

	10	20	30	40	50	60	70	80	90
NC013590.2 (C-27)-Reference	MMTRLHFWWC	GIXCGPEISG	MYFKPYDHAK	NNYGLCE--X	DLIX---XST	TLQLYSSQX-	XRAKNSPGDG	--SEDNS*ST	LCNINGFMWD
OL410296.1 Marial vaccine				----	----	-		--.....*	
KR296657.1 Virbac vaccine				----	----	-		--.....*	
KR381803.1 Intervet vaccine				----	----	-		--.....*	
MH070348.1 (KANS-02)				----	----	-		--.....*	
OR504706.1 This study				----	----	-		--.....*	
OR504707.1 This study				----	----	-		--.....*	
OR504708.1 This study				----	----	-		--.....*	
OR504709.1 This study				----	----	-		--.....*	
OR504710.1 This study				----	----	-		--.....*	
OR504711.1 This study				----	----	-		--.....*	
OR504712.1 This study				----	----	-		--.....*	
OR504713.1 This study				----	----	-		--.....*	
OR504714.1 This study				----	----	-		--.....*	
OR504715.1 This study				----	----	-		--.....*	
OR504716.1 This study				----	----	-		--.....*	

	10	20	30	40	50	60	70	80	90
NC013590.2 (C-27)-Reference	MMTRLHFWWC	GIXCGPEISG	MYFKPYDHAK	NNYGLCE--X	DLIX---XST	TLQLYSSQX-	XRAKNSPGDG	--SEDNS*ST	LCNINGFMWD
OL410296.1 Marial vaccine				----	----	-		--.....*	
KR296657.1 Virbac vaccine				----	----	-		--.....*	
KR381803.1 Intervet vaccine				----	----	-		--.....*	
MH070348.1 (KANS-02)				----	----	-		--.....*	
OR504717.1 This study				----	----	-		--.....*	
OR504718.1 This study				----	----	-		--.....*	
OR504719.1 This study				----	----	-		--.....*	
OR504720.1 This study				----	----	-		--.....*	
OR504721.1 This study				----	----	-		--.....*	
OR504722.1 This study		.T.		----	----	-		--.....*	
OR504723.1 This study		.T.		----	----	-		--.....*	
OR504724.1 This study				----	----	-		--.....*	
OR504725.1 This study				----	----	-		--.....*	
OR504726.1 This study				----	----	-		--.....*	
OR504727.1 This study				----	----	-		--.....*	

	10	20	30	40	50	60	70	80	90
NC013590.2 (C-27)-Reference	MMTRLHFWWC	GIXCGPEISG	MYFKPYDHAK	NNYGLCE--X	DLIX---XST	TLQLYSSQX-	XRAKNSPGDG	--SEDNS*ST	LCNINGFMWD
OL410296.1 Marial vaccine								*	
KR296657.1 Virbac vaccine								*	
KR381803.1 Intervet vaccine								*	
MH070348.1 (KANS-02)								*	
OR504728.1 This study								*	
OR504729.1 This study								*	
OR504730.1 This study								*	
OR504731.1 This study								*	
OR504732.1 This study								*	
OR504733.1 This study								*	
OR504734.1 This study								*	
OR504735.1 This study								*	
OR504736.1 This study								*	
OR504737.1 This study								*	
OR504738.1 This study								*	

	10	20	30	40	50	60	70	80	90
NC013590.2 (C-27)-Reference	MMTRLHFWWC	GIXCGPEISG	MYFKPYDHAK	NNYGLCE--X	DLIX---XST	TLQLYSSQX-	XRAKNSPGDG	--SEDNS*ST	LCNINGFMWD
OL410296.1 Marial vaccine								*	
KR296657.1 Virbac vaccine								*	
KR381803.1 Intervet vaccine								*	
MH070348.1 (KANS-02)								*	
OR504739.1 This study								*	
OR504740.1 This study								*	
OR504741.1 This study								*	
OR504742.1 This study								*	
OR504743.1 This study								*	
OR504744.1 This study								*	
OR504745.1 This study								*	
OR504746.1 This study								*	
OR504747.1 This study								*	
OR504748.1 This study								*	

