

Additional file 7

Mariner-1_OlPv-2p
Q8G4B6_BIFLO Type II restricti
Q0AK57_MARMM Type II restricti
Q727L4_DESVH Type II restricti
Yp_001950543 Restriction endon
Yp_001045254 type II restricti
Q64Q06_BACFR Type II restricti
Yp_001454985 hypothetical prot
EGE66164.1
ZP_08701146.1
Yp_001670968.1
Q71S88_KLEPN Restriction endon
EGT83115.1
ACYO20325231

MSDYGR-----IGDYIGPVA-----AKTSAV--IDANSSNHEFGGNDALRRLLTGCDERR---ASQGHGIPAL--MYLSD-DDAPAVADLETTMYDARR
-----RLSDLFLCVA-----AKRDRAVE--AEPARSNHEFNGVAALRNMLG--DDR--TLAARF--ILLGD-DESPACDGSITMYDSRA
-----NHGHLSEQYFAVA-----CKRLSAVM--ADLCRSNHEHLNGVEALIKMFRATEKH---TFQASF--MYLCDHDEPVVADGYVTMYDSRL
M-RYGS-----LSDHFTGIV-----AKRLSTVM--ADTARSNHEFNGTNELRLRLG--GERI--ERRPSRF--IWLGG-ENEGITDDAPVTMYDARE
-----MGEILNSAIVKIQNAKYAFCRITAN--TGKNGSHCAGFYIPKCAALLFDTPG-V---KGENKDKMV--KVKWQ-DDFTTDS--RFIYYGQ--
-----MSGHLWLLDKSTSDTYMFIKRLSAN--TGATGGHGVGVIYPSGIVVHLLFSPINHT--RDLNPSVML--NAHTS-SHNCPSDEARAIYYNGRF
-----SGLDWLLDKVGGNNYVLIKRLSAN--TGATGGHGVGVIYPSGIVVHLLFSPIDHT--SEKNPSVLL--RATYS-SHECVDSVSEARAIYYNNKY
MAKMKHSTAFVDFLTFEPEAEASDFLTSLL-----DKSDSLYVKKLSVMKRDWARLSNKRKAGIYVPST-----ERDGNFPPLATKE-RDKAAAEIRETMYFEIWE
-----RLSPGK-----FKTLISKE-RKSHFIT-----
MNLTDV-----LIKTPDN-----IETFSAFIKQK-RDELISS-----

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-----NPNPSSAERRYKDK--CEPIRMARPGDLMCFGLMRNRLLIITIAQHDSTAEAAQAKWLFIGDDEQEVAFRF---HDNTERELDAFQAQFEALGINVEVRDDT-Y
-----NQPHSGPWRYYQA--NDITRAMKPGDQLFVVLVLDRTIGLACDRSSDQGLVEAIFVQHSKSEQMVIIPV--SPTSSPADYFTFQLDLDALGIEPDIPIPF-D
-----RHATR-TEYRYYFPP--CEVMTAREGDMMIVGLRREGDGMIVIGAGAGTTGESQLSWLFGLSPADGGYAVASP---ELLEQDIFGAGSYLEELGVIEAAGDDGG
-----KNTRT-TEHRRYFPT--TAVSMCAEAGDLLIKRRTDNSVMIIAEEASTIASQVSWLFGFVDPVHPGFSVRSE--LECEQNRIFEFASRILEHIGVQVEEVAEN-Y
-----RHPTR-SQWRYYFQA--NAVTEVAQAGDLLVARRSPGDMLMIVAPQSSTLENQIAWLFLGDLHGLGAGGFYEGF--EGAGDRGLDFVSNYVLEIEGIEPEVPEAD-R
-----GTR-NYRRTRFYGGK-FPFEEEDNVGDLIIAQQSEDYIYGFVLTQDDIDDFAY-FNLSPEKTNQLIDVTQ--ASTPEKQLEIGIQLVALYA
-----FGKTR-NKGRTRWGGKNLPQDPENTGALLALAFDHH-----QGSDSQFVDI-WCHNAEEEDIVESLGG--EIVFGSLVYGANEILGGLALKEPVSSG-YR
-----FGQTR-NKGRTRWGAG-SLPQDPENTGALSVLAFEH-----PGRDSKSDVWV-WCVSPPEEDVLESVAG--EIIPTGLMFGPASEILGLVLSRPKIISQKEYV
PTVGQVKRRLVHYTSKGEHHTGLP-----KPFPRDAPPASLLVVGK-SGGRYKALVWDESDEYEVVHDVLSLPPDFHSEIFITTVRREREKTVSFIIEVWRAFF-----DGT

