

						
	5	15	25	35	45	55
AgMC01	CKRACTLGRK	PETCYRFRFL	EWYRTLSKAC	YN---CPYNA	TDCERPHCIT	GDGVRNRVAV
AgMC02A	CARACREGE	PRICYHFTV	EYYTVLGAAC	QVC-TPNATN	TVWSHCQCVL	ADGVERGILT
AgMC03	CLRECDNTQP	-RICHFSWTM	EHYHVMGPAC	RDC-AKG-NH	TDCYHPACIT	ADGVERGVMS
AgMC04	CDRICTEREA	PRVCYFRWIA	EHYAAMGSAC	GDC-RWG-NR	SHCFHPQCIT	ADGMERGVLA
AgMC05	CDRHCVPGDP	PLTCHFRWKL	ENYATMGSAC	WDC-RLG-NR	AHCFHPQCIT	ANGLERGVFA
AaAAEL007802	CRRECMRGRK	PMNCYRFRKM	EWYETLSKAC	YE---CPYNV	TDCERPHCIA	ADGVSRSVIV
AaAAY29698	CARACREGE	PRICYHFTA	EYYTVLGAAC	QVC-TPNATN	TVWSHCQCVL	ADGVERGILT
AaAAEL001667	CMRSCEDTQP	-RVCYFKWVL	EHYHSMGPAC	KRC-ADG-VH	SDCYLPACLT	ADGFERGVMS
AaAAEL001632	CDRVCNATET	PRICYFSWA	ENYAAMGSAC	KDC-RWG-NH	TDCSHPQCIT	ADGMERPVS
AaAAEL001640	CDRTCSVDEP	SRICYKWL	ESYAAMGSAC	WDC-IRG-NR	THCFHPQCVT	ANGMERSIVS
AaAAEL001672	CDRKCTVGEP	SRVCYFHWVL	ENYSAMGSAC	WDC-LRG-NR	AHCFHPQCIT	ANGMERAMVA
AmLOC724890	CRRNCVDEAP	PMQCHYIFRL	EAYHTMSKAC	YD---CPFNV	TDCFRKHCIP	ADGIERSILV
AmLOC410365	CARACRENEP	PRICYHFTL	EYYTVLGAAC	QIC-TPNATN	VVWSDCQCVL	ADGVERGILT
AmLOC552811	CVRNCTDNEQ	PKICYFFHI	EFYTTVPAC	DIQ-GSN---	-----QCIL	ADGIEKTLIP
DmMC01	CNRDCQVGAE	PMTCRYKFV	EWYQTFKAC	YD---CPRNL	TDCSRPHCVM	GDGLERSITV
DmLac2	CARACREGE	PRICYHFTL	EYYTVLGAAC	QVC-TPNATN	TVWSHCQCVL	ADGVERGILT
DmMC03	CRRVCQQG-Q	SQNCYQLVV	HNYQRLGPEC	QR---CQFDE	RACASEHCY	GDGVANPVMA
DmCG32557	CRRDCADK-Q	PMTCYM	HYDDTMAETC	KRYDGIALAT	QLAANDCKY	ADGLESEVMV
BmMC01	CERECKEGED	PMVCYHFN	EWYQTMKAC	FN---CPFNE	TDCFRPDCIP	ADGMNRPLNV
BmLac2	CARACRENEP	PRICYHFTL	EYTVLGAAC	QVC-TPNATN	VVWSHCQCVL	ADGVERGILT
MsLac1	CERECKEGEE	PMVCYHFN	EWYQTMKAC	YN---CPFNE	TDCSRPDCIP	ADGMNRALSV
MsLac2	CARACRENEP	PRICYHFTL	ELYTMGAAC	QVC-APNATN	VVWSHCQCVL	ADGVERGILT
TcLac1	CARKCVKDSV	PMTCRYTFL	EWYHTLSKAC	YD---CPYNT	QDCYREDCIP	GDGNKRSIIV
TcLac2A	CARACREGE	PRICYHFTL	ELYTVLGAAC	QVC-TPNATN	TVWSHCQCVL	ADGVERGILT
ApLOC100165676	CQRECRAGEP	PKTCEYRFV	EWYTMKAC	YD---CPYNI	TDCYRPDCVP	ADGVAKPIIV
ApLOC100164049	CARACREGE	PRICYHFTA	ELYNVGAAC	QVC-TPNATN	TLWSHCQCIL	ADGVERGMLA
PhPHUM024710	CERPCKKG-K	LMTCKYNFVI	EYYSVMGKGC	VD---CPFNK	SHCSLKNCIP	GDGKIRTVLV
PhPHUM554290	CARACREGE	SKICYHFTL	ELYNVGAAC	QVC-TPNATN	TIWSNCQCVL	ADGVERGILT
AgMCORP	CDRVCNRADW	PRICRYELVV	EKRTFRPGST	PST-----DN	VTLTGGSKST	EQPITVSYYT
TcMCORP	CDRPCHLDW	PMICRIKI	E---NKRPC	KDC-----	-----	---TSSEIIA
AaMCORP	CKRPCNRADW	PRICRYRLVI	EKISLPKFLM	NHK-ISNENG	AATPDGSGKL	SRQVESHYFL
CqMCORP	CDRPCRADW	PRICRYRLVI	EKRLMPKSL	ATT---DQAA	ATTTGGHLAW	QHQQHRHYFL
BmMCORP	CDRECHELDW	PMICRVKLVI	EVYKTLKSC	GNC-----	-GECPSTCIS	ADGRERGVLT
MsMCORP	CDRECHELDW	PMICRVKLVI	EVYKTLKSC	GNC-----	-GLCPPTCIS	ADGRERGVLT
CfMCORP	CDRPCHLDW	PMICRVKLT	EVFQSLKSC	GDC-----	-ACLAKHCVS	TDGQRRGILT
MrMCORP	CDRPCHLDW	PMICRLKLT	EVFQSLKSC	GDC-----	-ACLHNHCIT	ADGQRRGILT
PhMCORP	CSRPCHELDW	PMICRIKLT	ERFQTLGNPC	KG---CPGNI	SDCYINGCIT	VDGQSKGILT
BtMCORP	CDRPCHLDW	PMICRLKLT	EVFQSLKSC	GDC-----	-ACLSHCVS	ADGQRRGILT
BiMCORP	CDRPCHLDW	PMICRLKLT	EVFQSLKSC	GDC-----	-ACLSHCVS	ADGQRRGILT
ApMCORP	CDRECHELDW	PLICRYKIVL	ETQKIQNNCQ	KCS-----SN	NQTECQHDIY	CDRFSEKIIT
HsMCORP	CDRPCHLDW	PMICRVKLT	EVFQSLKSC	GDC-----	-ACLANHCVA	ADGQRRGILT
DpMCORP*	CDRECHELDW	PMICRVKLVI	EVYKTFKSC	NSC-----	--ECPAMCIT	ADGRERGVLS
AfMCORP	CDRPCHLDW	PMICRVKLT	EVFQSLKSC	GDC-----	-ACLADHCVS	ADGQRRGILT
DpMCORP	-----	-----MTEA	S---NPR--	-----	-----	-----TIIT

						
	65	75	85	95	105	115
AgMC01	INRMMPGPAI	EVCENDIIVV	DVENHLMGES	TTIHHWGLHQ	RRTPYMDGVP	HVSQCPISPG
AgMC02A	VNRMIPGPSI	QVCENDRVVI	DVENHMEGME	LTIIHHWGIWQ	RGTQYYDGVP	FVTQCPISPG
AgMC03	LNRRIPGPTI	SVCRHDLIVV	DITNAMAGTS	AAIHHWGLHQ	RATPYMDGVP	FITQCPIGFG
