:42/46/51/53																		
SEQ ID NO:17/45																		
SEQ ID NO:25																		
SEQ ID NO:15/24																		
SEQ ID NO:14																		
SEQ ID NO:4																		
SEQ ID NO:23																		
SEQ ID NO:21																		
SEQ ID NO:27																		
SEQ ID NO:3																		
SEQ ID NO:56																		
SEQ ID NO:19																		
SEQ ID NO:18																		
SEQ ID NO:28/35																		
SEQ ID NO:43/52																		
SEQ ID NO:30/33/37/40																		

Fig. 1J

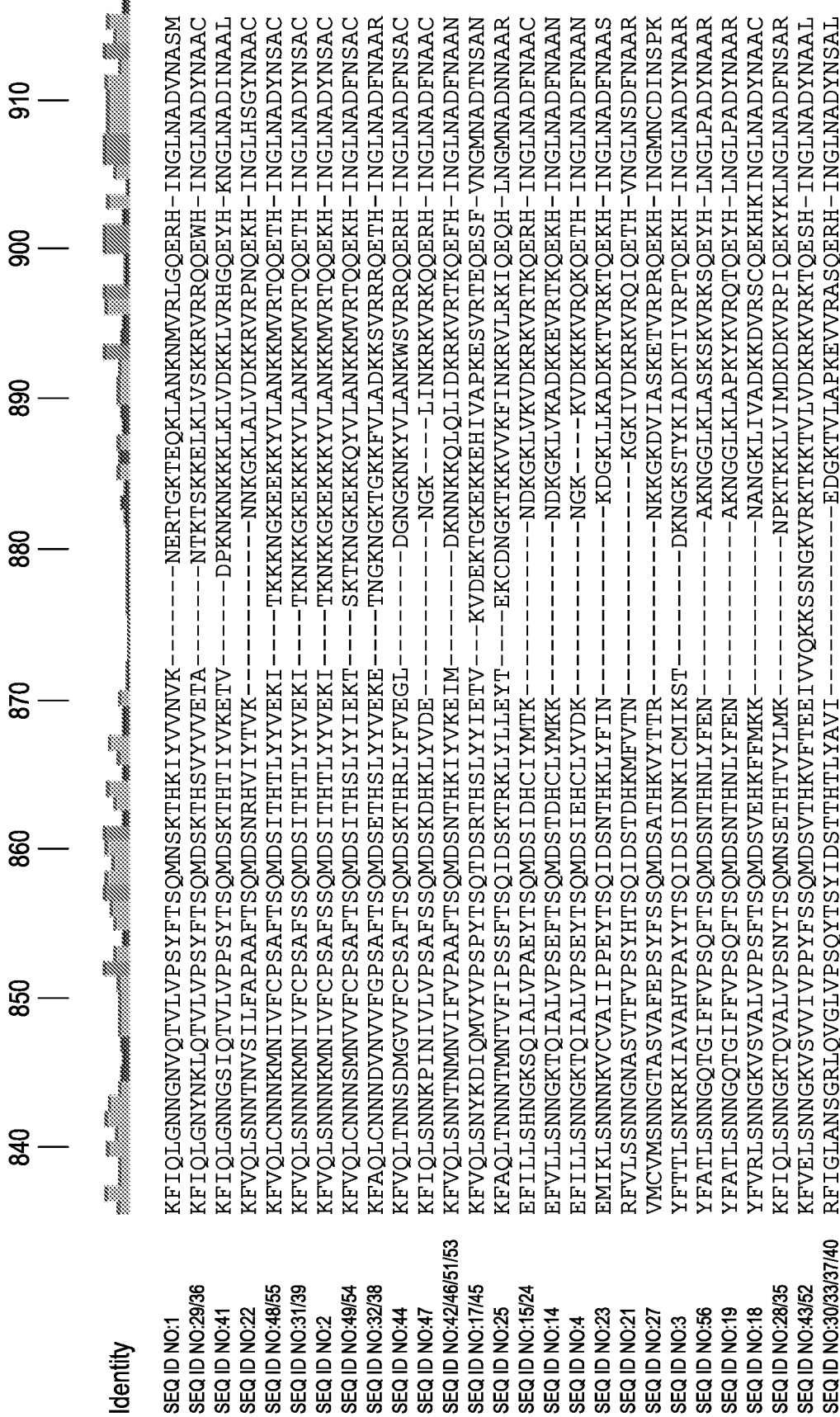


Fig. 1K

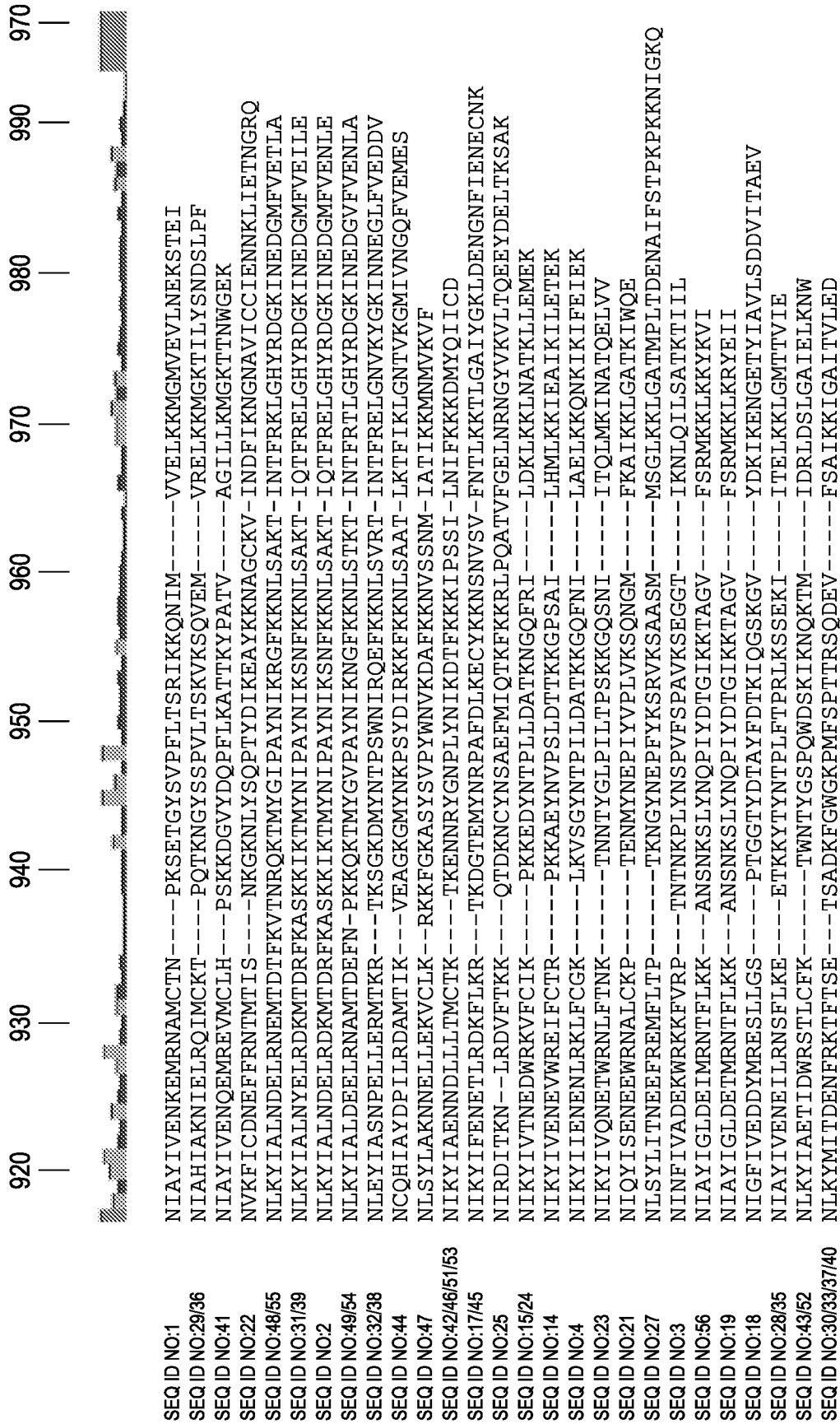


Fig. 1L

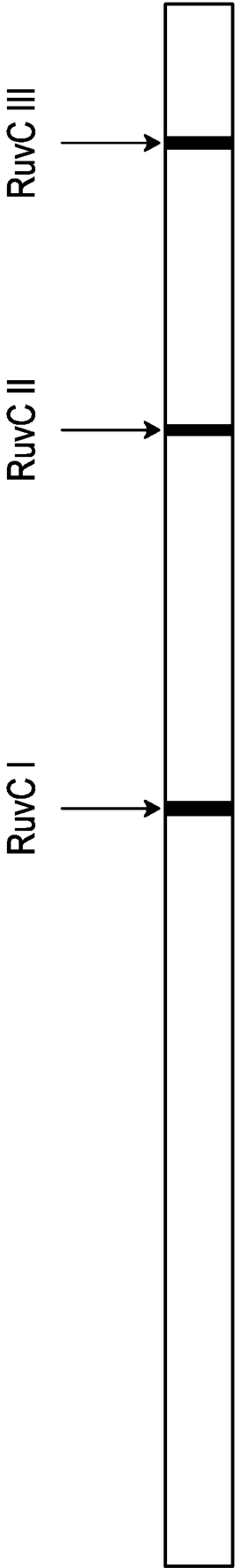


Fig. 2

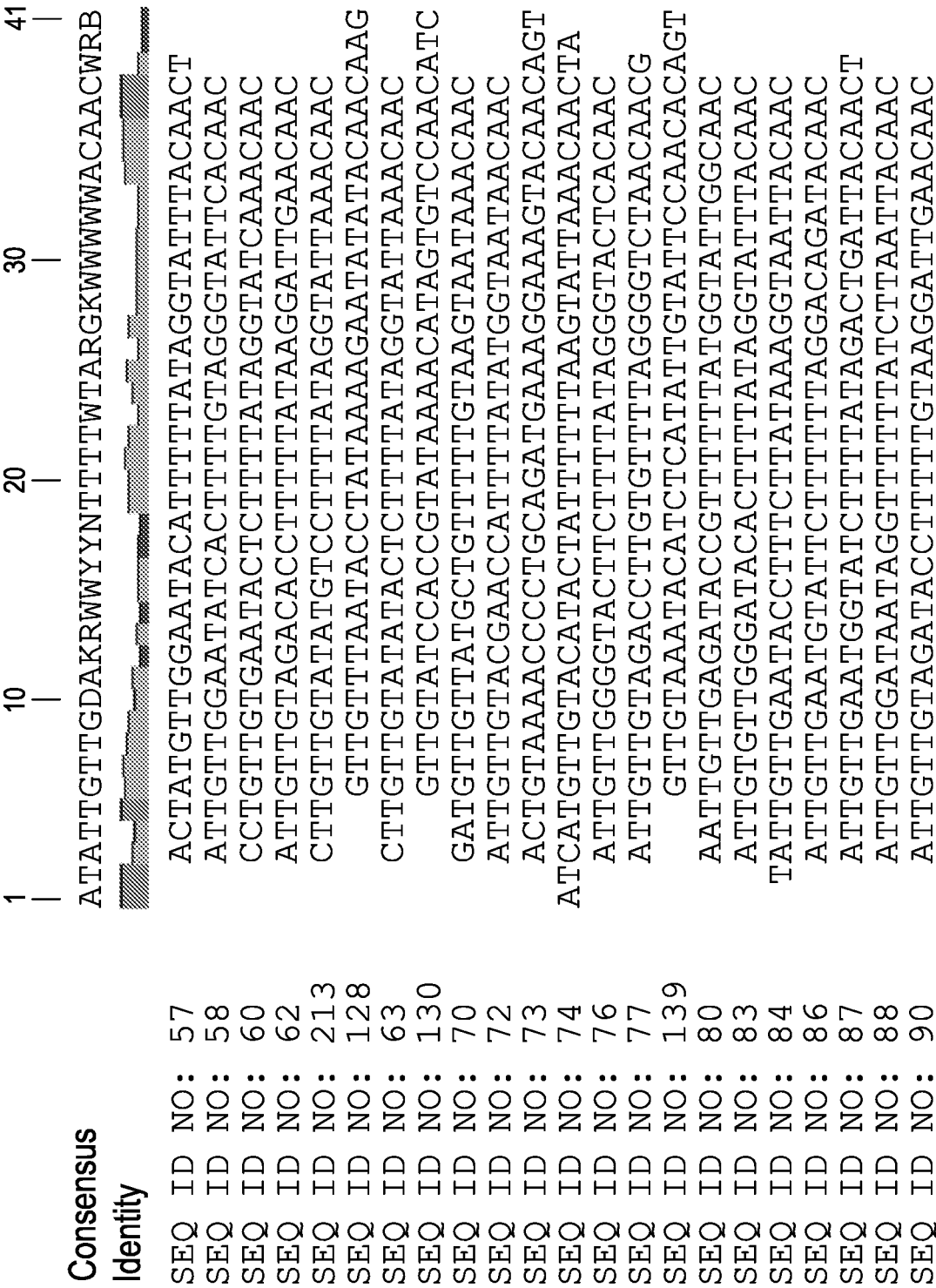


Fig. 3

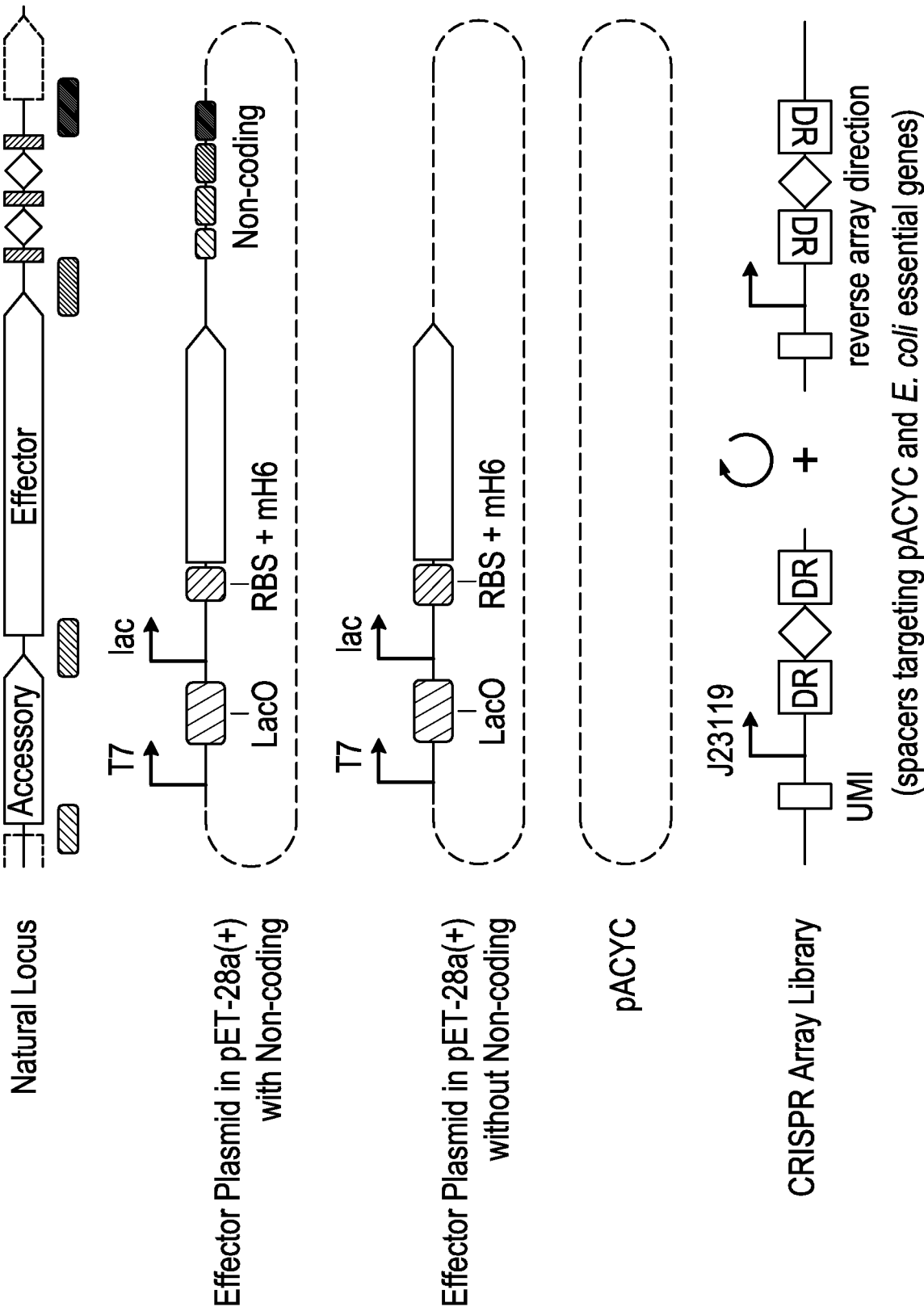
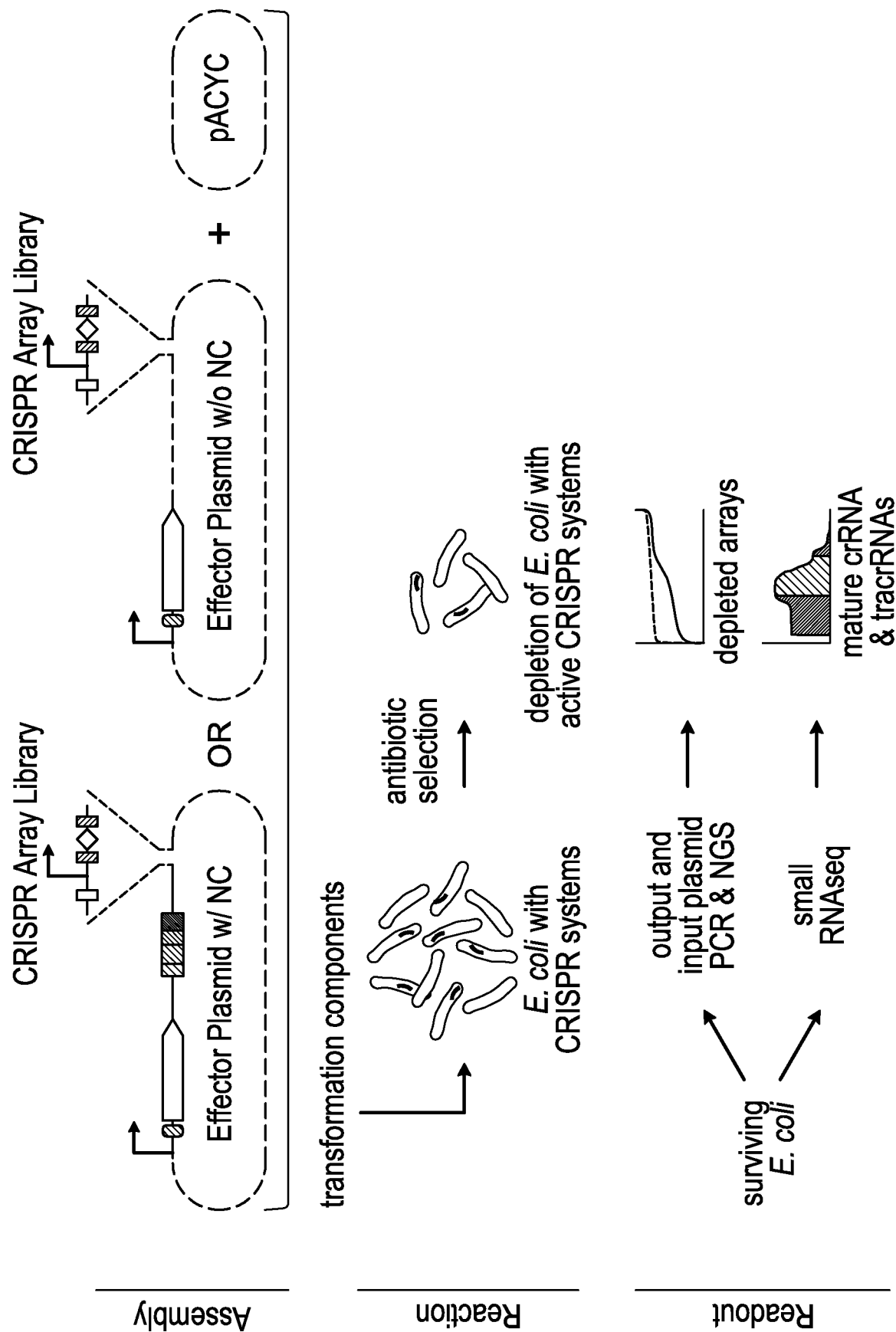


