

NTmatK ATGGAAGAAATCCAAAGATATTTACAGCCAGATAGATCGCAACAACACAACCTTCCTATAT  
AmatK ATGGAAGAAATCCAGCGTTACCTGCAACCGGATCGCTCCCAGCAACACAATTTCTCTAC  
\*\*\*\*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \*  
MetGluGluIleGlnArgTyrLeuGlnProAspArgSerGlnGlnHisAsnPheLeuTyr

NTmatK CCACTTATCTTTCAGGAGTATATTTATGCACTTGCTCATGATCATGGTTTAAATAGAAAT  
AmatK CCGCTGATCTTCCAAGAGTACATTTATGCGCTCGCTCAGACCACGGTCTGAACCGCAAC  
\*\* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \*  
ProLeuIlePheGlnGluTyrIleTyrAlaLeuAlaHisAspHisGlyLeuAsnArgAsn

NTmatK AGGTCGATTTTGGTGGAAATCCAGGTTATAACAATAAATTAAGTTTCCTAATTGTGAAA  
AmatK CGTAGCATTCTCCTCGAAAAATCCGGGCTACAATAACAAGCTGTCTTCTCCTGATTGTA AAA  
\* \*\*\* \* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \*  
ArgSerIleLeuLeuGluAsnProGlyTyrAsnAsnLysLeuSerPheLeuIleValLys

NTmatK CGTTTAATTACTCGAATGTATCAACAGAATCATTTTCTTATTCTACTAATGATTCTAAC  
AmatK CGCTGATCACGCGTATGTACCAACAGAATCACTTTCTCATTCTACCAACGACTCTAAC  
\*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \*  
ArgLeuIleThrArgMetTyrGlnGlnAsnHisPheLeuIleSerThrAsnAspSerAsn

NTmatK AAAAATTCATTTTGGGGTGCAACAAGAGTTTGTATTCTCAAATGATATCAGAGGGATTT  
AmatK AAGAACAGCTTCTCGGTTGTAAACAAATCTCTGTACTCCAGATGATTTCTGAAGGTTTC  
\*\* \*\* \*\*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \*  
LysAsnSerPheLeuGlyCysAsnLysSerLeuTyrSerGlnMetIleSerGluGlyPhe

NTmatK GCGTTTATTGTGGAAATTCGGTTTCTCTACGATTAATATCTTCTTTATCTTCTTCGAA  
AmatK GCGTTTCATCGTAGAGATCCCATTTTCCCTCCGCCTCATCTCTCTGTCTAGCTTCGAG  
\*\*\*\*\* \*\* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \*  
AlaPheIleValGluIleProPheSerLeuArgLeuIleSerSerLeuSerSerPheGlu

NTmatK GGCAAAAAGATTTTAAATCTTATAATTTACGATCAATTCATTCAACATTTCTTTTAA  
AmatK GGTAAGAAAATCTTCAAGTCTTATAACCTGCGCTCTATCCATTCCAGGTTCCCTTTTCTC  
\*\* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \*  
GlyLysLysIlePheLysSerTyrAsnLeuArgSerIleHisSerThrPheProPheLeu

NTmatK GAGGACAATTTTTCATCTAAATTATGTATTAGATATACTAATACCCTACCCTGTTCAT  
AmatK GAAGATAATTTTCCACCTGAATTACGTCCTGGATATTCTCATCCCTTACCCGGTTCAC  
\*\* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \*  
GluAspAsnPheSerHisLeuAsnTyrValLeuAspIleLeuIleProTyrProValHis

NTmatK CTGGAATCTTGGTTCAAACCTCTTCGCTATTGGGTAAGATGCCTCTTCTTTACATTTA  
AmatK CTGGAATCCTGGTTCAAACGCTCCGCTACTGGGTAAGGACGCCAGCAGCCTGCACCTG  
\*\*\*\*\* \*\*\*\*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \*  
LeuGluIleLeuValGlnThrLeuArgTyrTrpValLysAspAlaSerSerLeuHisLeu