AgMC04	LNRRIPGPTI	HVCRHDLIVV	DVVNHMEGLE	STIHHWGAHQ	YDTPWMDGVP	MITQCPINPG
AgMC05	INRRVPGPPI	HVCKHDSIVV	DVENQLEGLG	STIHHWGFHQ	KATPWMDGVP	MVTQCPIPQD
AaAAEL007802	INRMMPGPSI	EVCENDIITV	DVENHLMGDS	TTIHHWGLHQ	KRTPYMDGVP	HISQCPISPG
AaAAY29698	INRMIPGPSI	QVCENDRVVI	DVENHMEGME	LTIIHHWGIWQ	RGTQYFDGVP	FVTQCPISPG
AaAAEL001667	INRQVPGPAI	QVCKDDLIVV	DMTNAMGGTA	TAMHHWGLHQ	RDTPHMDGVP	FVTQCPISPG
AaAAEL001632	LNRMMPGPAV	IVCRNDIIVI	DLLNHMEGSS	TTIHHWGMHQ	TQTPWMDGVP	MVTQCPISPG
AaAAEL001640	INRMMPGPII	FVCQGDITIV	DVSNEGEGMS	ATIHHWGFHQ	MQSPWMDGVP	MVTQCPISPG
AaAAEL001672	INRMMPGPII	FVCRGDTIVV	DVSNEGEGMS	NTIHHWGFHQ	LKSPWMDGVP	MLTQCPISPG
AmLOC724890	VNRQMPGPAI	EVCQGDITIV	DVINLLHSES	TTMHHWGHQH	VKTPYMDGVP	YVSQCPISPG
AmLOC410365	ANRMIPGPSI	QVCQGDKIVI	DVENHIEGME	VTIHHWGVWQ	RGSQYYDGVP	FVTQCPISPG
AmLOC552811	INRQLPGPPI	EVCLNDRVVV	DVQNAAMGME	ATIHHWGLFQ	NGFQYYDGVP	YVTQCPISPG
DmMC01	VNRMMPGPAI	EVCEGDEIVV	DVKNHLLGES	TSIHHWGLHQ	KKTPYMDGVP	HITQCPISPG
DmLac2	ANRMIPGPSI	QVCENDKIVI	DVENHMEGME	VTIHHWGIWQ	RGSQYYDGVP	FVTQCPISPG
DmMC03	VNRMVPGPSI	ELCENDTVVV	DVLNLYS-EP	TTMHHWGVHM	HRTPEMDGAP	FITQYPLQPG
DmCG32557	VNGQLPGMNI	EVCGDITVVA	DVINSMH-ET	TTIHHWGMHQ	RLTPFMDGVP	HVTQYPIEAG
BmMC01	INRMMPGPAI	EVCQHDRVIV	DVENDLMTEG	TTVHHWGHQH	KGTPYMDGTP	YVTQCPISPE
BmLac2	ANRMIPGPSI	QVCENDKIVI	DVENHMEGME	VTIHHWGIWQ	RGSQYYDGVP	FVTQCPISPG
MsLac1	VNRKMPGPAI	EVCQDDRIIV	DVENDLMTEG	TTVHHWGHQH	RGTQYMDGTP	YVTQCPISPE
MsLac2	ANRMIPGPSI	QACENDKIVI	DVENHMEGME	VTIHHWGIWQ	RGSQYYDGVP	FVTQCPISPG
TcLac1	VNRKMPGPSV	EVCLGDEVII	DVVNHLSSDS	TTIHHWGHQH	KNSPYMDGVP	FVTQCPISPG
TcLac2A	ANRMIPGPSI	QVCEGDKIVI	DVENHIEGNE	VTIHHWGVWQ	RGSQYYDGVP	FVTQCPISPG
ApLOC100165676	INRSLPGPSI	QVCLGDTVMV	DVENAMMEES	TSVHHWGHQH	RNSPYMDGVP	YVTQCPISPH
ApLOC100164049	VNRMLPGPSI	QVCEGDKIVI	DVLNHHMGME	LVIHHWGHQH	KGTYQYDGVP	YVTQCPISHEG
PhPHUM024710	VNRQMPGPRI	DVCHGDTVEV	KVTNKLMDIS	TTIHHWGHILQ	KETPYMDGVP	HVSQCPISGPQ
PhPHUM554290	ANRMIPGPSI	QVCEGDKIVI	DVENRMEGQA	ASIIHHWGVWQ	RGTQYSDGVP	FVTQCPISQEG
AgMCORP	VNGRYVGPTL	TVCENDFLVV	DVENRIPGES	ITLHWTGQSQ	RRTPFMDGVP	MITQCPISASF
TcMCORP	VNGQSPGPAI	QICQNDILVV	DVVNKMPGHS	LAIHWRGQPN	VEAPFMDGVP	LVTQCPISLSY
AaMCORP	VNGHHTGPTL	EVCKNDILVI	DVENRIPGRS	ISLHWTGQTQ	KRTPFMDGVP	MISQCPISITSY
CqMCORP	VNGRHTGPAL	TVCERDFIVI	DIVNRIPGQS	IAIHWTGQSQ	RRTPFMDGVP	MITQCPISASY
BmMCORP	ANRALPAPTL	HVCHNDILVV	DVVHRAHAHA	LSIHWRGQPQ	KETPFMDGAP	MLTQCPQPAY
MsMCORP	ANRALPAPPL	HVCHNDILVV	DVVHRAHAHT	LSIHWRGQPQ	KETPFMDGAP	MLTQCPQPAY
CfMCORP	ANRQMPGPSI	QVCENDILVI	DVINRLPGKA	MAIHWRGQTQ	VEMPYMDGAP	LITQCPISPSY
MrMCORP	ANRQLPGPTI	QVCENDILVI	DVINRLPGKA	AAMHWRGQSQ	VESPFMDGAP	LITQCPISPSY
PhMCORP	VNRQFPGPPL	EVCQYDIVLV	DIVNRIPGQS	FGVHWRGQSQ	SETPFMDGVP	MITQCPISPSL
BtMCORP	ANRQLPGPII	QVCENDILVV	DVINRIPGKT	AAMHWRGQTQ	IETPHMDGAP	LVTQCPISPSY
BiMCORP	ANRQLPGPII	QVCENDILVV	DVINRIPGKT	AAMHWRGQTQ	IETPHMDGAP	LVTQCPISPSY
ApMCORP	ANRQVPGPSI	RVCENDIMVI	DIVNRIPGHS	VSVHWRGQWQ	KETPVMDGAP	MVTQCPISLPH
HsMCORP	ANRQMPGPSI	QVCENDILVV	DVINRLPGKA	TAVHWRGQTQ	LEMPYMDGAP	LVTQCPISPSY
DpMCORP*	ANRELPAFAP	HVCQNDILVV	DVVHRAHAHA	LSIHWRGQPQ	KETPFMDGAP	MLTQCPQPAY
AfMCORP	ANRQMPGPTI	QVCENDILVV	DVINRLPGKA	AAIHWRGQSQ	LETQYMDGSP	LVTQCPISPSY
DpMCORP	ANRQIPGPPI	QVCQNDILIV	DVINRVPGKS	VTIHWRGQPN	HEAPFMDGVP	MVTQCPISPSY

						
	125	135	145	155	165	175
AgMC01	TTFRYTFRAD	NPGTHFWHSH	TGMQRGDGAF	GALIIRK--D	NDIQELLYDH	DLSEHVITVQ
AgMC02A	NTFRYQWTG-	NAGTHFWHAH	TGLQKLDGLY	GSIVVRQPPS	RDPNSHLYDF	DLTTHIMLVS
AgMC03	NTFRYAFLAT	EPGTQFYHSH	SGHHKVNGHY	GALIVREPKR	VDPNGDLYHY	DTPAHVILGS
AgMC04	AAFRYAFNAS	EPGTQLYHSH	SGHQKANGHY	GLFVIRSP--	TDINRHLYDY	DLSEHHIITS
AgMC05	TTFRYQFTAV	EAGTQFYHSH	AGFQKANGHY	GMVVVRDP--	SDLNQAHYDY	DLSEHRIIIA