Fig. 4A



CLUST.091979: AUXO013988882 (SEQ ID NO: 1)
with non-coding

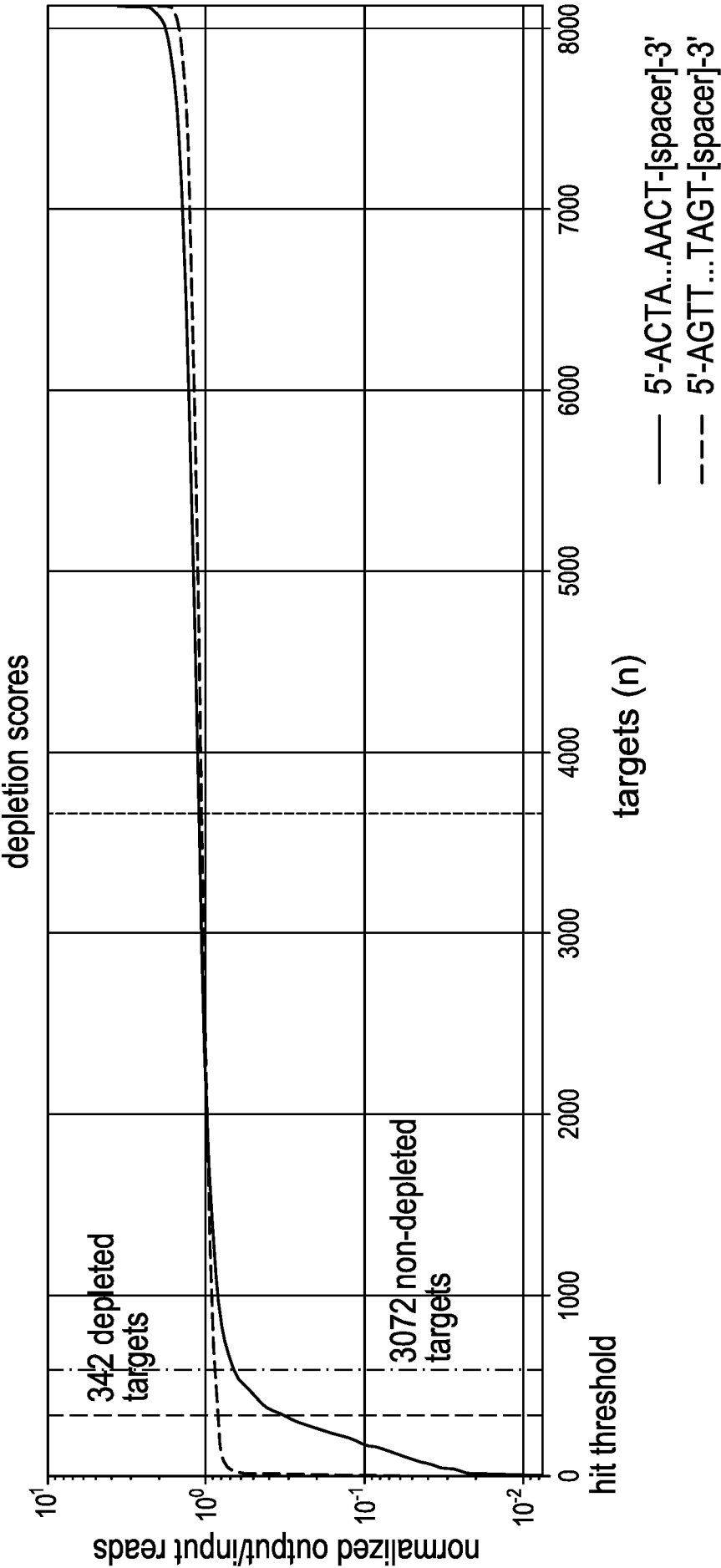


Fig. 5

CLUST.091979: AUXO013988882 (SEQ ID NO: 1)
with non-coding

distribution of targets on pACYC184

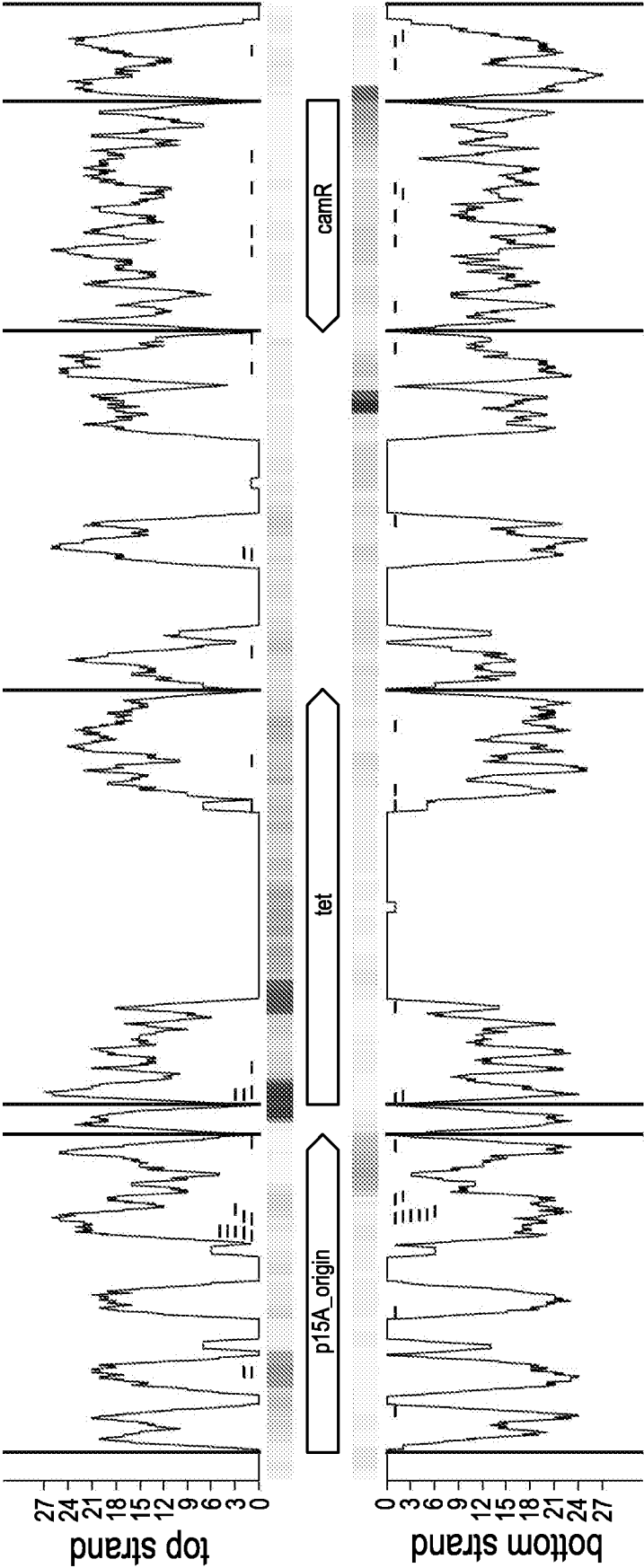


Fig. 6A

CLUST.091979: AUXO013988882 (SEQ ID NO: 1)
with non-coding

distribution of targets on ECloni