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-----TTE---KFNNOVLSRMEANKLIK---KIIOEIKQIAPL-----
LPMEIGRQYRFSNEEFAAFS-----QSSLTVDVDPDTH-D--DQVVE-YDRSLLRKLK---RAV---QHDYDAPFVS-----DG
AASVVAQKGTPEPTATFSTLA-----RETLPLGLDP-RD-D--DKVLA-WIDR-SAMFRAL---RGI---QDRLMLGFLDS-----RG
LEHLLSTGSARPEPTAFVSTYA-----RDSLPHVSS-LD-D--DGAIVA-WFQGRERFRMF---RHL---WAQRREGG-----
LDEMLRLCGKRNTRDFSEYA-----RASLIDDP-RD-GA--DAALMA-FVEREITLFRLE---RHI---GDRLOVCG-----
LDEIVGRGAQPESSRTFSALA-----RQNLPEVDP-RD-DA--DAALMA-WIEFEGALFRLE---RHI---VAARVEVGLT-----DG
-----DPETROMAQOFARDIY-NKVHHTIDVHICK-S--DEQLK-WIDTEWGLRSPF---EKV---YAPIYSVF
LPE---EARNPESGKEIIQYA-----AAHYSPIV---T-G--DKQLTE-RRRVEGLLVE---EMH---VLGIQSGF-----
IPE---SKHSEFSGLDIIQYA-----AGYYPGV---T-S--DDQLTE-RRRIEDELMLV---EIH---VLDIRQCF-----
MPT---DLAKPEFSGLEIVEKA-----VALRPDNG---L-S--DNRMER-RRDCEELRVS---QA---ELPNFAGF-----
FPELASRFG-AMTTSSELAAARNRYLGENRLRSLDPYAMCK--GDA-RAISRGLELEIRKDYIKARS---DLARMLGDDPS-----KASLERVLR
-----FALVYKTFCDL-----GYDQKNSDYFLN-M--SEYTA-LMRNCKKPEPPEKETTMRMSYLIIDEER-K-----DMSPYDAIR
-----KDTAKKA---T--EVNQKEISTLLN-KQFSKAL-L-LEYS--QPLKEBAFNGV---LKELSKPKTPHNLEKLSNHFQNLIQEKTQFQELINTLG
-----KAL-----EAKLEQVNERNELIKELRSRLPSCN-----

