















BGT25\_T02a4-pET16-DEST

5' agtcccccgccacggggcctgccaccatacccacgcccgaacaagcgctcatgagccccgaagtggcgag  
 0 ++++++  
 3' tcagggggccgggtgccccggacgggtggatgggtgcggtcttggtcgagtagtactcgggcttcaccgctc

5110

SgrAI

5' cccgatcttccccatcggatggtcggcgatataggcgccagcaaccgcacctgtggcgccggatgacc  
 0 ++++++  
 3' gggctagaaggggtagccactacagccgctatatcccgcggtcgttggcgtggacaccgcggccactacgg

5180

BglII

5' ggccacgatgCGTCCGGCGTAGAGGATCGAGATCTCGATCCCGCGAAATTAATACGACTCACTATAGGGG  
 0 ++++++  
 3' ccggTgctacgcaggccgcacTctcctagctctagagctagggcgctttaaattatgctgagtgatatcccc

5250

T7 Promoter

XbaI

BamI

5' aattgtgagcggataacaattcccctctagaataattttgtttaactttaagaaggagatataccatgg  
 0 ++++++  
 3' ttaacactcgctattgTtaaggggagatctttattaaacaaattgaaattcttcctctatatggTacc

5320

Lac O

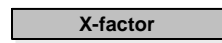
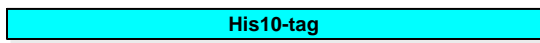
M  
1

BamI'

NdeI

5' gccatcatcatcatcatcatcatcatcacagcagcggccatatcgaaggTcgtcatatgctcgaATC  
 0 ++++++  
 3' cggtagtagtagtagtagtagtagtagtagtgtcgtcgccggatagcttccagcagTatacagagctTAG

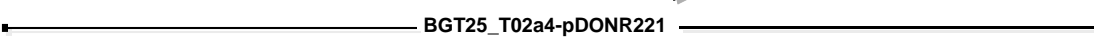
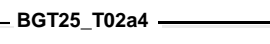
5390



G H H H H H H H H H S S G H I E G R H M L E S  
 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

5' AACAAAGTTTGTACAAAAAAGCAGGCTctgaaaacttgtactttcaaggcATCGAGCGCGCCCGAGCGCTG  
 0 ++++++  
 3' TTGTTCAAACATGTTTTTTTCGTCCGAgacttttgaacatgaaagtTccgTAGCTCGCGGGGCTCGCGAC

5460



T S L Y K K A G S E N L Y F Q G I E R A R A L  
 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

5' TTGCACGGTGCCGGCGACACGCCGGTATTCACCTGCCGCCACGCCTCCGGGCGCCGTACCGATGCCAGATC  
 0 ++++++  
 3' AACGTGCCACGGCCGCTGTGCGGCCATAAGTGACGGCGGTGCGGAGGCCCGCGGCATGGCTACGGTCTAG

5530

BGT25\_T02a4

BGT25\_T02a4-pDONR221

L H G A G D T P V F T A A T P P G A V P M P D  
 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71



BGT25\_T02a4-pET16-DEST

5' GACATGTCGAGCCGCCGCAAATTCACCTAATAAACTTGGACAGCAGCGTCGAGCGCTGGCGCAAATATCA  
 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
 3' CTGTACAGCTCGGCGGCGTTTAAGTGGATTATTTGAACCTGTTCGTCGCAGCTCGCGACCCGCGTTTATAGT

----- BGT25\_T02a4 -----  
 ----- BGT25\_T02a4-pDONR221 -----

5600

R H V E P P Q I H L I N L D S S V E R W R K Y Q  
 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95

SgrDI

5' AGATAGGAATCCTCATCTAGCCGCCAATAACAATTCGGGTATCGGCCGTCGACGGAGCATCCCTCGATAGG  
 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
 3' TCTATCCTTAGGAGTAGATCGGCGGTTATGTTAAGCCCATAGCCGCGCAGCTGCCTCGTAGGGAGCTATCC

----- BGT25\_T02a4 -----  
 ----- BGT25\_T02a4-pDONR221 -----

5670

D R N P H L A A N T I R V S A V D G A S L D R  
 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118

5' TCGACCTTGCAAGCCTTGGTGGACGATGGAGTGATTGCCGAGGATTGCGGGTATCTGCCGGGCGCATTGG  
 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
 3' AGCTGGAACGTTTCGGAACCACCTGCTACCTCACTAACGGCTCCTAACGCCCATAGACGGCCCGCGTAACC

----- BGT25\_T02a4 -----  
 ----- BGT25\_T02a4-pDONR221 -----

5740

S T L Q A L V D D G V I A E D C G Y L P G A L  
 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141