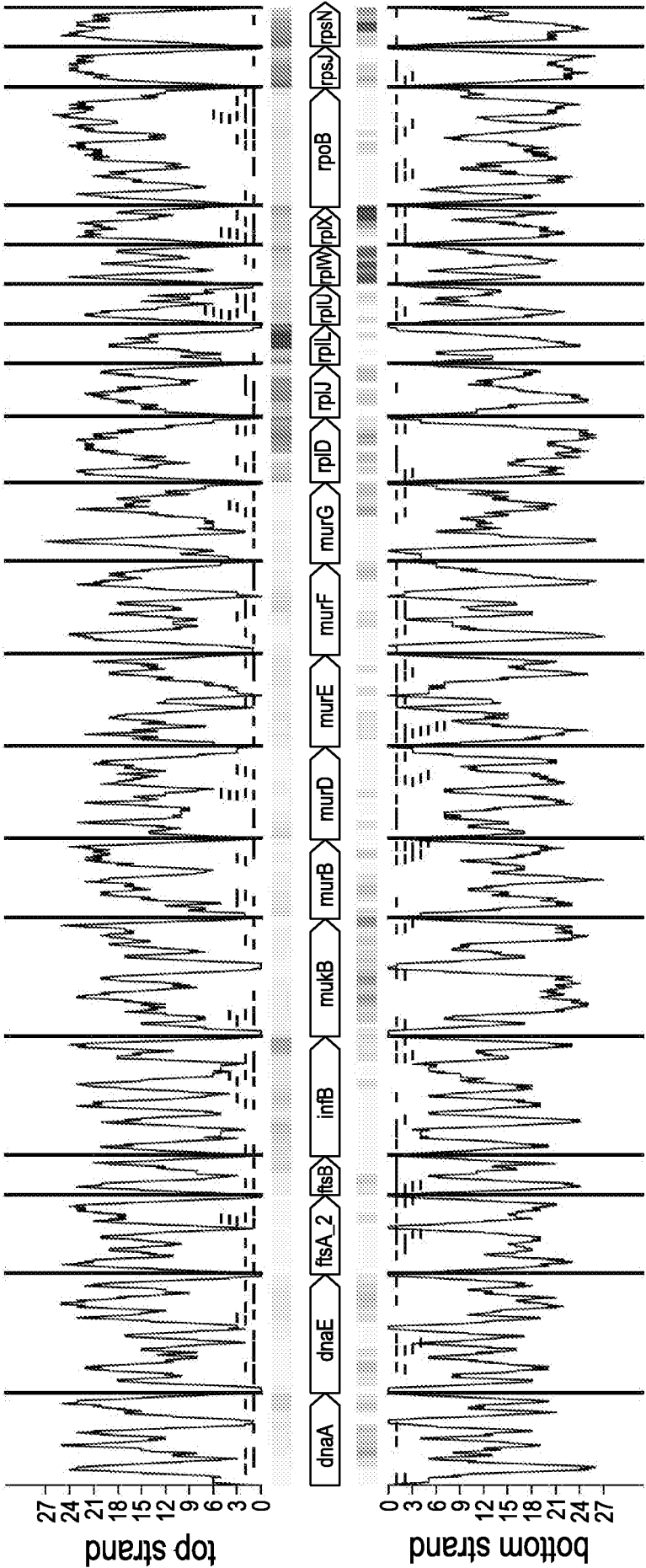


Fig. 6B

CLUST.091979: AUXO013988882 (SEQ ID NO: 1)
with non-coding

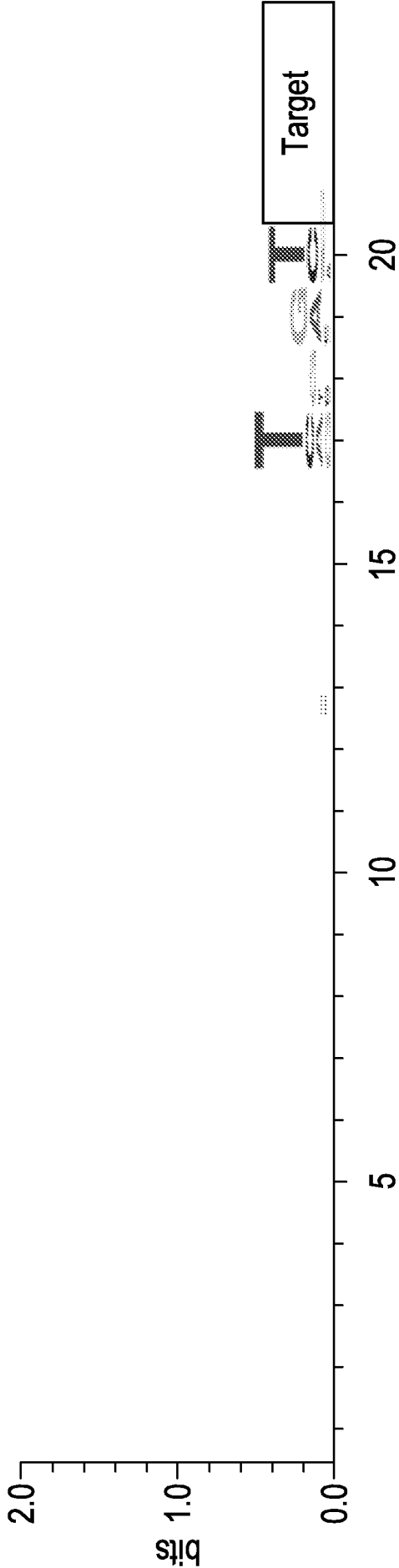


Fig. 7

CLUST.091979: SRR3181151 (SEQ ID NO: 4)
with non-coding

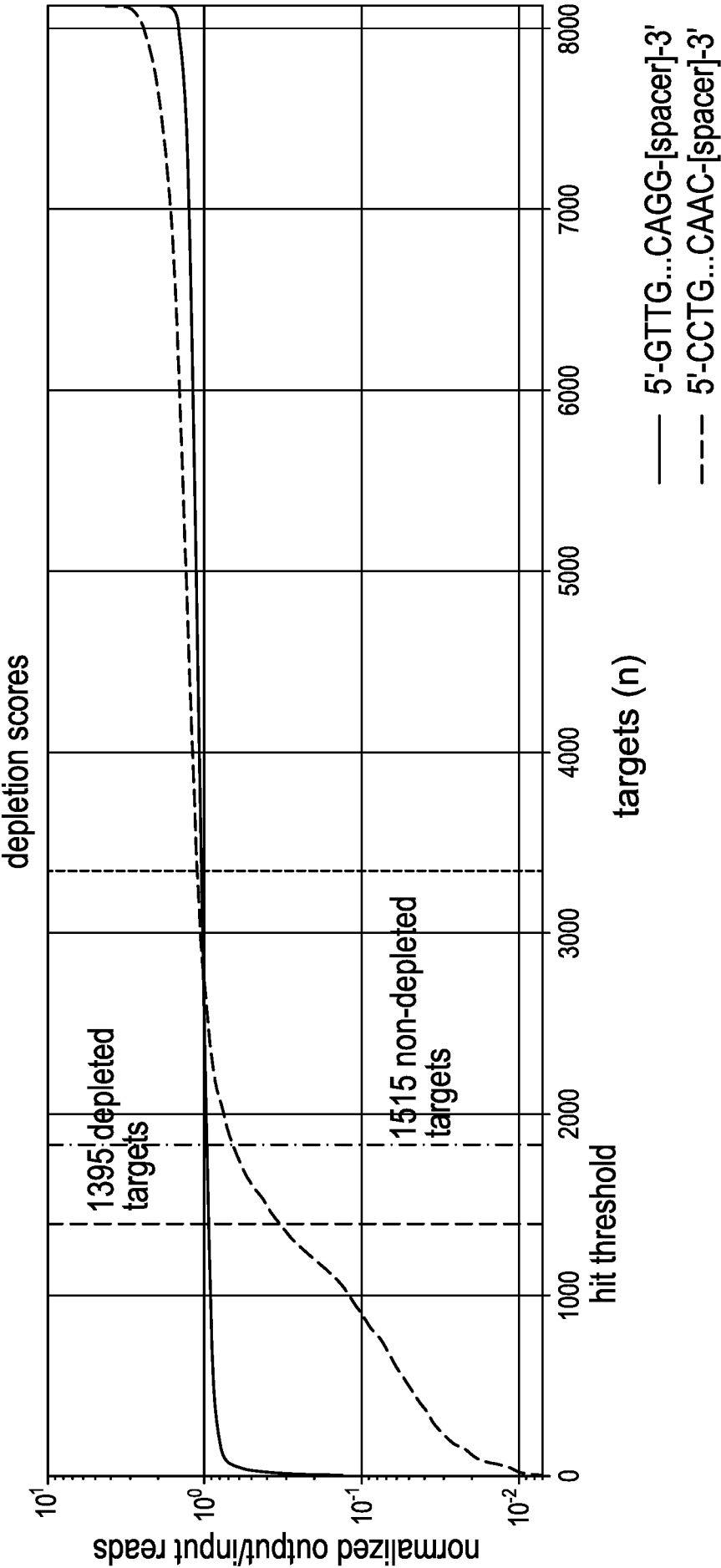


Fig. 8

CLUST.091979: SRR3181151 (SEQ ID NO: 4)
with non-coding
distribution of targets on pACYC184

