```
Degenerate TACATCATTAATTACATCGGGAGTTGGTTGAATATATATCTAGCTCAACCAGATTTTCC-
Wild-type  TACATCATTAATTACATCGGGAGTTGGTTGAATATATATCTAGCTCAACCAGATTTTCC-
KACC42780  TACATCACCAATTACATCGGGAGTTGGTTGAATGTATATTCAGCCCAGCCTGACATTCCT
           *******  ************************ *****  *** ** ** **  ****

Degenerate TTCGAGTCCAATACTACAGTTTTACACCCTCCACGTAGTTAGCTGGTGTGTTCATTGAGG
Wild-type  TTCGAGTC----------------------------------------------------
KACC42780  TTTAAGTCCAATACTACAGCTTTGCACCCTCCCCATGGCTAGAAGGTGTGTTCATTGATC
           **  ****

Degenerate CAGAGCATACACATCAGGCCCGGATCAAAGGGCGAATTCTGCAGATATCCATCACACTGG
Wild-type  ----------------------------------------------------------
KACC42780  AGGAGGGACGATGTAGATGTG----------------------------------------

Degenerate CGGCCGCTCGAGCATGCATCTAGAGGGCCCAATTCTTGGCTAGAGCCTTAATACTTCATT
Wild-type  ----------------------------------------------------------
KACC42780  -----GCGTTGTATCTTTTCTGAGGGACGATTTACTTTGATAGAGCCTTAATACTTCATT

Degenerate ATGATTGTTATCCAGTTTTCTAGTATTTTGGGACCATTTCTTAATGTCAAGATCAATCGG
Wild-type  ----------------------------------------------------------
KACC42780  ATGTTTGTTATC------------------------------------------------

Degenerate TATATACACCAGCAAATACGCTCTAATGTGTTCGGTTGACTTTAATTAGGCCTTTCGCAG
Wild-type  ----------------------------------------------------------
KACC42780  ----------------------------------------------------------

Degenerate TCTCCGAACGTGTCTACAATGGTCTTCAATCGGGATCCTCGTCTGGCCGTAAGTTTCCGC
Wild-type  ----------------------------------------------------------
KACC42780  ----------------------------------------------------------

Degenerate CGCTATTCATGTCCGCCGTCTAATCCCGCCAGGGAGCGTTTATGAGCCGACCCGTAAGTT
Wild-type  ----------------------------------------------------------
KACC42780  ----------------------------------------------------------

Degenerate TTTGGCGGTAGACCCCGGTGCACCCCCGCAGCGACGTGGAACATTACGTTACGTCCCGGG
Wild-type  ----------------------------------------------------------
KACC42780  ----------------------------------------------------------

Degenerate CAGTATCTGCCGGGCCACCTCCATTTGACCGCCCGGATGCTTACCGGATTGTGGCCGTCG
Wild-type  ----------------------------------------------------------
KACC42780  ----------------------------------------------------------

Degenerate CACGTTTACCCCGTCGTGGGAAAGTCCTTCCGATGTGGCGCAACAGGTCGTGATCGTGGG
Wild-type  ----------------------------------------------------------
KACC42780  ----------------------------------------------------------

Degenerate AAAGGCAGGTGGCGGTGGGTATAAAAGCTGGATCCTCAATAACCAGGGTCTTTTGTCGCT
Wild-type  ----------------------------------------------------------
KACC42780  ----------------------------------------------------------
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Degenerate TGAACTTGAACCACAACCTTCCTGTTCCACCCAGGCCAATTTCCAACACGCAGGGTCATT
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate TTGTCGACCGTGAAGGTGCGTAGTCCGCATACGTGTGCCACATCACTTATCTGATCGGAT
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate CACCCCTTTTAGCTTGCCACGTTTCCCTCAGTGTACCTTCCTCTATCTTCGCCTCGTGGA
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate TCACTGCTAAAGATCCCCCAAGTACATCCGCCCGTTCATATCTCTTGCCCGTTGGCCCAG
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate CTTCAGTCTGCGCCTCGGAACAACAGTGCGTCCTATTGGCACGTCTGTTTGTCATCACTG