	100	110	120	130	140	150	160	170	180
NC013590.2 (C-27)-Reference	GGIDIRAGYR	RYYSNHTTIS	KKNXX*RDYK	LV*GNPGL*I	PYVSYXI*DF	VILNGNLEYV	LYGRLHIGWN	L*QSICS*XD	DELGLIMMAP
OL410296.1 Marial vaccine			*	*	*			*	
KR296657.1 Virbac vaccine			*	*	*			*	
KR381803.1 Intervet vaccine			*	*	*			*	
MH070348.1 (KANS-02)			*	*	*			*	
OR504706.1 This study			*	*	*			*	
OR504707.1 This study			*	*	*			*	
OR504708.1 This study			*	*	*			*	
OR504709.1 This study			*	*	*			*	
OR504710.1 This study			*	*	*			*	
OR504711.1 This study			*	*	*			*	
OR504712.1 This study			*	*	*			*	
OR504713.1 This study			*	*	*			*	
OR504714.1 This study			*	*	*			*	
OR504715.1 This study			*	*	*			*	
OR504716.1 This study			*	*	*			*	

	100	110	120	130	140	150	160	170	180
NC013590.2 (C-27)-Reference	GGIDIRAGYR	RYYSNHTTIS	KKNXX*RDYK	LV*GNPGL*I	PYVSYXI*DF	VILNGNLEYV	LYGRLHIGWN	L*QSICS*XD	DELGLIMMAP
OL410296.1 Marial vaccine			*	*	*			*	
KR296657.1 Virbac vaccine			*	*	*			*	
KR381803.1 Intervet vaccine			*	*	*			*	
MH070348.1 (KANS-02)			*	*	*			*	
OR504717.1 This study			*	*	*			*	
OR504718.1 This study			*	*	*			*	
OR504719.1 This study			*	*	*			*	
OR504720.1 This study			*	*	*			*	
OR504721.1 This study			*	*	*			*	
OR504722.1 This study			*	*	*			*	
OR504723.1 This study			*	*	*			*	
OR504724.1 This study			*	*	*			*	
OR504725.1 This study			*	*	*			*	
OR504726.1 This study			*	*	*			*	
OR504727.1 This study			*	*	*			*	

	100	110	120	130	140	150	160	170	180
NC013590.2 (C-27)-Reference	GGIDIRAGYR	RYYSNHTTIS	KKNXX*RDYK	LV*GNPGL*I	PYVSYXI*DF	VILNGNLEYV	LYGR LHIGWN	L*QSICS*XD	DELGLIMMAP
OL410296.1 Marial vaccine			*	*	*			*	
KR296657.1 Virbac vaccine			*	*	*			*	
KR381803.1 Intervet vaccine			*	*	*			*	
MH070348.1 (KANS-02)			*	*	*			*	
OR504728.1 This study			*	*	*			*	
OR504729.1 This study			*	*	*			*	
OR504730.1 This study			*	*	*			*	
OR504731.1 This study			*	*	*			*	
OR504732.1 This study			*	*	*			*	
OR504733.1 This study			*	*	*			*	
OR504734.1 This study			*	*	*			*	
OR504735.1 This study			*	*	*			*	
OR504736.1 This study			*	*	*			*	
OR504737.1 This study			*	*	*			*	
OR504738.1 This study			*	*	*			*	

	100	110	120	130	140	150	160	170	180
NC013590.2 (C-27)-Reference	GGIDIRAGYR	RYYSNHTTIS	KKNXX*RDYK	LV*GNPGL*I	PYVSYXI*DF	VILNGNLEYV	LYGR LHIGWN	L*QSICS*XD	DELGLIMMAP
OL410296.1 Marial vaccine			*	*	*			*	
KR296657.1 Virbac vaccine			*	*	*			*	
KR381803.1 Intervet vaccine			*	*	*			*	
MH070348.1 (KANS-02)			*	*	*			*	
OR504739.1 This study			*	*	*			*	
OR504740.1 This study			*	*	*			*	
OR504741.1 This study			*	*	*			*	
OR504742.1 This study			*	*	*			*	
OR504743.1 This study			*	*	*			*	
OR504744.1 This study			*	*	*			*	
OR504745.1 This study			*	*	*			*	
OR504746.1 This study			*	*	*			*	
OR504747.1 This study			*	*	*			*	
OR504748.1 This study			*	*	*			*	