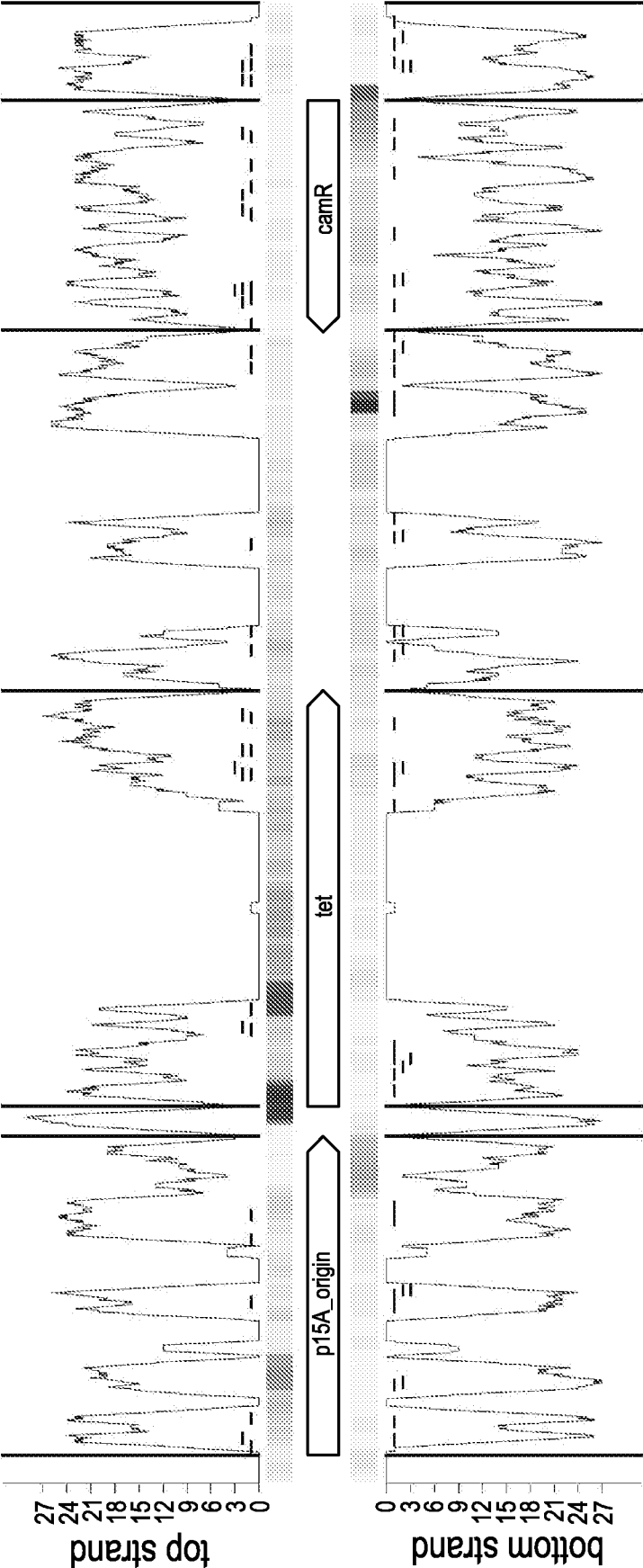


Fig. 9A

CLUST.091979: SRR3181151 (SEQ ID NO: 4)
with non-coding

distribution of targets on ECloni

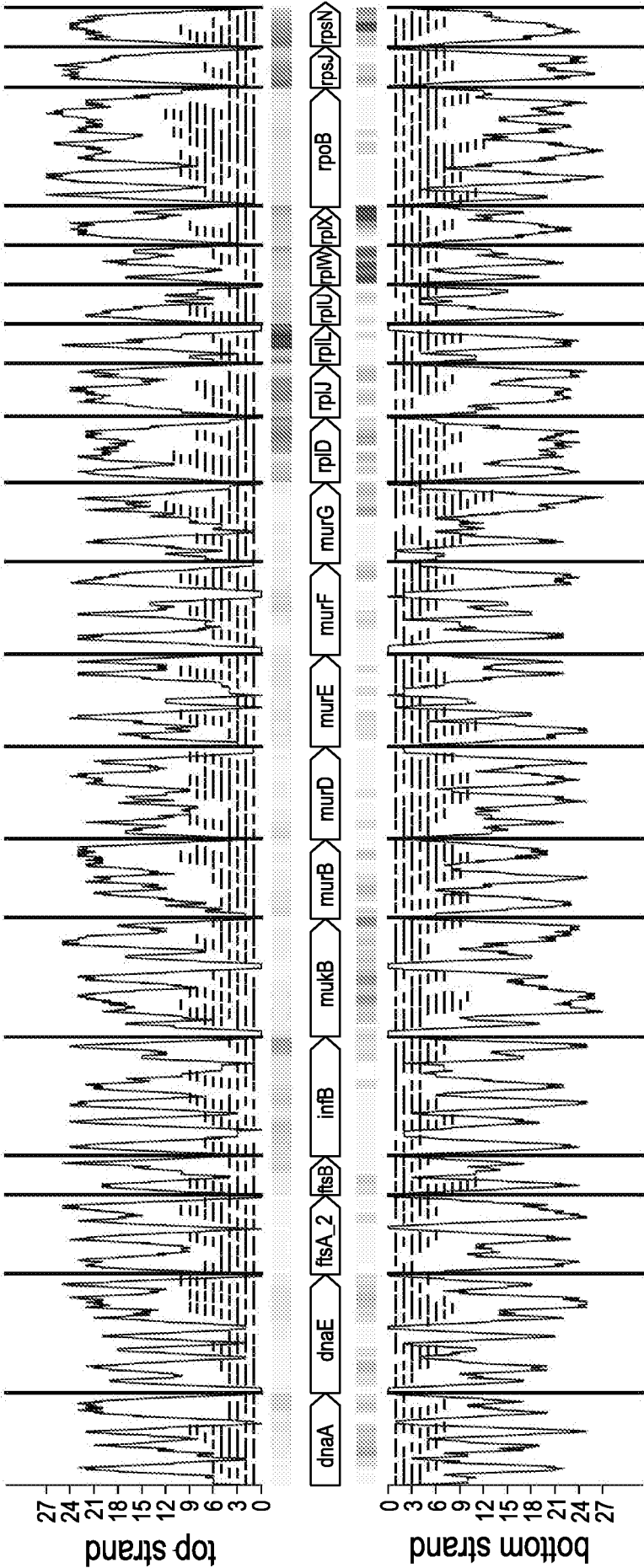