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate ATAACGTGTGGAGATCGTTCGTTCCGCTTTACACTCGTGTCGCTAAACGAGTCCCCGTCG
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate ACCTCCCGGACCACTTGTGGTGAGTGATCTCCGGCCCAAAGGCTCCCACCGTATTGACTC
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate TTGCTTTGATTTAGGCACACCGCTCCGAACAAACTAAGTGCGAACCGGTTACGTCGACAC
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate CCGCCGTGGATAGACGCTCGCGGCTTGACCATCTCCGCTGTTGACTCCGCCCTCACAGAA
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate GAATACCGCCGACTCTTCAAAAACTGATCTTGCCTAACGTGAGTAATGCTGCGTTCTTTC
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate TTGGACGTGGTCGATATATGATACTCTAAATAGATGCATTGCGACGAAGGACTGGCGACG
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate ACGATACGCTTCATTCACACCAATCTTGAGCTTCTTGACGACGTACAAGTCAACGTCGGT
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate GACGAGCCCCAACTTATGCCGAGTCCGATGGCCACGATCATCGCAGAGAAGGGCATTCCT
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------
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Degenerate GTCTTCCGGGATCCATCGGATGGGCCACCATGCCTCACGAAGGAAGAGAAGGCCGTCATA
Wild-type ----------
KACC42780 ----------

Degenerate ATCGCCAAGAGGAAAGGGGTCACCAATCAGGGGGCCGTCGTATACCTCGACTGGACGCCC
Wild-type ----------
KACC42780 ----------

Degenerate GACGCTTGGGAGTATGGCTGCCAGGTGGCGAGTGATCTCGTACAGCTGGGGTTGCGCCAG
Wild-type ----------
KACC42780 ----------

Degenerate GACATGACACAATACCGTTTCGACAATACGATGCCGGGCGGGAAGCAGTTCTTGCATAAT
Wild-type ----------
KACC42780 ----------

Degenerate ATGAAGGTCCTACGGTACAAACATGCCTTCGACTCCGCCGTACGTTATTTCTTTTTTTCT
Wild-type ----------
KACC42780 ----------

Degenerate TCTTCCTCTTTTAAGAATGTATTTGTCCTAGATCATCCGCAGTCTGCGAGCACGCAAGTG
Wild-type ----------
KACC42780 ----------

Degenerate TACAATGGCGGATGTCTTTCATCGAGACATATCGAAAACATCAAAAATAGCGGCGAAAGC
Wild-type ----------
KACC42780 ----------

Degenerate CCCTGCCGCCCCGTCCTCGCCGGCGACCGGAAAGAAAGGAAAGAAGAAGCGGGGGGGAGA
Wild-type ----------
KACC42780 ----------

Degenerate AGGGGGAACAGATGATCACGCCATGCCCGGCTCCGCCATGTGGAATGCCGCCAGCAACGG
Wild-type ----------
KACC42780 ----------

Degenerate CATCATGAGCGACGTCTGCGGTCCCGCCATCCTCGTAGATGGTTATTTGGCGCCGGAGGA
Wild-type ----------
KACC42780 ----------

Degenerate CAGGACGTTCCTCACCGTCTTCCTCGATCGTTATCGCTCCAACTCCCTTCGGAACAAAGG
Wild-type ----------
KACC42780 ----------

Degenerate GCATTGTGAAAAGAAGCTCGCAGCGGCCAGAGCAAACGTCATTGCCCTTCTCGGAGCGGA
Wild-type ----------
KACC42780 ----------

Degenerate CTTCCTCACATCCGGCAAGGTTCCCGCCGACTTTACGCCACAACAAGCGCGAAAGGCCCT
Wild-type ----------
KACC42780 ----------

Degenerate TGGTGAACTGACCAAGTATTTTGTATGTTATTTGCTTCTTTCTCTTGTGATCCCTATCTT
Wild-type ----------
KACC42780 ----------

Degenerate ACTCCAGTGTACACAGAATTGTCTAAAGTGGAACTTCCTGTCAAAGGCTGAACGTGCGGC
Wild-type ----------
KACC42780 ----------

Degenerate TATGGCACTTCCCGTCGACGTAGACTCCCCCGGTGCTTTCGACCGTCTCGTCAATCGTTG
Wild-type ----------
KACC42780 ----------

Degenerate GAACGCAATGTCCGAGCGTGCCCAAGCGCATGAGTGGTGTGCAACATCAATCGGCTGGAT
Wild-type ----------
KACC42780 ----------

Degenerate GGTTGAGATTTTGTCGCGGCGGTCCCGATCCCCGGTCAGAGAGCCCGACATATATCCCGA
Wild-type ----------
KACC42780 ----------

Degenerate CGCTCTTATCGCATGTACGTTGTTATGATCATTTTGCTTTTGACTCAAACTGAATGCATG
Wild-type ----------
KACC42780 ----------