AaAAEL007802	TTFRYTFKAD	NAGTHFWHSH	TGMQRGDGAF	GPLIIRR--D	NDPQQILYDH	DLSEHVITVQ
AaAAY29698	NTFRYQWTG-	NAGTHFWHAH	TGLQKLDGLY	GSIVVRQPPS	RDPNSHLYDF	DLTTHIMLVS
AaAAEL001667	STFRYAFWAT	EPGTQFYHSH	AGHHKVNGHY	GAMIIRQPEV	NDPNAKLYDF	DLPEHLIVAS
AaAAEL001632	NTFRYVFNAS	EHGTQFYHSH	AGHQKANGHF	GLLVVRHP--	TDLNMNLYDY	DLSEHHIIIA
AaAAEL001640	TTFRYRFVAE	EAGTHWYHSH	SGYHMANGHL	GAAVVRNP--	LDVNMALYDF	DLSEHVMLIS
AaAAEL001672	SSFRYTFQAE	EPGTQWYHSH	AGYHMANGHL	GVAVVRNP--	LDVNADLYDF	DLSEHVILLS
AmLOC724890	STFRYDFIAT	EAGTHFWHSH	SGFQRGDGVF	GPLIVRTPPK	ANWHKDLYDI	DE--HIIQIS
AmLOC410365	STFRYQWTAG	NEGTHFWHAH	TGLQKMDGLY	GSIVIRQPPS	KDPNSNLYDY	DLTTHVVLIS
AmLOC552811	STFRYDFVVK	NSGTHFYHSH	ISTHMLDGQI	GSFIVKDPFR	KNPHRDLYDK	DE--IVIFLS
DmMC01	ATFRYSFPAD	LSGTHFWHSH	TGMQRGDGVF	GALIIRKPKT	AEPHGGLYDF	DLSEHVMIVQ
DmLac2	NTFRYQWTG-	NAGTHFWHAH	TGLQKLDGLY	GSVVVRQPPS	RDPNSHLYDF	DLTTHIMLIS
DmMC03	EVQRHEFKVD	RSGSLWYHSH	VGWQRGFGVA	GAFFVVRQTSQ	ENQHSQLYDY	DLVEHTLMIQ
DmCG32557	QAFRYRFEVD	HGGTNWWHSH	TEHQRAFGLA	GPLVVRMPPK	LNPHAHLYDF	DMSEHVIMIQ
BmMC01	TTFRYQFNAT	HTGTHFWHSH	SGMQRADGAA	GAFIVRKPKS	QDPHGHLYDY	DRTDHVMIVT
BmLac2	NTFRYQWQG-	NAGTHFWHAH	TGLQKLDGLY	GSIVVRQPPS	KDPNSHLYDY	DLTTHVMLIS
MsLac1	TTFRYQFTAR	HSGTHFWHSH	SGMQRADGAA	GAFIIRKPKS	QEPYESLYDY	DRSDHVMIVT
MsLac2	NTFRYQWQG-	NAGTHFWHAH	TGLQKLDGLY	GSIVVRQPPS	KDPNSHLYDY	DLTTHVMLIS
TcLac1	MTFRYHFNH	NSGTHFWHSH	SGFQRSDDGTF	GPFIVRVPEE	DNPHAKLYDY	DLSSHVITIL
TcLac2A	NTFRYQWIAG	NAGTHFWHAH	TGLQKMDGLY	GSVIRQPPA	KDPNSHLYDY	DLTTHVMLLS
ApLOC100165676	SSFRYVYLAD	NEGTHFWHSH	SGCQRGDGAF	GSFVVRAPKS	RDVHRDMYDV	DV--HVITVT
ApLOC100164049	NTFRYQFDT-	NSGTHFWHAH	SGLQKIDGIY	GSIVVRQPPS	QDPNSHLYDY	DLTTHVLLS
PhPHUM024710	SSFLYKFYAD	SPGTHIWHAH	SAFQRGDGIY	GGLVVRVPPE	ENRHLSLYDF	ELSEHVFTVM
PhPHUM554290	NTFRYQWNAE	NAGTHFWHAH	TGLHKLGLY	GSIVIRQAPS	KDPNSHLYDY	DLTTHVMLLS
AgMCORP	TRFQYKFQAD	RAGTHLYHGF	AGSERTQGLL	GAFFVRSAYE	QRQSPVLSAL	-HNDPVWLVT
TcMCORP	TTFQYKFRVT	SPGTHLYQAF	SDSELDRGLF	GALIVRQAEK	NDLQRKYDY	DSRNHIIMIS
AaMCORP	TTFQYKFQAN	RVGTHLYYGF	SNDERKLGLI	GALLVRSVHE	QSQHPLTSQC	-QDDLIWLIS
CqMCORP	TTFQYKFQAD	HVGTHLYHGF	SAEERGLGLV	GAFFVVRSEHE	QRIHPVTSGC	HQQELVWIIA
BmMCORP	TTFQYKFRAS	AVGTHMYHAH	SAADAADGLA	GALVVRQSPR	QDPLRKLYDT	DASEHTIYVS
MsMCORP	TTFQYKFRAS	AVGTHMYHAH	SAADAADGLA	GALIVRQSKR	MDPLSKLYDI	DSTEHTIFVS
CfMCORP	TTFQYKFRAS	MPGTHLWHAH	AGADITNGIF	GALIVKQADL	REPHRALYDI	DDPNHVVLVT
MrMCORP	TTFQYKFRAS	VAGTHLWHAH	AGADVTNGIF	GALIVKQADI	KDPHRSLYDI	DDSNHVVLVS
PhMCORP	TTFQYKFRAS	EPGTHIWQVN	TGEEYLDTLF	GPLIVKKPYS	KEINKNYDY	DDKKNVVVIH
BtMCORP	TTFQYKFRAS	SAGTHLWHAH	AGADVTNGIF	GALIVKQADI	KDPHRALYDI	DDSDHVVLVS
BiMCORP	TTFQYKFRAS	SAGTHLWHAH	AGADVTNGIF	GALIVKQADI	KDPHRALYDI	DDSNHVVLVS
ApMCORP	TTFQYKFRAA	QAGTHWWQIL	SGDELSDRVY	GSFIVKQSKR	REPHASIYDY	DEIPHVLLVE
HsMCORP	TTFQYKFRAS	VPGTHLWHAH	AGADVSNGIF	GALVVKQADL	REPHRALYDI	DDLNVHVLVT
DpMCORP*	TTFQYKFRAS	AVGTHMYHAH	SAADAADGLA	GAFFVVRQSPR	LDPLASLYDV	DATDHTIFVA
AfMCORP	TTFQYKFRAS	AAGTHLWHAH	AGDDVSNGIF	GALIVKQADI	RDPHRALYDI	DDPSHVILVS
DpMCORP	TTFQYKFRAS	KPGTHFYHAY	MDADRSNGLF	GALIVRKSDR	TEPSKKMYDV	DSKDHYILIS

						
	185	195	205	215	225	235
AgMC01	DLLINGRGKH	VDKGRRYRFR	LINAEFLNCP	VELSIENHNL	TVIASDGFGI	QPLGSFVSYA
AgMC02A	DLLINGKGQT	ITPGRRYRFR	MINAFASVCP	AQVTIEGHAL	TVIATDGEPV	HPVNTIISFS
AgMC03	DLLINGKGTT	VRRGARFRFR	FINAASHVCP	LQLQIEDHMM	EVIASDSFHL	QPVDTLVSTS
AgMC04	DILINGRGRR	VKKGYYRFR	LVSSGSQFCP	FQLQIEKHRM	QLIVTDGGAV	QPVDTLISTS
AgMC05	DILINGRGRR	VEYGKRYRFR	LISSSQYCP	FQMQUIQNHS	LIISTDGGTV	QPVDTLVSIS
AaAAEL007802	DILINGRGKH	VEPKKRYRFR	LINAEFLNCP	VELSVEGHNL	TVISSDSFDI	NPLASIVSYA
AaAAY29698	DLLINGKGQT	ITPGRRYRFR	MINAFASVCP	AQVTIEGHGL	TVIATDGEPV	LPVNTIISFS
