

ONLINE SUPPLEMENTARY CONTENT

Table SI - MX3 Primer

Mix	Antigen	Forward primer	5' - 3'	reverse primer	5' - 3'	size (bp)
1	d	RH-ubox-MM-f7	GCCAACAAAACCATTTTTCTGCTAC	RH-dbox-r7	CCTTTTTCTCTTTCTGGCCTTAACATC	1727
	M	GYPA-M-72T-f1	CAGCATCAAGTACCACTGGT	GYPA-i2-r3	CAGCATCAAGTACCACTGGT	752
	k	KEL-x5-f6	TCTGGGGAGGAGAAAGCCTT	KEL2-578C-r2	CTCATCAGAAGTCTCAGCG	500
	JK1	JK1-838G-f1	GTCTTTAGCCCATTTGcGG	JK-i9-r1	CTTTTTCTATCTCCCAACATCC	398
	D exon1	RHD-x1-f3	CCATAGAGAGGCCAGCACAA	RH-x1-R	TTGATAGGATGCCACGAGCC	298
	KN1	KNA-4708G-f3	AACAGCTGTTGAGCTTG	CR1-x37-r3	ACTCTGTTCTCTGGTACTC	160
2	N	GYPA-N-72G-f4	CAGCATCAAGTACCACTGGT	GYPA-i2-r4	AGGTGACTGCGTGGACATAG	756
	KEL4	KEL4-841C-842G-f5	CAATCTCCATCACTTCACG	KEL-i9-r9	TGATCTCCCAATCCCACCT	506
	JK2	JK2-838A-f2	AGTCTTTAGCCCATTTGcGA	JK-i9-r1	CTTTTTCTATCTCCCAACATCC	398
	D exon5	RHD-i4-f1	GCACCTCAGAGCAGGTTTC	RHD-x5-r3	TTCTCAGCAGAGCAGAGTTGAA	307
	KN3	McCa-4795A-f3	CCCCTCGGTGATTTCTACTAATA	CR1-x37-r2	CTATAGTACCTCACACC	166
3	S	GYPB-i2-f4	CCTCAATCATCAAACAACATAGC	GYPB-S-127T-r1	CGATGGACAAGTTGTCCCA	729
	KEL7	KEL-x15-f1	CATTCTCCACCCTGGCTATC	KEL7-r1	GCATGGTTGTACAGGTGA	503
	DI1	DI2-f1	GTGGTGAAGTCCACGCT	DI-i19-r2	GGACTTGCTGCTTAGGGGTC	396
	D-psi	RHD-psi-x4-f2	ACTACCACATGAACCTACTGGG	RHD-i4-r1	CTTCAGACACCCAGGGGAAC	294
	KN4	KN4-x29-f1	GTTTGAGCTTGTGGGAGAACG	KN4-4801A-r2	AAACTCCTGTTCTCTGGTACaCT	153
4	VEL	VEL-f4	CTGAGTGCCGAGATGCAAAG	VEL-wt-r2	TGCTGGACACAGCCCTAG	930
	s	GYPB-i2-f4	CCTCAATCATCAAACAACATAGC	GYPB-s-127C-r1	CGATGGACAAGTTGTCCCG	729