NTmatK TTACGATTCTTTCTCCATGAATTTTGAATTTGAATAGTCTTATTACTTCAAAGAAGCCC  
AmatK CTGCGCTTCTTCTCCACGAGTTCTGGAATCTCAACAGCCTCATTACCTCTAAGAAACCA  
\* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \*  
LeuArgPhePheLeuHisGluPheTrpAsnLeuAsnSerLeuIleThrSerLysLysPro

NTmatK GGTTACTCCTTTTCAAAAAAATCAAAGATTCTTCTTCTTATATAATTCTTATGTA  
AmatK GGCTATTCTTCTCAAGAAGAACCAACGCTTTTTTTCTTCTGTACAACAGCTATGTC  
\*\* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \*  
GlyTyrSerPheSerLysLysAsnGlnArgPhePhePhePheLeuTyrAsnSerTyrVal

NTmatK TATGAATGCGAATCCACTTTCGTCTTCTACGGAACCAATCTTCTCATTACGATCAACA  
AmatK TATGAATGCGAATCTACCTTTGTTTCTCGCTAACCAATCTTCCCATCTGCGTAGCACC  
\*\*\*\*\* \*\* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \* \*\* \*  
TyrGluCysGluSerThrPheValPheLeuArgAsnGlnSerSerHisLeuArgSerThr

NTmatK TCTTTTGGAGCCCTTCTTGAACGAATATATTTCTATGGAAAAATAGAACGTCTTGTAGAA

AmatK TCTTTCGGTGCCTCCTGGAGCGTATCTACTTCTACGGCAAATCGAACGCCTCGTTGAA  
 \*\*\*\*\* \*\* \*\* \*\* \*\*  
 SerPheGlyAlaLeuLeuGluArgIleTyrPheTyrGlyLysIleGluArgLeuValGlu

NTmatK GTCTTTGCTAAGGATTTTCAGGTTACCTATGGTTATTCAAGGATCCTTTCATGCATTAT  
 AmatK GTTTTCGCAAAGGACTTTCAAGTGACGCTGTGGCTGTTCAAAGACCCGTTTCATGCACTAC  
 \*\*\* \*\* \*\* \*\* \*\*  
 ValPheAlaLysAspPheGlnValThrLeuTrpLeuPheLysAspProPheMetHisTyr

NTmatK GTTAGGTATCAAGGAAATCCATTCTGGCTTCAAAGGGACGTTTCTTTTGATGAATAAA  
 AmatK GTTTCGTACAGGGTAAATCTATTCTGGCAAGCAAAGGCACCTTCCTGCTCATGAACAAA  
 \*\*\* \* \*\* \*\* \*\* \*\*  
 ValArgTyrGlnGlyLysSerIleLeuAlaSerLysGlyThrPheLeuLeuMetAsnLys

NTmatK TGGAAATTTTACCTTGTCATTTTGGCAATGTCATTGTTCTCTGTGCTTTCACACAGGA  
 AmatK TGGAAGTTCTATCTGGTGAACCTTTTGGCAGTGCCATTGCTCTCTGTGCTTCCACACAGGT  
 \*\*\*\*\* \*\* \*\* \*\* \*\*  
 TrpLysPheTyrLeuValAsnPheTrpGlnCysHisCysSerLeuCysPheHisThrGly

NTmatK AGGATCCATATAAACCAATTATCCAATCATTCCCGTGACTTTATGGGCTATCTTTCAAGT  
 AmatK CGTATTCATATCAACCACTGTCCAACCACTCTCGTGACTTTATGGGTATCTGAGCAGC  
 \* \*\* \*\*\*\*\* \*\* \*\* \*\*  
 ArgIleHisIleAsnGlnLeuSerAsnHisSerArgAspPheMetGlyTyrLeuSerSer

NTmatK GTGCGACTAAATCCTTCAATGGTACGTAGTCAAATGTTAGAAAATTCATTCTAATCAAT  
 AmatK GTACGCTGAACCCGCTCTATGGTTCGTAGCCAGATGCTGGAGAACTCCTTTCTGATCAAC  
 \*\* \*\* \*\* \*\*  
 ValArgLeuAsnProSerMetValArgSerGlnMetLeuGluAsnSerPheLeuIleAsn