AaAAEL001667	DLLINGRGTR	VRKGGRYRFR	FINAASHVCP	LELQIANHTL	EIIASDSYNL	QPANTLVTTT
AaAAEL001632	DILINGRGRR	VEQWKRYRFR	MISSGSQFCP	FQLQIEAHRM	QIISTDGGAV	QPVDTVISTS
AaAAEL001640	DILINGRGRR	VRRNYRYRFR	LISGSQYCP	FQLQIENHRM	LVISTDGGAV	KPVDTLISIS
AaAAEL001672	DILVNGRGR-	-----	-----	---NIEKHQK	TIISTDGGAV	KPVDTLISIS
AmLOC724890	DILINGLGRT	VKQNTYRFR	LVNAEFLNCP	IEISIDNHTM	RVISSDGRDI	EAAESLVSYA
AmLOC410365	DVLINGKGQT	ITPGRRYRFR	LINSFGSVCP	SQITFEGHSL	TIIATDGEAV	QPVDTIISFS
AmLOC552811	DILINGLGNT	VKKGERHRIR	MINSFSTVCL	TELRIEKHKL	IIIAQDGENV	KPVDKIVTST
DmMC01	DLLVNGKGRT	VRRGFRYRFR	IINAEYLNCP	IVVSIDGHNL	TAINSDGFDI	EAVGSIVTYS
DmLac2	DMLINGKGQT	ITPGRRYRFR	MINAFASVCP	AQVTIEGHGM	TVIATDGEPV	HPVNTIISFS
DmMC03	DILVNGKGRR	VTPGYRYRMR	VILNGIANCP	VEFSIEQHRL	LMISTDGNDI	EPADGFFLTS
DmCG32557	DILINGRGRP	VVRGGRYRFR	VIFNGVSNCP	ISFSIDKHDL	VVIASDGNDI	EPVQRIMFHG
BmMC01	DLLINGVGRN	VEQGHRYRFR	VINAEFLNCP	IELSVDGHNI	TVISSDGYDL	EPATSLVTYA
BmLac2	DVLINGKGQT	ITPGRRYRFR	MINAFASVCP	AQITFEGHNL	TVIATDGEPV	QPVNTIISFS
MsLac1	DLLINGVGRN	VEQGYRYRFR	VINAEFLNCP	IEMSVDGHNI	TVIASDGYDL	EPATSLVTYA
MsLac2	DVLINGKGQT	ITAGRRYRFR	MINAFASVCP	AQVTFEGHNL	TVIATDGEPV	QPVNTIISFS
TcLac1	DILVNGFGRT	VEQGYRYRFR	VINAGFLNCP	IEVSIDNHTL	SVISTDGSDF	NAVDSLVTYA
TcLac2A	DLLINGKGQT	ITPGRRYRFR	MINSFASVCP	AQLTIQGHDL	TLIATDGEPV	HPVNTIISFS
ApLOC100165676	DILINGRGRN	VTRGKRYRFR	LINAGFLNCP	ISMSIDNHTF	TVIATDGYNV	QPVDSFVSYA
ApLOC100164049	DLLINGKGQT	ITPGRRYRFR	MINALASVCP	AQITIQGHPL	VLIATDGEPV	QPVNTIISFS
PhPHUM024710	DLLINGKGRT	VKQGYRYRFR	LMNTGFLNCP	IEMSIDEHNI	TVISSDGEDL	QPTVSLVSLA
PhPHUM554290	DLLINGKGQT	ITPGRRYRFR	MINSMASVCP	VQLTIQGHSL	ILIATDGEPV	HPVNTIISFS
AgMCORP	ELGVNGQRD-	LNGTLNLRVR	LTYAV---CQ	HWLELEDHRL	QVLALDGNVL	DHVSRIILLHD
TcMCORP	EVLVNGKG-T	VKRNKRYRFR	VAFAGNSGCP	VTLTVDNHLI	KVIALDGNLV	FPVTSVVLTK
AaMCORP	EFLINGNRS-	VQPKSRYRLR	VAYAANH-CQ	RWLEIQDHNL	TVIALDGNLV	EPVERVALSD
CqMCORP	ELSINGRRS-	AKPGLRYRLR	VAFVSPEGCQ	HWLEVDQHRL	TVIALDGNLL	EPVERVALSD
BmMCORP	ELLINGKGKS	VEYGKRYRFR	LAYGGSKSCP	IQFSIEKHVL	TLVALDNGNI	EPVNSIELGR
MsMCORP	ELLINGKGRT	VEHGKRYRFR	LGYGGSKSCP	IRFSIEKHVL	ELVALDGNRI	STVNSIGLGR
CfMCORP	HLLINGRGRT	VIPGRRHRFR	VANAGAGACP	VTLFIDSHTL	LLIALDGHPI	EPVTSITLAK
MrMCORP	QLLINGRGRT	VVPGRRHRFR	IANAGAGSCP	ITISVDAHPL	LLIALDGQPV	EPVTSITLAK
PhMCORP	TLLINGKTQN	VTAGKRHRFR	VIYVGEKNCQ	IRFSIDEHKF	FVIGFDGKSI	QPVTSVKLFP
BtMCORP	QLLVNGRGRT	VIPGRRHRFR	VANAGAGSCP	ITISVDAHPL	LLIALDGQPV	EPIASITLAK
BiMCORP	QLLVNGRGRT	VIPGRRHRFR	VANAGAGSCP	ITISVDAHPL	LLIALDGQPV	EPIASITLAK
ApMCORP	YMRINGVEST	VQSNSKYRFR	TINTGVSQCP	IEIKVHKHHL	TVIAIDGHAI	EPVDVIQVEP
HsMCORP	QLLINGKGRT	VVPGRRHRFR	VANAGAGACP	VTLFIDGHSL	LLIALDGHPI	EPVTSITLAK
DpMCORP*	ELLINGKGKN	VEYGKRYRFR	LAYGGFKSCP	INFSIDKHAI	KLVALDGHII	QTVTSIELGR
AfMCORP	QLLVNGRGRT	VLPGRRYRFR	LANAGAGSCP	ITVLLDAHPL	LLIGLDGQPV	EPVASITLAK
DpMCORP	ELLVNGKA-N	VKPGRRRHRFR	VAYTSLSGCP	VNLTVDNHLL	KIIELDGNPT	NPVSSIRISK

						
	245	255	265	275	285	295
AgMC01	GERFDFIVKA	NQPIGNYLIR	FRGLMDCDER	FTSAYQFAVL	RYRGAPT--A	PGVQLNSLNR
AgMC02A	GERYDFVITA	DQPVGAYWIQ	LRGLGECG--	IKRAQQAIL	RYARGP---P	QGVVMNPLD-
AgMC03	GERYDFVLEA	NGVKDTYWVR	LRLSGPCA--	DLQLEQFAVL	RYTTG--PFR	NVATANHPN-
AgMC04	GERYDFVLSA	NQKPGTYWVR	VRAIGFCN--	IERREEFAVL	SYEDEAHHVP	SGTVLNNPN-
AgMC05	GERYDFVLTA	NQPPGNYWVR	VRGIGFCD--	QMRVEDFAIL	SYRTPETAIP	DGIVFNHQT-
AaAAEL007802	GERFDFILRA	NQPVGNLYMR	FRGLMDCDER	FTSAYQVAVL	RYKGAP---L	EGMQLNSLNR
AaAAY29698	GERYDFVISA	DQQVGAYWIQ	LRGLGECG--	IKRAQQAIL	RYARGP---P	QGVVLNPLD-
AaAAEL001667	GERYDFVVNA	DQPTDDYWIR	LRAIGPCD--	YRQISQVAVL	SYQPMSPVEL	NDVYVNHNP-