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Wild-type ----------
KACC42780 ----------

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Wild-type ----------
KACC42780 ----------

Degenerate GAGTTCCTCTCCGCCGACGAGACTTTTATTGATACCGAAGGCTTCCCTATAGGCGACCTG
Wild-type ----------
KACC42780 ----------

Degenerate GAAGTGGATCTCGCCGCTCTCAGAGACCAATGGAACAAGGAAAAGGATATGGGAATTGGC
Wild-type ----------
KACC42780 ----------

Degenerate GAGTTTGCCACTAAAGATGAGCAGGAGTTGCGGGAGTACTTGACAATCCGGGACGGATGC
Wild-type ----------
KACC42780 ----------

Degenerate CCGGAGGCAATGAGGCGGTGGACGTGCGAGAATTACAAGCATATCCCGGTGGGGACCGCC
Wild-type ----------
KACC42780 ----------

Degenerate GAGAAGTTCGAAGGGGCCATCGAGTTCAAGCCGATGTGGCATCAGTTGGCAGCGGTTGCC
Wild-type ----------
KACC42780 ----------

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Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate GATCCATCCCACCCCGAGTCAGCCCCGCGTTCACTACGGGAAGGCTGGTCGCGTGTGCCG
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate GGCACACTGATAGATGACGATGTCGGCTTGGGAAAGACTGTGACGACAGCGACGTGGATC
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate GCGACCGTTATTCAGCTTTTAGAGGTCCAACGTGCCGCTGCAGCCACTTTGAGTCCGGAG
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate GAACAGGTGAAGCATCGCCCGCGATGTCTCGGAGGTATGTATCCTGCTAGAAACTTTCTG
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate GCGCAATGCTCATGCAATCTATACAGAAACTTTCGGCGGACTGAAAGAGATTCCTTCCGC
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate CCCGCACATCATCGTTGTCCCAAGCGGTCTAATCCCTCAGTGGGTCGGCGAGTTGAAGCG
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate ATTTTTCAAGCAAGGAGCGGTCCAAATTGTGGTTGTCCGGACCGGCGGGGAGTTATGGAA
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate GGAAGATGTTAAGACGCTGTTCGCTGATGGACCGGTCCCGCTTCATCGCCGCATTATGCT
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate GGTGCAGGTCAGCGTGAGTGCTATGTCATAAGCTTTCCGGTATATCCCTAACATCAGTGT
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

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Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate TTAGCCTTATCTTCCCCAACACCGTTGAGTTCATCCACACCTACAGCTTCCTCAGTGCCT
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate GGATTGACGAGGCTCACGGTGCGAGAACGTGCAACATGTTATGGCATGCTATCGAGGCAC
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------
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Degenerate TCTTCCATGTCACTCTGGTCAAAGTCCTGTTGACCGCCACACCATTACTACAAGCTGCCG
Wild-type ----------
KACC42780 ----------

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Wild-type ----------
KACC42780 ----------

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Wild-type ----------
KACC42780 ----------

Degenerate CTTGTCATGGAAGGGAAGCGAGCAAAGGCAAAGAGCGCTCTCCTTTCAGGGACTCATCAT
Wild-type ----------
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Degenerate TTCGCTTCCAAATCGGAGAAGGAGATGCGGGATGCCGCCGCTGCATCACTGGTTCACAAG
Wild-type ----------
KACC42780 ----------

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Wild-type ----------
KACC42780 ----------

Degenerate ACCGGAAAGTCGCTCCGGTGGGATGGCACACCGATCAACGCGGATATCCCGCAAAACACG
Wild-type ----------
KACC42780 ----------

Degenerate ATGACTTACTGCATGGTCGACGTCAGTGACGAGGAGGCGGAGGCAGCGGGGAAGGCGGTG
Wild-type ----------
KACC42780 ----------

▼→