NTmatK AATGCAATTAAGAAGTTCGATACCCCTGTTCCAATTATTCCTTTGATTGGATCATTAGCT  
 AmatK AACGCGATCAAAAAGTTTGACACGCTGGTTCGATCATTCCGCTCATCGGCTCCCTGGCG  
 \*\* \*\* \*\* \*\*  
 AsnAlaIleLysLysPheAspThrLeuValProIleIleProLeuIleGlySerLeuAla

NTmatK AAAGCAAACCTTTGTACCGTATTAGGGCATCCCATTAGTAAACCGGTTTGGTCCGATTTA  
 AmatK AAGGCGAATTCTGCACCGTCCCTCGGTATCCAATTTCTAAGCCAGTTTGGTCTGACCTG  
 \*\* \*\* \*\* \* \*\* \*\*  
 LysAlaAsnPheCysThrValLeuGlyHisProIleSerLysProValTrpSerAspLeu

NTmatK TCAGATTCTGATATTATTGACCGATTGGGCGTATATGCAGAAAATCTTTTTCATTATTAT  
 AmatK TCTGACTCTGACATCATCGACCGTTTCGGTTCGTATCTGCCGTAATCTGTTTCACTACTAC  
 \*\* \*\* \*\*\*\*\* \*\* \*\* \*\*  
 SerAspSerAspIleIleAspArgPheGlyArgIleCysArgAsnLeuPheHisTyrTyr

NTmatK AGCGGATCTTCCAAAAAAGACTTTATATCGAATAAAGTATATACTTCGACTTCTTGT  
 AmatK TCTGGTTCTAGCAAAAAGAAAACCTCTATCGCATCAAGTACATCCTGCGCCTCTCTTGT  
 \*\* \*\*\* \*\*\*\*\* \*\* \*\* \* \*\*\*\*\* \*\* \*\* \*\*  
 SerGlySerSerLysLysLysThrLeuTyrArgIleLysTyrIleLeuArgLeuSerCys

NTmatK GCTAGAACTTTAGCTCGGAAACACAAAAGTACTGTACGCACCTTTTTGAAAAGATCGGGC  
 AmatK GCCCGCACGCTCGCGCGTAAACACAAAAGCACGGTTCGCACTTTCCTCAAACGTAGCGGC  
 \*\* \* \*\* \* \*\* \*\* \*\*\*\*\* \*\* \*\* \*\*\*\*\* \* \*\*\* \*  
 AlaArgThrLeuAlaArgLysHisLysSerThrValArgThrPheLeuLysArgSerGly

NTmatK TCGGAATTATTGGAAGAATTCTTAACGTCGGAAGAACAAGTTCTTTCTTTGACCTTCCCA  
 AmatK TCTGAGCTGCTGGAAGAGTTTCTGACCAGCGAAGAGCAGGTACTGTCCCTGACTTTCCG  
 \*\* \*\* \* \*\*\*\*\* \*\* \* \*\* \*\*\*\*\* \*\* \*\* \*\*  
 SerGluLeuLeuGluGluPheLeuThrSerGluGluGlnValLeuSerLeuThrPhePro

NTmatK	CGAGCTTCTCTAGTTTGTGGGGAGTATATAGAAGTCGGATTGGTATTTGGATATTTT
AmatK	<u>CGTGCATCCTCTAGCCTGTGGGCGTTTATCGTTCTCGCATTGGTATCTCGACATCTC</u>
	** ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** *
	ArgAlaSerSerSerLeuTrpGlyValTyrArgSerArgIleTrpTyrLeuAspIlePhe
NTmatK	TGTATCAATGATCTGGCGAATTATCAA
AmatK	TGTATCA <u>AACGACCTGGCAA</u> ACTACCAG
	***** ** ***** ** ** *
	CysIleAsnAspLeuAlaAsnTyrGln

Suppl. Fig. 1: Alignment of wild type *matK* (NTmatK) and the mutated version of *matK* used in this study (AmatK). Asterisks denote identical nucleotides (72% of all nucleotides are identical between AmatK and NTmatK). Codons changed between NTmatK and AmatK are underlined.