AaAAEL001632	GERYDFVLHA	DQKPGDYWVR	VRAVGFCN--	IQRKEEFAVL	SYRSSSE-IP	DGMTLNHPN-
AaAAEL001640	GERYDFVINA	DQPVGNYWVR	VRGAGFCS--	TLSVETFAIL	SYADPSISTP	MGQTLNEQT-
AaAAEL001672	GERYDFVLTA	NQPPGNYWVR	VRGIGFCN--	SQRVEGLAIL	SYADSSIPTP	LGRTLNNHM-
AmLOC724890	GERFDFVET	SQNIDNFWIR	FRGLMDCDER	FTKAYQVAIL	RYEGATN--T	DGQRINALNE
AmLOC410365	GERYDFVINA	DQPVGAYWIQ	VRLSGECG--	IPRAQQAIL	RYARGP---P	QGVVLNPLD-
AmLOC552811	GERVDFILVA	NQSVDSYWIQ	ARGLGECA--	TTFMQQAIL	KYENGP----	DGVIYNGLNG
DmMC01	GERFDFVLNA	NLEVGNWYIR	LKGLMDCSEV	FTSAFQVAIL	RYEGAPD---E	EGIELNVNMR
DmLac2	GERYDFVISA	DQPVGAYWIQ	LRGLGECG--	IRRAQQAIL	RYARGP---P	QGVVMNPLD-
DmMC03	AERFDFVLEA	NQYKKNWYIR	IKGYEQCE--	NRNIYQGAFL	SYRGSARS-E	DLILVNDFRF
DmCG32557	AERFDFVLHA	NQEVSNWYIR	VKGYSFCA--	KNQLHQEAVL	HYRDADTR-A	PGKTLNELGD
BmMC01	GERYDFILDA	NNEIDNYWIR	FRGLMDCDEV	FTKAKQVGV	HYEGAME--N	EGLQLNALNK
BmLac2	GERYDFVIEA	NNIPGAYWIQ	VRGLGECG--	IKRAQQAIL	RYARGP---P	QGVVMNPLD-
MsLac1	GERYDFILDA	NNEIDNYWIR	FRGLMDCDEI	YTRAKQVAVL	HYEGAMD--N	EGLQLNALNK
MsLac2	GERYDFVIEA	NNIPGAYWIQ	VRGLGECG--	IKRAQQAIL	RYARGP---P	QGVVMNPLD-
TcLac1	GERFDFIVTA	DQPQDVYWMH	FRGLMDCDER	FTRAYQVAVL	EYKGTQT--R	EGKQLNPLNK
TcLac2A	GERYDFVINA	DQTPGAYWIQ	LRGLGECG--	IRRQQAIL	RYAKGP---P	QGVVLNPLD-
ApLOC100165676	GERWDFVVEA	TANVGNYWMR	FRGLMDCDER	FTKAFVSVIL	HYDGAGD--H	SGIQLNALNK
ApLOC100164049	GERYDFIINA	EQPVGAYWIQ	VRGLGECG--	NKRVQQAIL	RYARGP---P	QGVVMNPLD-
PhPHUM024710	GERFDFVVEA	NKKIDNYWIR	FKGLLDCK--K	FKEAYQTAIL	HYDGADID-R	TGLQVNVKNS
PhPHUM554290	-----	----AYWIQ	ARGLGECG--	IARAQQAVL	RYARGP---P	QGVVLNPLD-
AgMCORP	GVRMDVALTR	L---RDYEIR	FTPHGTTSSC	GRAVFRLHYD	AERAAANDAH	RSEELQLDLT
TcMCORP	GERLDFVLKT	DQKIKRHYVR	VKS--CLG--	----EGLALL	NYELG-----	-----RVL
AaMCORP	GNRVDLIVHT	N---QDYEIR	LVATGDSPRS	-----VYT	GYNSECHLG	STNNFRLKYV
CqMCORP	GDRIDLILET	SGAGQEYER	LVSAS----	-----YN	G-SCEQHL-	SSSRFKLKYV
BmMCORP	GERVDFILEA	KRAPGVYKMS	VVAHPDCQD-	-N-LKGVAEL	VYTNK----L	NKVYRKFTSV
MsMCORP	GERADFLVLEA	KMIPGVYKIS	VIADESCQN-	-N-LEGIAEL	VYYKN----N	EHVTREFTTV
CfMCORP	GLRADFLVKA	SKHVASYWMN	VHTTKECGT-	-STINGAAIL	NYKGS-SEII	GMNQLAAMTN
MrMCORP	GERADIVLKA	NKRVASYWMH	VHTSKECGT-	-SPINGAAIL	SYKGSTMET	S--RVTMTTN
PhMCORP	GERFDFVLSA	NQKMASYMK	ATPVQCLN--	--LLSTSALI	QYEGNEKNP	EFFEISTSTFD
BtMCORP	GERADFLVKA	NKRVASYWMN	VHTSKECAV-	-SPINGAAIL	EYKGSSTKDV	G---VAMTTN
BiMCORP	GERGDFVLKA	NKRVASYWMN	VYTSKECAI-	-SPINGAAIL	EYKGSSTKDV	G---VAMTTN
ApMCORP	GETLDFILTT	IKNQGIYDMT	VTSEGHCK--	DSNHTHTLYI	HYNSTLYN--	---TISDTDN
HsMCORP	G-RADFLVLA	SQRIGSYWMH	VHTAKECGT-	-STVNGAAVL	NYKGS-TEVV	ETTRLAAMTN
DpMCORP*	GERADFILDA	NQAIGVYKIR	VVADKSCQD-	-D-LEGEAEL	IYKNQ----D	STINRIFSTV
AfMCORP	GNRADFLVKA	NKRIASYWIN	VHASKECGT-	-SPINGAAIL	SYKGSSTEDS	ND-RVAMTTN
DpMCORP	GERIDFILKA	SQEIGAYYLS	VKS--SCES-	-SDLHGLAVI	NYEGR----G	EKNTKLKRHF

						
	305	315	325	335	345	355
AgMC01	GP--GAENVI	TIAETSALDQ	ED--LLLLRN	ETDYKFYVYY	DFYGKDNPHQ	QVVNNTNRLY
AgMC02A	AQCNVQRDD-	AICVSQLKNA	KE-DRALLQD	KPDVKIFLPF	RFYLYRPEEF	LVAPTG-DHV
AgMC03	ATCGRPEFG-	DYCITDFQAY	DT-DEDVING	VPDHQLTFGF	YNYPVSFESY	MNIYGS-VMM
AgMC04	ATCYVPGDD-	DLCVADLESH	EVHDDDLIDA	APNKTFRILF	NTFTADPAVY	MTVVLT-LNN
AgMC05	APCYTPNDT-	YICAADLEAY	EVFDTGLIDA	VPDRTFFLGF	HVIEANNSLY	ATVREG-FNT
AaAAEL007802	GT--GHSDTM	SIAETSSRDQ	ED--LLLLRE	KTDFKFYVYY	DFYAKDNPHK	DVINNTNRLF
AaAAY29698	AQCNVQRDD-	AICVSQLKNA	KD-DRALLQE	KPDVKIFLPF	RFYLYRPEEF	LVAPTG-DHV
AaAAEL001667	TTCGVSKP--	DVCITDFQAY	ET-DDDVING	VPDMQFILGF	ENYPMKFEDF	MNIHDD-IVL
AaAAEL001632	STCYQPGDQ-	FVCASDLEAH	EVQDDALIDA	VPDKKFYVAF	NTFTADTSLY	MTVALT-LNN
AaAAEL001640	ATCYNSEDQ-	FTCAADLETH	EAHDDKLINA	TPDVRLFLGF	KMMHPDNRWF	ITVRED-FNT