Degenerate GAGGAGGAAATCGCCAATGGTAAAGGATTTGAAGCGGACAAGATGGGGGTGCGTCGCTAA
Wild-type ----------
KACC42780 ----------

Degenerate CATTTTCCGGCGCTGCTTTACTAACTATCGTGCAGAAATTCTACCTCGGACCCAAGCTTA
Wild-type ----------
KACC42780 ----------

Degenerate TCCTTGGTTGCAAGGACATCGACAAGATATCACCGACCGAACCACTGACTTTGGAGCAAT
Wild-type ----------
KACC42780 ----------

Degenerate GCAAAGAACTCTATATGTCCAAAGCCAAGGTTGCCGTCGAGCTCTCGAAAGCTATCGTCC
Wild-type ----------
KACC42780 ----------

Degenerate ATCGCGGTCCGGCCGCCGTTGTTCCCCAGGAGCTACACGGAACGGACGAATCCATTTCCC
Wild-type ----------
KACC42780 ----------

Degenerate **CCCAGTTCCCTAGCCAGGACCGCTTCGGCATCCCTTGCGTTTACAAGGACTTTCATCCAG**
Wild-type ----------
KACC42780 ----------

▽→
Degenerate **AGCCGCTCAAGCCGGGAGATGCAAT**TCCCGGTGAAAAGGTCATAATCCACACGCTCTTTG
Wild-type ----------
KACC42780 ----------

Degenerate CCATGTTCCATGAG**CTGCTCACGCAGGTACGTCTTGTGCTTCCCGCCCTCCATCTGCCTG**
Wild-type ----------
KACC42780 ----------

Degenerate **ACCATCTCCGGCACAGATGTACGCAGTGAACGGCATGAAGGCGGTATCCATATCGGGCAA**
Wild-type ----------
KACC42780 ----------

Degenerate **GGTCCACGGGGACGGGCGTGATAAAGTCATCGAGGAATTCAAGACGGACCCTACCATCCA**
Wild-type ----------
KACC42780 ----------

Degenerate **AGTTCTCA**TCATGAGCAATGTCGGTACGGTGGGGCTGAACTTGACCGTCGCCGCGTCA**CT**
Wild-type ----------
KACC42780 ----------

Degenerate **CATTCTATTTGTGCGTATCTTCCGCGTCTGAAAGGTTCCGGCATTTATTCACTCAACAGG**
Wild-type ----------
KACC42780 ----------

Degenerate **ACGTCAATTGGTCGGGTGTAATGGCCCACCAAATATATGGTCGAATCCATCGTCGTGGAC**
Wild-type ----------
KACC42780 ----------

Degenerate **AAACACGCGAGACCTTTATCATACAACTGGTTTGCGCGAGGACGGTTGAAGTCTTGCTAG**
Wild-type ----------
KACC42780 ----------

Degenerate **TGGCCAACGGTCTGTCTAAACACACACTTCTTTGCAACTTCCTTGAGGCAGAGCGCAATG**
Wild-type ----------
KACC42780 ----------

Degenerate **AAGGTATGTCAGTTTATGTTGATGCACGTCAATACTAACAATAGTGCAGAGCTGTGGAAT**
Wild-type ----------
KACC42780 ----------

Degenerate **CTAATCCAAAACCGGGACAGTTGTGACGATAACCTGCCCGCTGTCGACG**CACTAGCCGGA
Wild-type ----------
KACC42780 ----------

Degenerate TTCGACGACGACGCCCGTGCGCAAGCGAAGGCAGCC**AAAGTCAAGGTCCGTGCCACTGCC**
Wild-type ----------
KACC42780 ----------

Degenerate GGTCCGTCGAAAGCCAAGAAGCGGAAAGTCACAAGTGTCGAGACCGTTGGGGACGACGAT
Wild-type ----------
KACC42780 ----------

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Wild-type ----------
KACC42780 ----------

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Wild-type ----------
KACC42780 ----------

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Wild-type ----------
KACC42780 ----------

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Wild-type ----------
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Wild-type ----------
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Wild-type ----------
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Wild-type ----------
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Degenerate TCTCCCGTCAAACCTCCGGCGAAAAAAGAGCGAGACCGACATTCCGGCAACTCCGTCCACC
Wild-type ----------
KACC42780 ----------

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Wild-type ----------
KACC42780 ----------

Degenerate CCGGGCCGGAAACGTGCCGCTACTCCCCCGTCTCCGTCCCCATTTTCCGCAAAGAGCAAA
Wild-type ----------
KACC42780 ----------

Degenerate GGCAAGCAACGCGCCACTACTCCGCCTCCGCCATCTCTGAAACGGAAGAAGCAACAACCT