Fig. 9B

CLUST.091979: SRR3181151 (SEQ ID NO: 4)
with non-coding

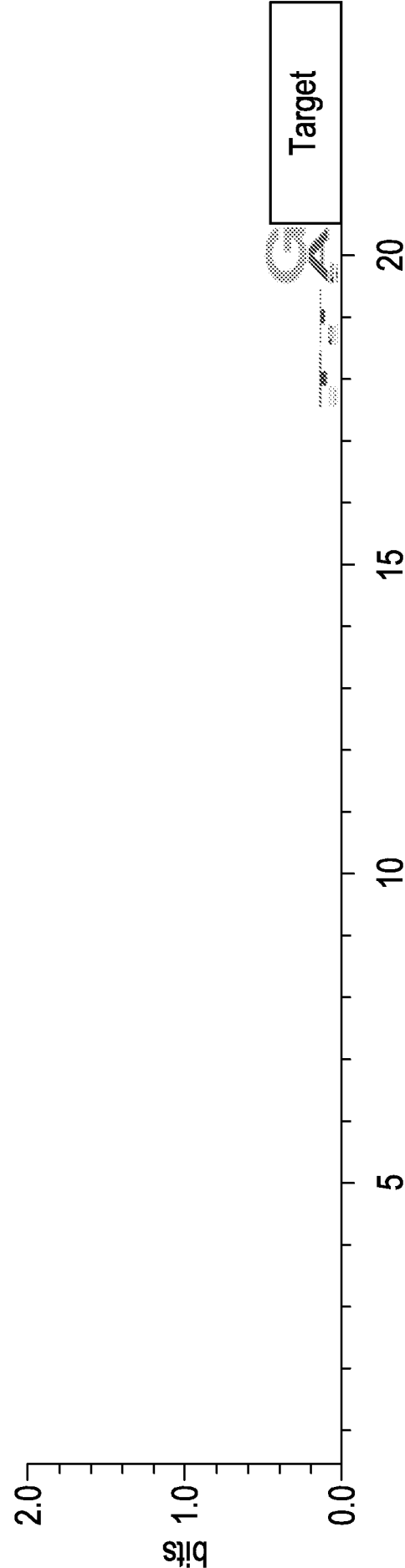


Fig. 10

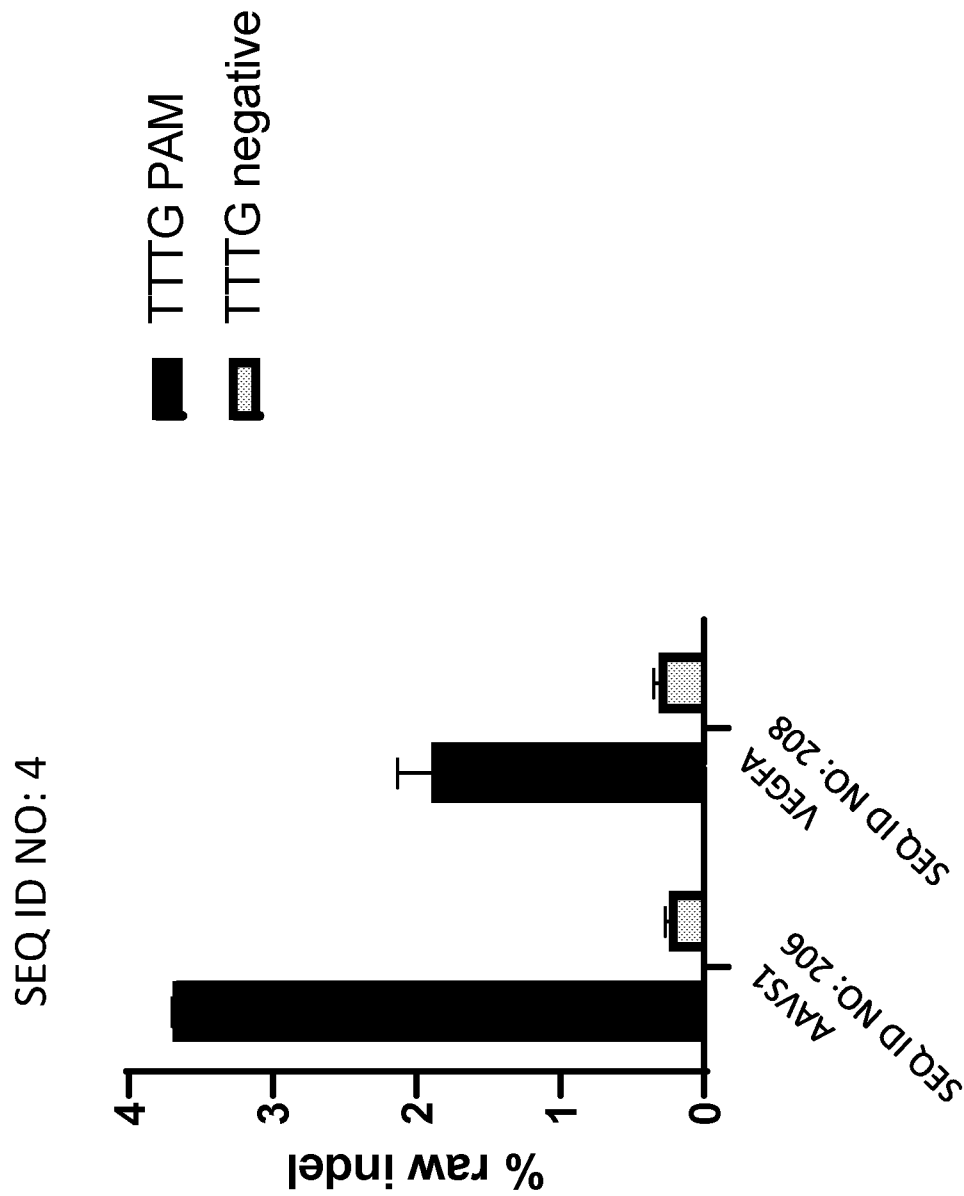