AaAAEL001672	TECYKEGDD-	FTCAADLEAH	EVHDELIDIS	HPDVRLFLGF	KVIEANNSMY	ATVRNK-FNT
AmLOC724890	GT--ETNNSI	SIPLLKAMDK	ND---KSNTA	DPDYQFYVSY	DFYKKDNPHN	QVKN-TKQVL
AmLOC410365	AICNRQRED-	AICVSQLKNA	RQ-DQGILQQ	RPDVKIFLPF	RFLFYRPEEF	LVAPTG-DHV
AmLOC552811	TLCNTNITEP	VLCINQLESL	ES-ND-LLKV	EPDERHILPF	WFFNYTDTSF	FNANDR-SQL
DmMC01	GP--GYPTDK	TVAEMRALPI	YDHDHDTLKP	EADYKFFIYY	DFYTKNNPDD	MEMTQQNRLY
DmLac2	AQCNRQRND-	AICVSQLKNA	LE-DRGILAE	KPDVKIFLPF	RFFVYRAEDF	LVAPTG-DHV
DmMC03	KP----ANST	AISSLRQSLD	KD-----N	NVGTVALRSV	DPVPWTRYTG	SRTAPNGE-V
DmCG32557	DA----SGAR	AG-----	-----N	SISLANLNAQ	RPEPEVAPSN	AFEVRQGEGF
BmMC01	GE--EEDETI	SVAEMKSLDG	YD---ESLKE	IADYQFYVAY	DFYAKNNSHY	QVPEKVNRLY
BmLac2	ARCNISRND-	AICVSQLKNA	QN-DPAILQE	RPDVKIFLPF	RFFVYRPEMY	LVAPGG-DHV
MsLac1	GE--EENETI	SVAEMRSLAG	YD---DSLKE	IADYQFYIAY	DFYAKNNSHY	QVPEQVNRLY
MsLac2	ARCNILRND-	AICVSQLKNA	KH-DPAILQE	RPDIKIFLPF	RFFVYGPETY	LVAPSG-DHV
TcLac1	GT-EADSSFV	TLPQLHSLDE	WD---DTLKE	KADFQYYVSY	DFYKMNHVPV	NVTNTTLQNL
TcLac2A	ARCNEIRPD-	AICVSQLKNA	LS-DKGILRE	KPDVKIFLPF	RFHIYTPEDH	LVAPNG-DHV
ApLOC100165676	GSGLMDTATV	SELEDATPPK	ND---LRLEK	KPDVTLFMSY	DFYSLDNPHK	QVTHRSEQVY
ApLOC100164049	AVCDRPRTD-	AICVNQLKNA	KV-DKGLLQE	RPDVKIFLPF	KFLFYRPEDEY	LVAPGGGDHV
PhPHUM024710	RG--GHENYL	IISELSSLPD	KYQ--PALKP	EPDFRFYIPF	DFYPLSDSYP	----GTQRPG
PhPHUM554290	AVCNRERSD-	AVCVSQLKNA	KP-DEGILQQ	RPDVKIFLPF	RFLFYRPEEY	LVAPSG-DHV
AgMCORP	GTACGDTMLC	P-----QDL	PG-LPKDLQH	GYDTRLEFTI	GTRQQAGTG-	--FGEPTHET
TcMCORP	DTSLSHSQIG	KVCLSDLNFB	EKM-ETVK--	TAPKTVYLSL	GSQIVN----	--VSGNFGSR
AaMCORP	RSETADSTLP	P-----SGA	TGDFPPELRE	-VERQISLVL	-TKRKVERQ-	--FGERFYDV
CqMCORP	GTEAAGTQIL	MKEPDDAGDA	RGTFFPAELRD	-VDKTIIRLVL	-TKRAVQRE-	--LGELFQDI
BmMCORP	ISVQCEDE-S	VLCLTEARGY	EQM-SELTKT	-PDRTLYVPF	NYSTRRISA-	-RVESWGQS-
MsMCORP	FSDRCTAE-N	VLCLTDVHSL	DKL-ADLVSY	-PDKIIYVPF	NYSTRQISA-	-RVESWGQT-
CfMCORP	PIEKCGGQ-E	SLCVMDMQNI	RKM-RALAMP	KMDVTLYLPI	NYKM-QATE-	-IGNRGTETR
MrMCORP	PAEKCENP-E	SLCVTEIQAL	RKI-SVLAKP	RTDVTIRLPI	NYKF-QAND-	-VVN-GAETR
PhMCORP	EDCKSDEFS-	RICIQNIRSY	EKI-KELAIE	KPDFKYLLII	DSTMSTNHN-	--IGMKETVR
BtMCORP	PAACKCENP-E	SLCVTELHAL	RKI-AALGQP	KTDVTIRLPI	NYKL-QTSD-	-VGNSGVEMR
BiMCORP	PAACKCENP-E	SLCVTELHAL	RKI-AALGKP	KTDVTIRLPI	NYKL-QTND-	-VGNSGVEMR
ApMCORP	LAKPAEYGER	HLSITSLSL	PY---ELSAV	ELKNTIYLG	SSIKYQLGE-	-----SWS
HsMCORP	PVDKCGGR-E	NLCVMDVQNV	RKM-HVLAKP	RMDVTMYLPI	NYRVNQETE-	-IDN-GGATR
DpMCORP*	ASDNCVSD-T	VLCLDEIHGA	EKL-SELAEP	-VDEVLYVPF	NYSTRQMSA-	-RFESWGQT-
AfMCORP	PADKCGNP-G	SLCVTELHSL	RKM-SGLGKQ	KTDVTVRLPI	NYKL-QTSD-	-VGERFVGTR
DpMCORP	DTSLCRTESG	KVCLGDVKS	LKM-KELRKE	TVDRNIFLAI	DYKYGERET-	-EQYADLRKK

						
	365	375	385	395	405	415
AgMC01	TPQLNHISMR	MPPVPFLP-C	SHVLQIPLHA	TVEMVMIDNH	PFHLHGHAFR	VVGMDRVSRN
AgMC02A	ISLIDEISYL	SAPAPLLSQC	THKVDIPLNA	IVEVVLVDSH	PFHLHGYAYN	VVGIGR-SPD
AgMC03	QGAINNISLA	YPPFSLLTQC	THRVKINLGD	IVELYILDNH	PFHLHGYQMF	VMEMSQDRRV
AgMC04	IGVTNNISMV	FPDFPLLTQC	LHRLKVALND	VVEMSLIDYH	PFHLHGHRFI	VTGMGQLP-Q
AgMC05	IGATNMISFV	PPSFPLLIQC	THRMKVKHND	VIEIVLYDYH	PFHLHGHRFI	VTDSGSFSPD
AaAAEL007802	TPQLNHISMR	MPKIPMMP-C	SHVVQVPLNS	TVEMVLIDNH	PFHLHGHAFR	VVGMERLAGN
AaAAY29698	ISLIDEISYL	SAPAPLLSQC	THKVDIPLNA	IVEVVLVDSH	PFHLHGYAYN	VIGIGR-SPD
AaAAEL001667	QGAINNISFT	YPPFSLLTQC	IHRLKIPLHA	LVELYILDNH	PFHLHGYQMY	VMEMGQDRST
AaAAEL001632	IGITNNISMV	YPSFPPLTQC	VHRLKVDLND	IVEMSLIDYH	PFHLHGHRFI	VTGMGQLPTR
AaAAEL001640	IAAANNISFR	YPSFPPLIQC	THRIKVKLND	IVELTLYDYH	PFHIHGHRFI	ITDMGRLPES
AaAAEL001672	IGVANNISFI	SPSFPLLIQC	THRLKVKHNV	LVEFVLYDYH	PFHLHGHRFI	ITDMGMPLDE
AmLOC724890	TPQLNHISMK	LPPMPLLS-C	THVLRVNLD	VVEIILVDNH	PFHLHGYQFR	VIAMERIGEN
