

gene	position	ref aa	comas whole-genome 2012	de vos putative 2013	casali evolution 2014	mtu173	mtu broad
rpoA	31	G			A <sub>1</sub> S <sub>1</sub>	A <sub>1</sub> S <sub>1</sub>	
rpoA	181	T	I <sub>1</sub>		A <sub>1</sub>		
rpoA	183	V	A <sub>1</sub> G <sub>1</sub>		G <sub>1</sub>		
rpoA	187	T	A <sub>3</sub> P <sub>1</sub>		A <sub>1</sub> P <sub>1</sub>		
rpoA	190	D		G <sub>1</sub>	G <sub>1</sub>		
rpoB	45	P			S <sub>1</sub>	L <sub>1</sub>	A <sub>3</sub> L <sub>9</sub> S <sub>7</sub> T <sub>2</sub>
rpoB	399	T			A <sub>1</sub>		A <sub>5</sub> I <sub>4</sub>
rpoB	430	L				P <sub>1</sub>	P <sub>3</sub> R <sub>9</sub>
rpoB	435	D				A <sub>1</sub> F <sub>5</sub> G <sub>3</sub> V <sub>11</sub> Y <sub>2</sub>	A <sub>2</sub> G <sub>3</sub> H <sub>1</sub> N <sub>2</sub> V <sub>140</sub> Y <sub>27</sub>
rpoB	445	H				D <sub>8</sub> R <sub>1</sub> Y <sub>2</sub>	D <sub>25</sub> L <sub>27</sub> N <sub>7</sub> P <sub>2</sub> Q <sub>2</sub> R <sub>42</sub> Y <sub>53</sub>
rpoB	450	S				L <sub>71</sub>	L <sub>743</sub> W <sub>22</sub>
rpoB	452	L				P <sub>2</sub>	P <sub>24</sub> V <sub>1</sub>
rpoB	491	I			V <sub>1</sub>	L <sub>1</sub>	
rpoB	496	V			L <sub>1</sub> M <sub>1</sub>		G <sub>1</sub> M <sub>3</sub>
rpoB	503	F			S <sub>1</sub>		S <sub>3</sub>
rpoB	731	L			P <sub>1</sub>	P <sub>1</sub>	P <sub>8</sub>
rpoB	761	E			D <sub>1</sub>		D <sub>1</sub>
rpoB	827	R			C <sub>1</sub>		C <sub>3</sub>
rpoB	835	H			P <sub>1</sub> R <sub>1</sub>	R <sub>1</sub>	P <sub>1</sub> R <sub>3</sub>
rpoC	332	G		R <sub>2</sub>	C <sub>1</sub> R <sub>1</sub> S <sub>1</sub>	S <sub>7</sub>	
rpoC	431	V			M <sub>1</sub>	M <sub>1</sub>	
rpoC	433	G	S <sub>1</sub>		C <sub>1</sub> S <sub>1</sub>	S <sub>1</sub>	
rpoC	434	P	A <sub>1</sub> R <sub>1</sub>		Q <sub>1</sub> R <sub>1</sub>		
rpoC	449	L	V <sub>1</sub>		V <sub>1</sub>		
rpoC	452	F		C <sub>1</sub>	C <sub>1</sub>		
rpoC	483	V	A <sub>3</sub> G <sub>3</sub>	A <sub>1</sub> G <sub>3</sub>	A <sub>1</sub> G <sub>1</sub>	A <sub>1</sub> G <sub>5</sub>	
rpoC	484	W	G <sub>2</sub>		G <sub>1</sub>	G <sub>1</sub>	
rpoC	485	D	H <sub>1</sub> N <sub>1</sub>	Y <sub>1</sub>	N <sub>1</sub> Y <sub>1</sub>		
rpoC	491	I	T <sub>1</sub> V <sub>2</sub>	T <sub>2</sub>	T <sub>1</sub> V <sub>1</sub>	T <sub>2</sub>	
rpoC	516	L	P <sub>2</sub>		P <sub>1</sub>		
rpoC	519	G	D <sub>1</sub>		D <sub>1</sub>	V <sub>1</sub>	
rpoC	521	A	D <sub>1</sub>		D <sub>1</sub>		
rpoC	525	H	N <sub>1</sub>	Q <sub>1</sub>	Q <sub>1</sub>		
rpoC	527	L	V <sub>1</sub>		V <sub>1</sub>	V <sub>8</sub>	
rpoC	698	N	H <sub>1</sub> K <sub>1</sub> S <sub>1</sub>	H <sub>1</sub> S <sub>1</sub>	H <sub>1</sub> K <sub>1</sub> S <sub>1</sub>	K <sub>1</sub>	
rpoC	734	A			V <sub>1</sub>	V <sub>2</sub>	
rpoC	1040	P		R <sub>1</sub>	R <sub>1</sub> S <sub>1</sub> T <sub>1</sub>		
rpoC	1252	V			L <sub>1</sub>	M <sub>4</sub>	