	KEL11	KEL-i6-f	TGCCCTCAACCTTAATCC	KEL11-905T-r4	GAGCTGGTCGATAGTGA	510
	DI3	Di-i15-f1	GAAGTATCTTTGGAGCCAGG	DI3-1972A-r9	CATCATCCAGATGGGAAGCTT	405
	C	RH-C-F1	GGAGGGGCCTATCTATTCAACG	Rh-C-i2-r1	CCACTGGGAAGTGACAAAGG	286
5	Sc1	Scianna-f2	GGACCTCACTGCCTTGATCT	Sc1-196G-r3	ACCTCCTGGGTACCGTTCC	952
	Uvar	GYPB-U-i5+5t-F	TCGCCGACTGATAAAGGTGAT	GYPB-i5-r6	AAGAATTCATGGGTGGAAATTTGT	735
	K	KEL-x5-f6	TCTGGGGAGGAGAAAGCCTT	KEL1-578T-r3	ACTCATCAGAAGTCTCAGCA	501
	DI2	DI1-f1	GTGGTGAAGTCCACGCC	DI-i19-r2	GGACTTGCTGCTTAGGGGTC	396
	c	RH-307C-f1	CTTCTGAGCCAGTTCaCTC	RHCE-i2-r1	CCTGGATTCTTGATACgCA	276
	CO1	CO1-134C-f4	GAACAACCAGACGGC	CO-x1-r3	CGCACTGGGCGATGATGTA	188
6	Sc2	Scianna-f2	GGACCTCACTGCCTTGATCT	Sc2-196A-r3	ACCTCCTGGGTACCGTTCT	952
	U	GYPB-U-i5+5g-F5	TCGCCGACTGATAAAGGTGAG	GYPB-i5-r6	AAGAATTCATGGGTGGAAATTTGT	735
	KEL3	KEL3-841T-f4	GTCAATCTCCATCACTTCAT	KEL-i9-r9	TGATCTCCCAATCCCACCT	508
	DI4	Di-i15-f1	GAAGTATCTTTGGAGCCAGG	DI4-1972G-r5	ATCATCCAGATGGGAACTC	405
	Cw	RHCE-p-f2	CATAGACAGGCCAGCACAG	RHCw-x1-ir5	TGCCACGAGCCCTTTC	287
	CO2	CO2-134T-f3	GGGAACAACCAGACGGT	CO-x1-r3	CGCACTGGGCGATGATGTA	190
7	Lu1	LU1-230A-f1	CGGGAGCTCGCCCGCA	LU-i4-r2	CTCCAGCACCATCTCctGG	905
	Vw	GYPA-i2-f1	TCCGAAATCATTTTGTGATGT	GYPA-Vw-r4	GCATATGTGTCCCGTTGTACA	701
	KEL6	KEL-x15-f1	CATTCTCCACCCTGGCTATC	KEL6-r1	GCATGGTTGTACAGGTGG	503
	C4A(3567A)	C4A-x26-f2	CAGGACCCCTGTCCAGTGT	C4A-3567A-MM-r1	GCTTTCTCCCCAAAAATGcGT	397
	E	RH-E-676C-f2	TGGCCAAGTGTCAACTCTC	RHCE-x5-r2	TGTGACCACCCAGCATTCTT	312
	In2	IN2-137G-f3	CGCTACAGCATCTCTCG	IN-i2-r1	CCATTCAGCTGTGGAAAGGAGC	209