AmLOC410365	ISLVDEISFT	FPPAPPLSQC	THQVDIPHNA	VVEVVLVDSH	PFHLHGYAFN	VIGIGR-SPD
AmLOC552811	LSIFNDIAYE	NPASNLLTQC	AQIIKTKLNN	VVELVMYDDH	PFHLHGFAFQ	VFSVGQFWPI
DmMC01	TPQLNHITLN	FPSLALLP-C	HHVLQVPLGA	VVEMIIVDNH	PFHLHGNAFR	VMGLERLGEN
DmLac2	ISLIDEISYL	SAPAPLTSQC	THKIDIPLNA	IVEVVLVDSH	PFHLHGYGFS	VIGIGR-SPD
DmMC03	LFQISDISYN	SPGISLLQGC	VNVMRLPAYR	PLEMVVANTH	PFHIHGFTFR	LVGQGVVLGNL
DmCG32557	RFQMDDISFS	MPKMSLLQTC	SNVIQVPANQ	QVEFVISSPH	PIHLHGYTFR	VVGMGVLGEQ
BmMC01	TPQLNHISMK	MPSSPLL-C	SHVLSVKLNS	VVEVIVDNH	PFHLHGHSFR	VVGLRRLASD
BmLac2	ISLIDEISYM	SPPAPPLISQC	THKVDIPLNA	VVEIVLVDSH	PFHLHGYSYN	VIGIGR-SPD
MsLac1	TPQLNHISMK	MPTSPLLI-C	PHVLSVKLNA	IVEVIIVDNH	PFHLHGHSFR	VVGLRRLNRT
MsLac2	ISLIDEISYM	SPPAPPLSQC	THKVDIPLNA	VVEIVLVDSH	PFHLHGYAYN	VIGIGR-SPD
TcLac1	TPQLNYISMK	LQSFPLLS-C	THVNIPLGT	VVEMVLIDNH	PFHLHGHSFR	VVAMERVGSH
TcLac2A	ISLIDEISYM	APPAPPLISQC	THKVDIPLNA	IVEIVLVDSH	PFHLHGYAFN	VIGIGR-SPD
ApLOC100165676	TPQINKMSFK	LPSFPLLS-C	TNIIKVP LGS	IVELFLIDNH	PFHLHGHPFR	VVAMERVGNH
ApLOC100164049	ISLVDEISYT	SPGSPMISQC	SHKVDIPRHA	VVEVVLVDSH	PFHLHGYSFN	VIGMGR-SPD
PhPHUM024710	TPQLNHISME	FPSFPIMT-C	IHVLQVPIDS	VVEIVLIDNH	PFHLHGKIFR	VLGMDRLGNN
PhPHUM554290	ISLVDEISYV	APPAPPLSQC	THKVDIPLNA	VVEVVLVDSH	PFHLHGYAFN	VIGIGR-SPD
AgMCORP	VRSVNGLTFA	FPPVLMVRDC	VHVEHIEAGH	RVEMVLINDY	VYHLHGQSVF	VVA---LAGR
TcMCORP	VFGVNNLTFT	YPSSPLLTQC	VHVEHIPLRA	VAEIVLINEH	IFHLHGYRFY	VVGFRHFENA
AaMCORP	SYSVNGFSFI	YPSVLM LQRC	VHVESVELGH	RVELVIVNAY	TYHLHGYSFF	VIASRTTQH
CqMCORP	SYSVNGFSFV	FPTAVMLRKC	VHVEHVEAGH	RVELVLINDH	SYHLHGHSFY	LVG---AAHFE
BmMCORP	----DGHRT	YPASPLLTQC	VHVKNIP LYS	TVEIVMFDDH	IFHLHGYGFY	VTGVREFNRS
MsMCORP	----DGHRT	YPASPLLTQC	VHVKNIP LHS	TVEIVMFDDH	IFHLHGNSFY	VTGIREFNTS
CfMCORP	VLNVNNTFT	YPSSPLLTQC	VHVRHVPLGA	TVEIILLDDL	VYHLHGYSFY	IVGARQFGRS
MrMCORP	ILNVNNTFT	YPSSPLLTQC	VHVRYP LDS	TVEIILLDDL	VYHLHGYNFY	IVGARKFDRS
PhMCORP	IKQINNLTML	LPSSPLVSQC	VHVVKIPLNS	VVELVLVNDH	VFHLHGYSFR	IVGISKVPTF
BtMCORP	VLNVNNTFT	YPSSPLLTQC	VHVRYP LGA	TVEIILLDDL	VYHLHGYTFY	VVGARKFGRS
BiMCORP	VLNVNNTFT	YPSSPLLTQC	VHVRYP LGA	TVEIILLDDL	VYHLHGYTFY	VVGARKFGRS
ApMCORP	LPNFNNMTMV	LPSAPLLLQC	THIIDPLGS	ATELVIFDSH	SFYHLHGHSFY	VVGQKSKAFV
HsMCORP	VLNVNNTFT	FPSSPLLTQC	VHVRHVPLGA	TVEIILLDDL	VYHLHGYSFY	VVGARQFGRS
DpMCORP*	----DGHRT	YPASPLLTQC	VHVKYIPLHS	TVELIMFDDH	IFHLHGYSFY	VTDVRQMDTK
AfMCORP	VLNVNNTFT	YPSSPLLSQC	VHVRYP LGA	TVEIILLDDL	VYHLHGYTFY	VVGARKFGRS
DpMCORP	IYRINNLTFS	YPASPLLTQC	VHLEAVDLGT	SVEIMIVEEH	ILHFHGNH FY	IVGSRQFERP

						
	425	435	445	455	465	475
AgMC01	TTIEDIRRM	EAPIKDTV	PDGGYTI	IANNPGYW	H-CHIEFH	IGMSLV
AgMC02A	SNVKKINL	APPLKDT	PNNGYV	RADNPGFW	H-CHFLFH	IGMNLIL
AgMC03	PITLEIAQ	APPRKDT	PSRGYAR	RADNPGFW	H-CHYEWHT	VGMALVL
AgMC04	FGTQSEK	VPPYKDT	PSRGYTR	RADNPGFW	H-CHFEWHL	IGMSFVL
AgMC05	ILT--DQI	LPPYKDT	PNRGYVR	RADNPGFW	H-CHFEWHL	DGMGLVL
AaAAEL007802	ITAEVVKR	EAPIKDTV	PDGGYTI	IANNPGYW	H-CHIEFH	IGMSLV
AaAAY29698	SNVKKINL	APPLKDT	PNNGYV	RADNPGFW	H-CHFLFH	IGMNLIL
AaAAEL001667	PITMERAQ	APPKKDT	PSKGYTR	VADNPGFW	H-CHYEWHT	VGMVLVL
AaAAEL001632	IKHSSEKL	IPPYKDT	PSRGYTK	RADNPGFW	H-CHFEWHL	IGMSFIL
AaAAEL001640	AIN--SRL	LPPFKDT	PNEGFVK	RASNPGFW	H-CHFEWHL	TGMGLVL
AaAAEL001672	AKT--LRL	LPPYKDT	PNEGYVK	RANNAGFW	H-CHFEWHL	TGMGLVL
AmLOC724890	VTVDKVK	KAPLKDT	PDGGYTV	HANNPGYW	H-CHIEFH	VGMSLIF
AmLOC410365	KNVKKINL	APPAKDT	PNNGYV	RADNPGYW	H-CHFLFH	IGMNLIL
AmLOC552811	RNISRQD	VPPGKDT	PMGGYV	KADNPGW	H-CHFSWH	TGMELV
DmMC01	VTVEMIK	QPPVKDT	PDGGYTI	EASNPGYW	H-CHIEFH	IGMALVF
DmLac2	SSVKKINL	APPTKDT	PNNGYV	RADNPGFW	H-CHFLFH	IGMNLIL
DmMC03	NDLRNIQ	RAVAKDT	PGQGYI	ISNNPGFW	H-CHVEAH	QGMVAVL
DmCG32557	-KIGQIEQ	KAPLKDS	PAFGYT	YSNSPGYW	H-CHISPH	NGMAAV