Fig. 11A

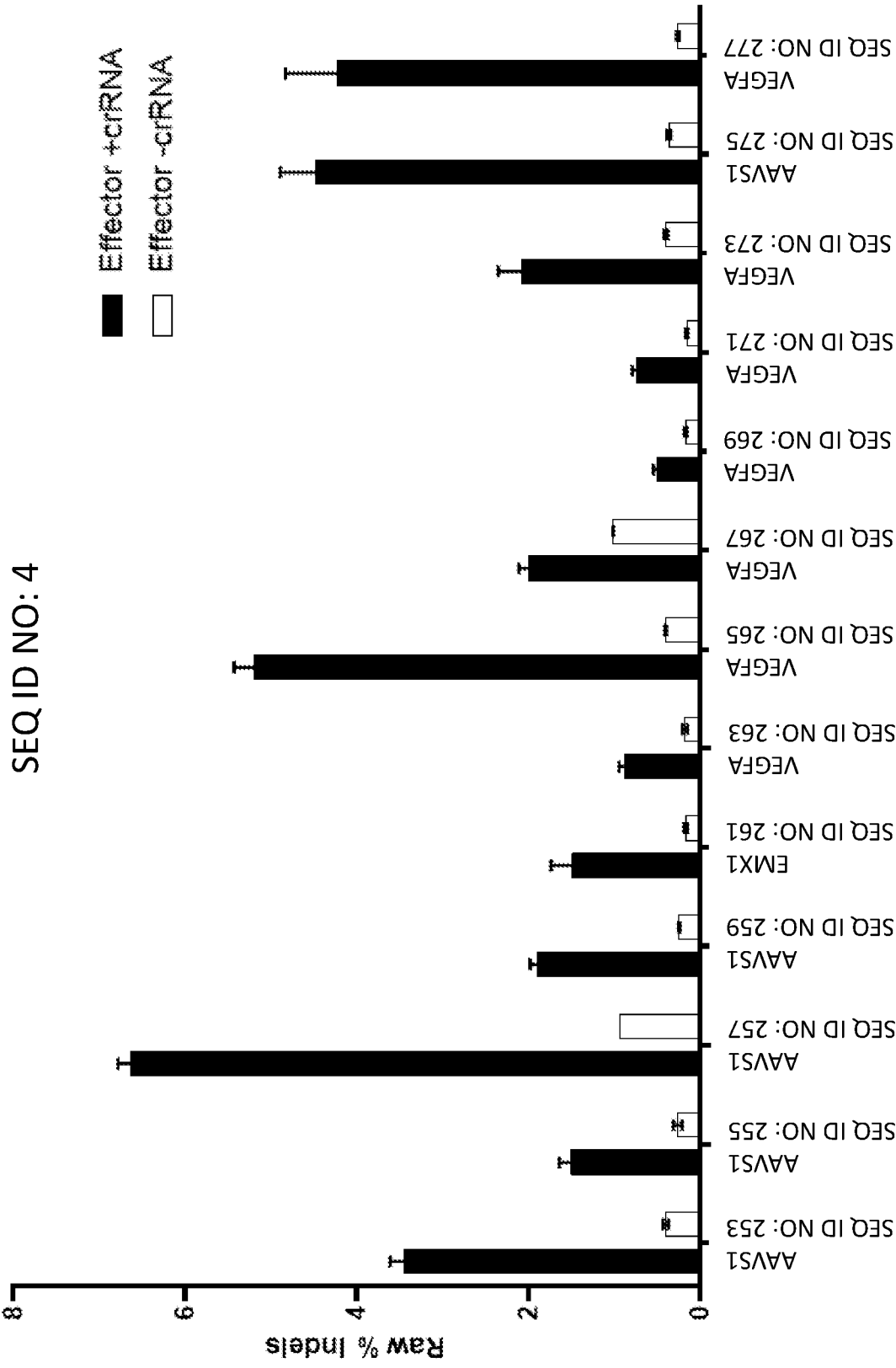


Fig. 11B

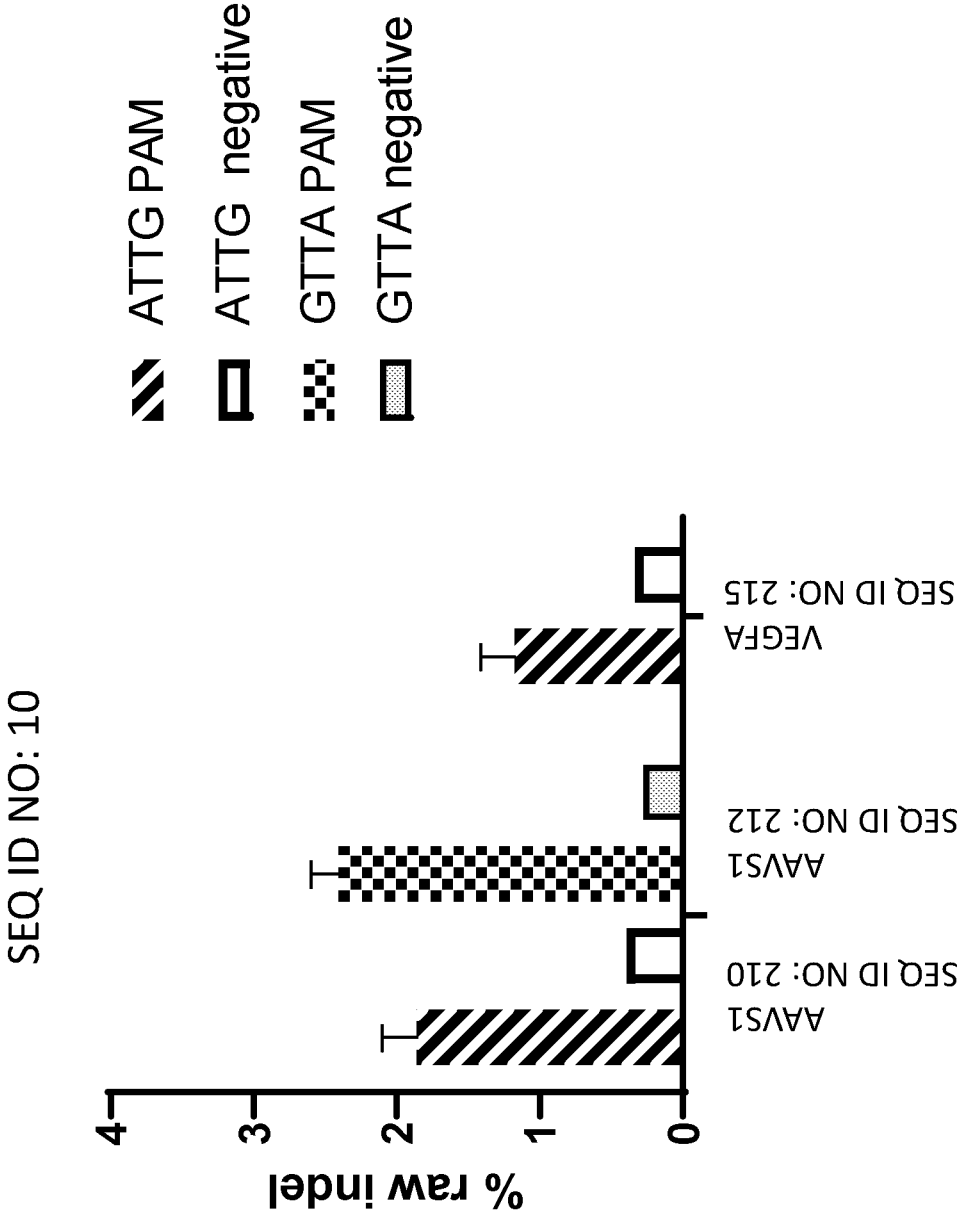


Fig. 11C

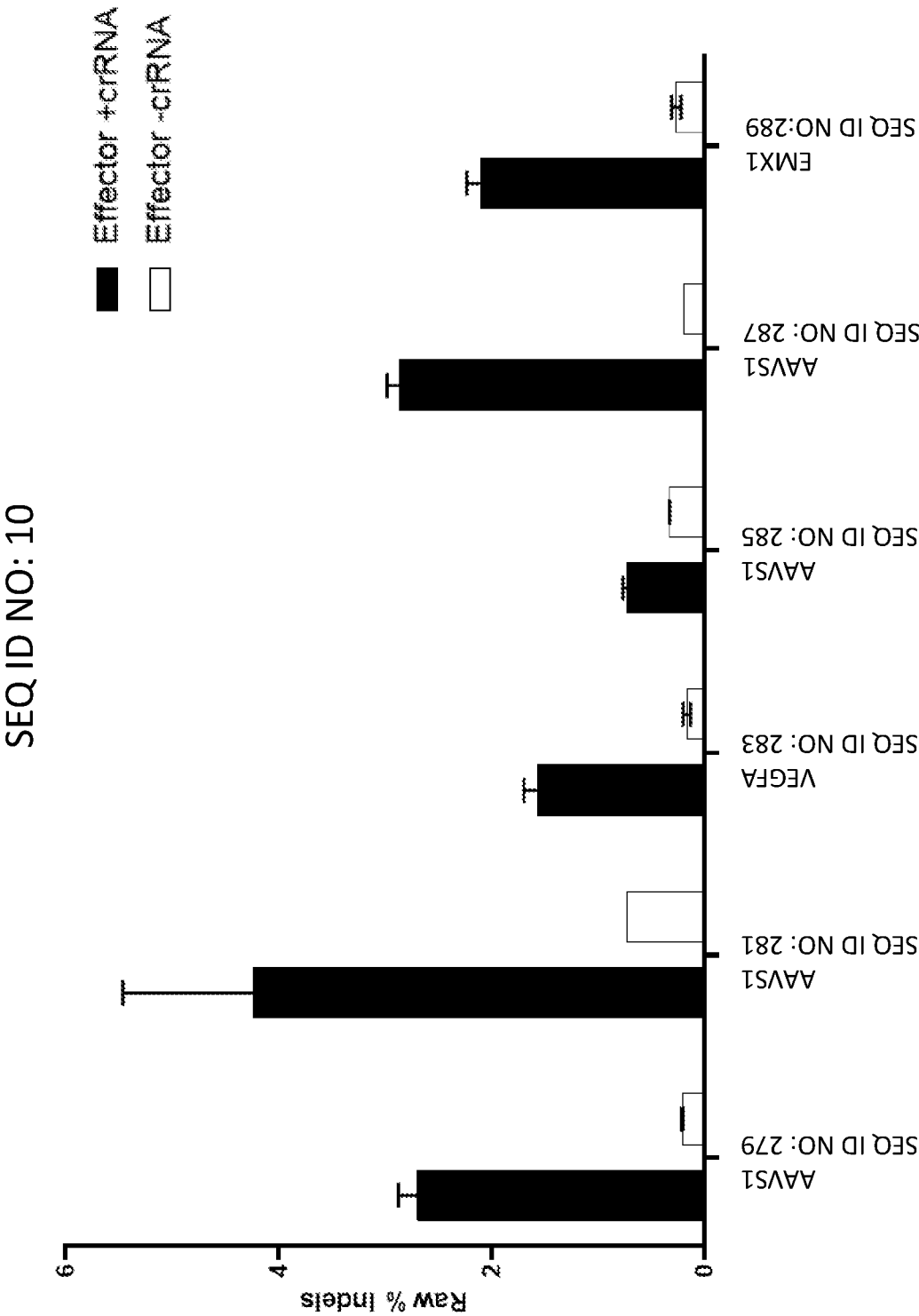


Fig. 11D