continued on next page

Table SI - MX3 Primer (continued from previous page)

Mix	Antigen	Forward primer	5' - 3'	reverse primer	5' - 3'	size (bp)
8	LU2	LU2-230G-f1	CGGGAGCTCGCCCGCG	LU-i4-r2	CTCCAGCACCATCCTCctGG	905
	FY1	FYES-p-46T-f2	TCATTAGTCCTTGGCTCTTAT	FY1-125G-r1	GCTGCTTCCAGGTTGGGAC	711
	KEL17	KEL-i6-f	TGCCCTCAACCCCTTAATCC	KEL17-905C-r5	AGCTGGTCGATAGTGG	510
	C4B(3567G)	C4B-x26-f2	CCAGGACCTCTCTCCAGTGA	C4B-3567G-MM-r1	GCTTCTCCCCCAAAAATGcGC	398
	e	RH-e-676G-f1	TGGCCAAGTGCAACTCTG	RHCE-x5-r2	TGTGACCACCCAGCATTCTT	312
	In1	IN1-137C-f2	GTCGCTACAGCATCTCTCC	IN-i2-r1	CCATTACAGCTGTGGAAAGGAGC	211
9	Lu8	LU8-611T-f4	TCTCTCCAGAGGGCTACAT	LU-i7-r1	TAGCAGGTCACAGAGGTCAG	922
	FY2	FYES-p-46T-f2	TCATTAGTCCTTGGCTCTTAT	FY2-125A-r3	AGCTGCTTCCAGGTTGGGAT	712
	C4A(3670C)	C4A-x26-f2	CAGGACCCCTGTCCAGTGT	C4A-3669TC-R	TTGTTGTGGGCAACACCGA	496
	LW7	LW2-299G-f3	GGTTGGGTGTCTTACCG	LW-x2-r1	GGTTGGGTGTCTTACCG	398
	YT1	YT1-1151(1)-s3	CATCAACGCGGAGACTgCC	YT-1409-as	GAGCCAGAGAGATGAACAGTT	300
	DO1	DO1-624T-f1	ATTCGATTGGCCAATTCTT	DO1-793A-r1	TGACCTCAACTGCAACCAGTT	210
10	Lu14	LU14-230A-f2	TCTCTCCAGAGGGCTACAA	LU-i7-r1	TAGCAGGTCACAGAGGTCAG	922
	FY mod	FYX-265T-f5	TCATGCTTTTCAGACCTCTcTCT	FYX-R	GTGGCCTGGTGGCAGAATAG	694
	C4B(3670G)	C4B-x26-f2	CCAGGACCTCTCTCCAGTGA	C4B3670G-R	AGTTGTTGTGGGCAACatCC	499
	LW5	LW5-299A-F	CCGGGTTGGGTGTCTTATCA	LW-x2-r1	GGTTGGGTGTCTTACCG	401
	YT2	YT2-1151(1)-s2	TCATCAACGCGGAGACTACA	YT-1409-as	GAGCCAGAGAGATGAACAGTT	300
	DO2	DO2-624C-f1	ATTCGATTGGCCAATTCTC	DO2-793G-r1	GACCTCAACTGCAACCAGTC	209
11	FY null	FYES-(67C)-f1	TCATTAGTCCTTGGCTCTCAC	FYES-r1	AGCTGCTTCCAGGTTGGC	711
	C4A(3258A)	C4-3258A-MM-f1	TATGCGGCTTGGTTGTGACGAGA	C4A-x26-r1	TCCTGTCTAACACTGGACAGG	343
	Hy	DO_Hy-f2	CTTAGCCTGGCTTAACCATGG	DO-Hy-x2-r	GCTGATTGCTGAGGTGAGG	203
12	Jra (706C)	Jra-706C-f3	CTTAGGATGTCTAAGCAGGTAC	Jra-i7-r1	AGTGCTCATCAAGGCAGACC	591
	C4B(3258G)	C4-3258G-MM-ATAf1	AATTAATATCGCGCTTGGTTGTCACGAGG	C4B-x26-ATA-r1	AATTAATCCTATGTACTGGAGAGA	355
	Joa	DO-Joa-f1	ATCGACTTCGACTTCGCACC	DO_Joa-350C-r1	AATAGCCACAGCGTGTGAGG	213

Table SII - AKY Primer

Mix	Antigen	Forward primer	5' - 3'	Reverse primer	5' - 3'	Size (bp)
1	1kb	GH1-x2-f1	CACCAGCTGGCCTTTGACAC	GH1-x5-r1	TGAAGCAGTAGAGCAGCCCG	993
	Aua	Lu-i11-f1	CCATGCTGTGCTCAGTTCT	Lu18-1615A-r1	CCACCTCAGTCACTCACCAGT	742
	KCAM	KCAM-f3	CTCAGTCATATCTTGTGAGCCA	KCAM-4843A-r4	GGGCTGACATCTAAATCgGAT	322
	Yka+	Yka-f2	TCTGTGATCCACCTATCAGCTT	Yka-4223C-r3	CTCAAAGTCATTAATTGGGAcCG	160
2	1kb	GH1-x2-f1	CACCAGCTGGCCTTTGACAC	GH1-x5-r1	TGAAGCAGTAGAGCAGCCCG	993
	Aub	Lu-i11-f1	CCATGCTGTGCTCAGTTCT	Lu19-1615G-r1	CCACCTCAGTCACTCACCAGC	742
	KDAS	KCAM-f3	CTCAGTCATATCTTGTGAGCCA	KCAM-4843G-r4	GGGCTGACATCTAAATCgGAC	322
	Yka-	Yka-f2	TCTGTGATCCACCTATCAGCTT	Yka-4223T-r1	CTCAAAGTCATTAATTGGGAcCA	160