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--LSVLELLOLYNKLSISHOGLIOGNFLENDILVGLLELNNI---PKKVTINKSGIIVGFNEKKGKCYHIIDVIGENIEV---GKSITPKVTSCKTQRERHODDWSYTF--
--VIDVDSF-T-SFYTSWRNRMSRAGVLEETI-AHILDAR--EEMAKTAN-----G---KEDDLFPQAQVEDPAPPEEQLRMLASKTSKDRRROVADAN--
--EPVDADF-T-KFSLVQNRKRKSRAGHLEMMF-SKILRAF--PPTPQATK-----K---GAADLFPSEAAVADPGPSANLRMVAAKTSKDRRROVADAN--
--GEVDADF-T-GYLSLVQNRKRKSRAGHLEMMF-EQVLKQGV--PPTPQATK-----N---SKEDLFPGCSEVHQTNPODQLRMLAVKTSKDRRROVADAN--
--VDVDFG-V-TYLSLVQNRKRKSRAGHLEMMF-EVFNAGQV--QTRTPVTEN-----N---SKEDLFPDPIIHRDPPEDVSKLMLGVKTSKDRRROVADAN--
--TAVDQEL-L-QFSLVQNRKRKSRAGHLEMMF-EBMLTVLGL--RARGARTG-----N---SKEDLFPQVAVADPGYADRLSMLGVKTSKDRRROVADAN--
--PQCQEL-V-KFSLVQNRKRKSRAGHLEMMF-ATFTAAQV--EMEBQAVTEG-----N---KEDDLFPNGEAVHMLPPANKLVLEKAKTKDRRROVADAN--
--GSVDF-L-ALANSVSNRKRKSRAGHLEMMF-EQVFNEL--KTETQAVTEG-----N---KEDDLFPQAQVHDEAPPEQLRMLAVKTKDRRROVADAN--
--GSVDF-L-AMANSVSNRKRKSRAGHLEMMF-EQVFNEL--HHATQVTEG-----K---KEDDLFPQAQVHDDHPPREKLRMLAVKTKDRRROVADAN--
--SSVDF-L-VRAQTLQRRKSRAGHLEMMF-RAVFIETQVENTHSHQVPSV--G---KEDDLFPQAQVQDNSPADQLRMLAVKTKDRRROVADAN--
AVVLFPKI-D-ALLSAQQRKSRAGHLEMMF-DAMLADAV--PBEKVVLRA-----R---KEDDLFPSEKAMVESSTRQCALVLEKAKTKDRRROVADAN--
DFTMYPHT-ITDLSLNTQSRKRKSRAGHLEMMF-ELMMGA--PVDVGAIGKSFQ---KNGIG--KLVDFVGVQVYTSN---KRNTMIKAKTKDRRROVADAN--
EYTGSHSY-IVQLCHSNTQSRKRKSRAGHLEMMF-YIYIYELAF--SDSAAQVKKFTT---DLGLG--KLVDSVLEGIANSR---RDLIIGTKTKDRRROVADAN--
--LLQVLEHFNFTVVSFQSKKCKIKKSEETAL-ENQLRLN--PVSVAIKCKGKIVGTGTTIKNHAHTLDILVGDSTIEHIKGEHISNYVLSCKSRERANDEWTFEH--

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IPKLI--LITLSDDYPPSTRFRDQIRKLTCTEKRKD-----DRIYKLFEN-LIEQ-----L
IRDK--LITLTPGDVTHPKLAQDELHLEHVMKVKESDLDL--IAGETMFSR-LIEE---TGLQAD-----RQSLTLL
IKPK--LITLTPK-TSLAQTENTDQGITLHLESPHSSDQD--ORASLLVAD-LIEE---LASL-----
VSRK--LITLTPG-TSVQOTTEVDHVAQVLEIRGQSSQDA--QREELISLGE-IVGM---ADANLWS-----S
IKSK--LITLTPG-TSENOTNMQKRSNOLVVEALQRTKTE--QQTWLLFDD-ITRL---IRIQS-----
IDRK--LITLTPG-TSTHCTNEMIRHSDLVVBERGHTHTPE--QAGWLMVVRG-FINL---VAAREAA-----RPHY--E
IETK--LITLTPG-TSKNOLNREKHEHKLVEBSYRTSDKE--FQPEELAS-ETEM---VKLKQSS-----KPIYS--V
IQDI--LITLTPG-TSVAQFQENQOQERVLVVESSLHDKPKA--IREYLLSET-ETDE---TK-----SLYVD--
INKI--LITLTPG-TSVAQFQENRAEGVTLVVESSPHKKPEE--IREYLLDGE-ETQ---LI-----TLYEDFV
IPRK--LITLTPG-TSVAQFQENRAEGVTLVVESSPHKKPEE--VRPHQNLGSE-ETQ---VR-----NGIFAR--T
DCDL--LITLTPG-TSVAQFQENRAEGVTLVVESSPHKKPEE--FENDIAARSKLWIA-----SLAATGV
IREM--LITLTPG-TSETINILEYAN--VVVTTENKMKYK--NNNRLLPFD-MQSAEMLSKWNNVSVTSEKEEIQRSILKQIEKYSDFVYRNRNLSALPD
IPNIR--LITLTPG-TSDNRAVQCTHNVVWVLEKQKHLK--DSSVLEFSEYLEIPNIMYWKK-----
KPKLML--LITLTPG-TSVAQFQENRAEGVTLVVESSPHKKPEE--DRIYKLFEN-LIEE---VVVVVVVENVLKLSLAV