Wild-type ----------
KACC42780 ----------

←▽
Degenerate CCGCCTCCGCCTCTCCCTCCTCCGTCGCCTTCTCTCCCAGCAGTGGATGATGACGACTTG
Wild-type ----------
KACC42780 ----------

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Degenerate TACACCGGGGTTTTCGATGAGTTCATCGGCGATTTCGAGGAGGATGACCGTCCGCGAGAG
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate GAGAAGAAATCCTTGAACGTAGGCCCTACGTTGTATAAAAAGCCACTGCGGGACGGCGGC
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate CGTTGGTACATTGCCGATAAAGTGGCCGTTCCTGACGACTTTCCCTTCAGCGGCCTTTCG
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate GTGGCGGACTGGAACACTTACTATAAACAACCTCAGATTTTCCCAGACTCACCGACGCAT
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate ACGGCGGTGTGGGAACAATGGAACAACAAACACTATGCTGCCAATGTCGGGGATTGGGAT
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------
                                                          ←—▼
Degenerate CTCGACTCGGGTCTGCCCCCTCCAGTTTCCCCGTCGACTTCATTGTCCGCTCTTAGCTCG
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate CTTCCTGACCACTTCAAGTCTACGCAGCCTTCCGAGGACGACAGTTCCGACAACGAAGAT
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

Degenerate GACAGCCCTGTTCATGCCCCAAAGACGAAGCCAGCAAAGGTATGTGTAGCATTTCACAAT
Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

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Wild-type  ------------------------------------------------------------
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Wild-type  ------------------------------------------------------------
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Wild-type  ------------------------------------------------------------
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Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------

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Wild-type  ------------------------------------------------------------
KACC42780  ------------------------------------------------------------
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Wild-type ----------
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Wild-type ----------
KACC42780 ----------

Degenerate TGGCAAATGCAACCACACCAACCGCCGGGCAACTTTAACTCGGTTATGGTATACATGTAT
Wild-type ----------
KACC42780 ----------

Degenerate ACCATAACCGAGTTAAAGAGTCCTGATACATGGATCATTTAGACGGTTGAAAATACTGCC
Wild-type ----------
KACC42780 ----------

Degenerate TGGGGCGATACTTTACGGACTACTTATCCCGCGCCAGAAATATTCTGGCGAACACAACCA
Wild-type ----------
KACC42780 ----------

Degenerate CACCAACCGCCGGGCAACTCTAACTCAGATATGGTGTATCAAGAGTTCCGATAACACTCA
Wild-type ----------
KACC42780 ----------

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Wild-type ----------
KACC42780 ----------

Degenerate TTCCGGTGAGTACAGGCGAACTGCCATGCTGTTTACGTTTCTCATCTTCGCATAACTAAC
Wild-type ----------
KACC42780 ----------

Degenerate CATTTGAAATTCAAACTATTTGAAATACCAGTGACTCTGATGACAAAGCAAGCTCTGTGG
Wild-type ----------
KACC42780 ----------

Degenerate TATATATTCCAGCACATCCCCCGTTCTCTCCTTCCTTCTCCCCTCCATCATGGACTACGA
Wild-type ----------
KACC42780 ----------

Degenerate TGGTGACGAGGATCTCGATCGTGACCCCGACTTCAACTACAATCCTGACATTGAAGATGT
Wild-type ----------
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Degenerate CACCCTCCCTGAGATCATAACACTATTCGACGACGCTCGTCTGCTTGCTCTTGGTGCGGC
Wild-type ----------