	190	200	210	220	230	240	250	260	270
NC013590.2 (C-27)-Reference	AQFNQGQYRR	VITIDGSMFY	TDFMVQLSPT	PCWFAKPDY	EEILHEWCRN	VKTIXXLMXS	S*LPLLXXGT	L*PTTSP*SR	TLIXWYRTHG
OL410296.1 Marial vaccine							*.....	*.....*	
KR296657.1 Virbac vaccine							*.....	*.....*	
KR381803.1 Intervet vaccine							*.....	*.....*	
MH070348.1 (KANS-02)							*.....	*.....*	
OR504706.1 This study							*.....	*.....*	
OR504707.1 This study							*.....	*.....*	
OR504708.1 This study							*.....	*.....*	
OR504709.1 This study							*.....	*.....*	
OR504710.1 This study							*.....	*.....*	
OR504711.1 This study							*.....	*.....*	
OR504712.1 This study							*.....	*.....*	
OR504713.1 This study							*.....	*.....*	
OR504714.1 This study							*.....	*.....*	
OR504715.1 This study							*.....	*.....*	
OR504716.1 This study							*.....	*.....*	

	190	200	210	220	230	240	250	260	270
NC013590.2 (C-27)-Reference	AQFNQGQYRR	VITIDGSMFY	TDFMVQLSPT	PCWFAKPDY	EEILHEWCRN	VKTIXXLMXS	S*LPLLXXGT	L*PTTSP*SR	TLIXWYRTHG
OL410296.1 Marial vaccine							*.....	*.....*	
KR296657.1 Virbac vaccine							*.....	*.....*	
KR381803.1 Intervet vaccine							*.....	*.....*	
MH070348.1 (KANS-02)							*.....	*.....*	
OR504717.1 This study							*.....	*.....*	
OR504718.1 This study							*.....	*.....*	
OR504719.1 This study							*.....	*.....*	
OR504720.1 This study							*.....	*.....*	
OR504721.1 This study							*.....	*.....*	
OR504722.1 This study							*.....	*.....*	
OR504723.1 This study							*.....	*.....*	
OR504724.1 This study							*.....	*.....*	
OR504725.1 This study							*.....	*.....*	
OR504726.1 This study							*.....	*.....*	
OR504727.1 This study							*.....	*.....*	

	190	200	210	220	230	240	250	260	270
NC013590.2 (C-27)-Reference	AQFNQGQYRR	VITIDGSMFY	TDFMVQLSPT	PCWFAKPDY	EEILHEWCRN	VKTIXXLMXS	S*LPLLXXGT	L*PTTSP*SR	TLIXWYRTHG
OL410296.1 Marial vaccine							*.....	*.....*	
KR296657.1 Virbac vaccine							*.....	*.....*	
KR381803.1 Intervet vaccine							*.....	*.....*	
MH070348.1 (KANS-02)							*.....	*.....*	
OR504728.1 This study							*.....	*.....*	
OR504729.1 This study							*.....	*.....*	
OR504730.1 This study							*.....	*.....*	
OR504731.1 This study							*.....	*.....*	
OR504732.1 This study							*.....	*.....*	
OR504733.1 This study							*.....	*.....*	
OR504734.1 This study							*.....	*.....*	
OR504735.1 This study							*.....	*.....*	
OR504736.1 This study							*.....	*.....*	
OR504737.1 This study							*.....	*.....*	
OR504738.1 This study							*.....	*.....*	

	190	200	210	220	230	240	250	260	270
NC013590.2 (C-27)-Reference	AQFNQGQYRR	VITIDGSMFY	TDFMVQLSPT	PCWFAKPDY	EEILHEWCRN	VKTIXXLMXS	S*LPLLXXGT	L*PTTSP*SR	TLIXWYRTHG
OL410296.1 Marial vaccine							*.....	*.....*	
KR296657.1 Virbac vaccine							*.....	*.....*	
KR381803.1 Intervet vaccine							*.....	*.....*	
MH070348.1 (KANS-02)							*.....	*.....*	
OR504739.1 This study							*.....	*.....*	
OR504740.1 This study							*.....	*.....*	
OR504741.1 This study							*.....	*.....*	
OR504742.1 This study							*.....	*.....*	
OR504743.1 This study							*.....	*.....*	
OR504744.1 This study							*.....	*.....*	
OR504745.1 This study							*.....	*.....*	
OR504746.1 This study							*.....	*.....*	
OR504747.1 This study							*.....	*.....*	
OR504748.1 This study							*.....	*.....*	

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