BmMC01	TTIEEVKA	EAPIKDTV	PDGGYTV	KADNPGYW	H-CHIEFH	VGMALVF
BmLac2	QNVKKINL	APPAKDT	PNNGYV	RATNPGFW	H-CHFLFH	IGMSLV
MsLac1	TTIEEIK	EAPIKDTV	PDGGYTV	KADNPGYW	H-CHIEFH	VGMALVF
MsLac2	QNVKKINL	APPAKDT	PNSGYV	RATNPGFW	H-CHFLFH	IGMSLV
TcLac1	VNVSEIL	QAPLKDT	PDGGFTI	KATNPGYW	H-CHIEFH	VGMALVF
TcLac2A	QNVKKINL	APPAKDT	PNNGYV	RANNPGFW	H-CHFLFH	IGMNLVL
ApLOC100165676	TTVEEIEQ	RAPLKDT	PDGGFTI	LADNPGYW	H-CHIEFH	VGMATVF
ApLOC100164049	KNVKKINL	APPLKDT	PNNGYV	RADNPGYW	H-CHFLFH	IGMNLVL
PhPHUM024710	TSEDLVRR	KPPIKDT	PDGGYSI	HAINPGYW	H-CHIDFH	MGMVLL
PhPHUM554290	RNIKKINL	APPAKDT	PNNGYV	RADNPGYW	H-CHFLFH	IGMNLV
AgMCORP	PGTALGAL	QPLQRDT	RRGSTVA	VANLAGLW	RDIGSP-G	RGLDVVL
TcMCORP	PSTDEIKL	QPAIKDT	PKNSVVA	LADNPGFW	R-DEGSRG	RGLDIVL
AaMCORP	ENWQTQLL	-PVLLDT	ESNSMV	VASNAGLW	RDLDAEH	RGLDVLL
CqMCORP	EGWQHQQ	LPVRRDT	GRRSLV	VASHAGLW	RDLGAEH	RGLDVLL
BmMCORP	LSKETVIK	EPVLKDT	PKFGVVA	KADNPGYW	R-DERSTH	RGLDFIL
MsMCORP	LAKEDVIK	EPVIKDT	PKFGAVS	KADNPGYW	R-DERSTH	RGLDFIL
CfMCORP	VSLQEVKK	KPPIKDT	PKFGVVA	KADNPGYW	R-DEHAAD	RGLDVVL
MrMCORP	VSLQELKS	DTVAKDT	PKFGAVA	KANNPGYW	R-DEHSPY	RGLDVIL
PhMCORP	VATKEQIK	DPVVKDT	SSGYLV	KADNPGYW	D-EENSSH	KGLSLVF
BtMCORP	VSLHELKS	DTVAKDT	PKFGAVAL	KADNPGYW	R-DEHAAE	RGLDVIL
BiMCORP	VSLQELKS	DTVAKDT	PKFGAVAL	KADNPGYW	R-DEHAAE	RGLDVIL
ApMCORP	KSADHAKK	SSVLKNT	PAAGSVV	IADNPGYW	R-SEKTSE	SGLSLIF
HsMCORP	MSLQNI	RNLDPK	APKDTIV	PKFGAVAL	KADNPGYW	R-DEHAAD
DpMCORP*	LEKETVMK	MNQPVRK	DTIVI	PKFGAVAL	KADNPGYW	R-DERSAH
AfMCORP	VSLQELKS	MDSDTV	AKDTIV	PKFGAVAL	KANNPGYW	R-DEHAAE
DpMCORP	MSRKEIRE	LDQPVLK	DTIRI	PRFGVIL	R-LAKNPG	IWMLR-DE

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AgMC01	EMLPAPANFP TC
AgMC02A	DLPPVPPNFP TC
AgMC03	EMVKAPADFP KC
AgMC04	EMKQAPKDFP RC
AgMC05	EMLKPPANFP RC
AaAAEL007802	EMVAAPHNFP TC
AaAAY29698	DLPPVPPNFP TC
AaAAEL001667	SFVKPPAGFP TC
AaAAEL001632	QMIKTTPPGFP TC
AaAAEL001640	QMLKAPPGFP RC
AaAAEL001672	QMLKAPPDFP RC
AmLOC724890	DMLPVPRNFP LC
AmLOC410365	DLPPIPPENFP RC
AmLOC552811	DLPPIPKNFP KC
DmMC01	QMVVPVENFP TC
DmLac2	DLPPVPPGFP TC
DmMC03	QMKNI PARVR C-
DmCG32557	EMKMCPVSN- C-
BmMC01	DMPPVPREFP KC
BmLac2	DLPPVPPNFP TC
MsLac1	DMAPLPRDFP TC
MsLac2	DLPPVPPGFP TC
TcLac1	EMPPVPKDFP QC
TcLac2A	DLPPVPPNFP TC
ApLOC100165676	EMPPPPPGFP KC
ApLOC100164049	DLPPVPENFP RC
PhPHUM024710	MFKLPPDNFP KC
PhPHUM554290	DLPPVPPNFP RC
AgMCORP	PQPDIPRNFP AC
TcMCORP	DMVSTPTDFP TC
AaMCORP	TEINFPDDFP KC
CqMCORP	DEFDIPGDFP TC
BmMCORP	DLVQAPPDFP KC
MsMCORP	DFVQAPADFP KC
CfMCORP	DMIPPPQDFP KC
MrMCORP	DMASAPQDFP KC
PhMCORP	DFPNVPDNFP KC
BtMCORP	DMVPAPEDFP KC
BiMCORP	DMVPAPEDFP KC
ApMCORP	SFPQVPEDFP KC
HsMCORP	DMVAAPQDFP KC
DpMCORP*	DFVKAPADFP KC
AfMCORP	DMVPAPEDFP KC
DpMCORP	QMVSTPSNFP TC

Figure S1. Alignment of Insect MCORPs and MCOs for Phylogenetic Analysis. The amino-terminal and carboxyl-terminal ends of sequences, which are highly variable, were left out of the alignment. Sequences beginning with the cysteine rich region (11) were aligned by ClustalW in MEGA5 and adjusted by eye. Gaps were omitted in the alignment for phylogenetic analysis. Abbreviations used are: Ag, *Anopheles gambiae*; Aa, *Aedes aegypti*; Cq, *Culex quinquefasciatus*; Tc, *Tribolium castaneum*; Dp, *Dendroctonus ponderosae*; Ms, *Manduca sexta*; Bm, *Bombyx mori*; Dp*, *Danaus plexippus*; Cf, *Camponotus floridanus*; Hs, *Harpegnathos saltator*; Bt, *Bombus terrestris*; Bi, *Bombus impatiens*; Mr, *Megachile rotundata*; Af, *Apis florum*; Ap, *Acyrtosiphon pisum*; Ph, *Pediculus humanus corporis*; Dm, *Drosophila melanogaster*; Am, *Apis mellifera*.