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Degenerate GCTCGATCCCGGCGCGGATTGGGCCGGCATGGACAAGGACGCCGTTCAGAAGTACATTGC
Wild-type ----------
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Degenerate TTTAACTCTGTGCGGCACCAAGGAAGGCGACGACCCCGTGCGGTACAATCTCGACTTTGA
Wild-type ----------
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Degenerate CAACGCCTACCAGGATGTTTACGACCACCCCGACGCCAAAGTCATGAAAGACATTGATTC
Wild-type ----------
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Wild-type ----------
KACC42780 ----------

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Wild-type ----------
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Wild-type ----------
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Wild-type ----------
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Wild-type ----------
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Wild-type ----------
KACC42780 ----------

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Wild-type ----------
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Wild-type ----------
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Wild-type ----------
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Wild-type ----------
KACC42780 ----------

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Wild-type --
KACC42780 --

Degenerate ACTCCTCTCTTATCCGTCGCGGGGATGAGACGGTCGAGGGTTTAGCGGAGACCCTTTTCA
Wild-type --
KACC42780 --

Degenerate ATGTCCCGCCAGAGGTGTTCGACACAGTCGACGTAGAGCCGGACGTGTGGGCCGGAGTAC
Wild-type --
KACC42780 --

Degenerate AGCAGTCGGCGGGCTTTCGCGCCAACTTCACCGCAAACCCGGTCACCGTTTACCGCATCT
Wild-type --
KACC42780 --

Degenerate C**ATACATCCAGGCGTATACCACGGACAAGTTCCAGACATACAACGTCTCCTCCTTCTCAT**
Wild-type --
KACC42780 --

Degenerate **CCAAGTCCATGAAGCTGTATCCACAAACCGCGTTCAAAATGAAAACAGCGGACGACATTC**
Wild-type --
KACC42780 --

Degenerate **CGGTGTCGTA**TCCTCTTGTCTATGACGCGCTCCTCACCAACCTGGGAGCAAAGACGCCTG
Wild-type --
KACC42780 --

Degenerate GAGCTGTCCG**TGTCGAAGTACGTGTGCCGCGCAGTCAAGCCAATGCTGT**CTTTGCTCTTG
Wild-type --
KACC42780 --

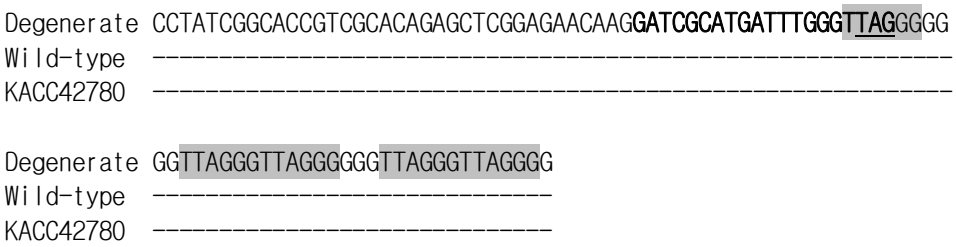
Degenerate CCATGGAACCGCGCGACTTTCAAGGGTACACGCATATAGTGAAGAACGAGATGTTATGGT
Wild-type --
KACC42780 --

Degenerate ATGTCATGTGCC**AGAATCTTTCTGGCATATATGCTTACATGGATCGCAAACAGGGCATGG**
Wild-type --
KACC42780 --

Degenerate **CGTCTACACAAAATCTGTGCTTGCTTGTTGTTACTCCGCTACGCTGCCTCTTGCCGTCGC**
Wild-type --
KACC42780 --

Degenerate **GACACCCGCGCCCATAAGGCC**ACCCTTCTACTTGTTGCCGCAACTACATTTGTCTTCAAC
Wild-type --
KACC42780 --

Degenerate TCCATGCATTCACGGCCGATGGAGATGGGAT**GGGACCGGCAGGTGGGAGCTC**TCATTCTC
Wild-type --
KACC42780 --



Supplemental Fig. S2. Alignment of the sequences corresponding degenerate specific region from degenerate (D4), wild type (W1) and KACC42780. Gene was predicted by FGENESH, and function and domain were estimated by UniProt (http://www.uniprot.org/) and Protein BLAST in NCBI. Exons of the putative helicase gene are shown in bold and start and stop codons are underlined. * indicates the identical residues in three sequences. ▼ and arrows indicate the sequence amplified by the SCAR marker discriminating degenerates. ▽ and arrows indicate the genomic sequence corresponding to HELICc and HepA domains. Telomeric repeating units (TTAGGG) are in shade box.