5' GATGTGCTCTATCGCACATCAACTTGTGGAAGTTAGCGGTATCCGAGAAGCGCCAATTACCATTTTCGA  
 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
 3' CTACACGAGATAGCGTGTAGTTGAACACCTTCAATCGCCATAGGCTCTTCGCCGGTTAATGGTAAAAGCT

----- BGT25\_T02a4 -----  
 ----- BGT25\_T02a4-pDONR221 -----

5810

G C A L S H I N L W K L A V S E K R P I T I F E  
 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165

BseRI

5' GGACGACGTCTACTCGTCGTTCAACTTTCTTGAGGAGTCGACTCGCATTCTGTCCATGGCTCCAGAGAAC  
 +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+  
 3' CCTGCTGCAGATGAGCAGCAAGTTGAAAGAACTCCTCAGCTGAGCGTAAGACAGGTACCGAGGTCTCTTG

----- BGT25\_T02a4 -----  
 ----- BGT25\_T02a4-pDONR221 -----

5880

D D V Y S S F N F L E E S T R I L S M A P E N  
 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188

BGT25\_T02a4-pET16-DEST

5' TGGGATATGGTAAAGTGGGGATTCAATTTTCGACCCTCTATTCTGTGGTTGAACTTCGATTTCTCCAAAG  
 3' ACCCTATAACCATTTACCCCTAAGTTAAAGCTGGGAGATAAGGACACCAACTTGAAGCTAAAGAGGTTTC

AjuI'

5950

BGT25\_T02a4

BGT25\_T02a4-pDONR221

W D M V K W G F N F D P L F L W L N F D F S K  
 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211

5' CCAAGCTGGAGTTCTACAACCGACAACACAAACAGATTCCGGCCCAATTTCAATCTGAAACCTATCCGCG  
 3' GGTTTCGACCTCAAGATGTTGGCTGTTGTGTTTGTCTAAGGCCGGGTTAAAGTTAGACTTTGGATAGGCGC

AjuI

6020

BGT25\_T02a4

BGT25\_T02a4-pDONR221

A K L E F Y N R Q H K Q I P A Q F Q S E T Y P R  
 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235

5' ATCTCTTATCCGACTAGTCCATTCCTTTGGTGCAATGGCTTATTCAGTAACTCCAAGGGGAGCTCAAGTA  
 3' TAGAGAATAGGCTGATCAGGTAAGGAAACCACGTTACCGAATAAGTCATTGAGGTTCCCCTCGAGTTCAT

SpeI

EcoICRI  
SacI

6090

BGT25\_T02a4

BGT25\_T02a4-pDONR221

S L I R L V H S F G A M A Y S V T P R G A Q V  
 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258

5' CTTCTTGAAAAATGCCTACCTCTTCGAAAGCGGCTTATTCGGTTTCCTGGGACTGGAGTGGTCCTCGAGG  
 3' GAAGAACTTTTTACGGATGGAGAAGCTTTCGCCGAATAAGGCAAAGGACCCTGACCTCACCAGGAGCTCC

BstBI

AbsI  
PspXI  
XhoI

6160

BGT25\_T02a4

BGT25\_T02a4-pDONR221

L L E K C L P L R K R L I P F P G T G V V L E  
 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281

BGT25\_T02a4-pET16-DEST

0  
 5' ATGAGGGCATCGACTGCGCAATGTCCGCGGTGTATGACTCGATGCATGCGTTCGTCTGCATGCCGCCACT  
 0  
 3' TACTCCCGTAGCTGACGCGTTACAGGCGCCACATACTGAGCTACGTACGCAAGCAGACGTACGGCGGTGA  
 0  
 BGT25\_T02a4  
 0  
 BGT25\_T02a4-pDONR221

6230

D E G I D C A M S A V Y D S M H A F V C M P P L  
 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305  
 0  
 5' GGTCATTCACGACGACGAGCAGGCATCAGATCGGGAAGTCGCGAATCGGCAGTAGGACCCAGCTTTCTTG  
 0  
 3' CCAGTAAGTGCTGCTGCTCGTCCGTAGTCTAGCCCTTCAGCGCTTAGCCGTCATCCTGGGTGAAAGAAC  
 0  
 BGT25\_T02a4  
 attB2  
 0  
 BGT25\_T02a4-pDONR221

6300

V I H D D E Q A S D R E V A N R Q .  
 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323

0  
 5' TACAAAGTGGTTGATtcgaggatccggctgctaacaaagcccgaaaggaagctgagttggctgctgccac  
 0  
 3' ATGTTTCACCAACTAagctcctaggccgacgattgtttcgggctttccttcgactcaaccgacgacggtg  
 0  
 attB2

6370

0  
 5' cgctgagcaataactagcataacccttggggcctctaaacgggtcttgaggggttttttgctgaaagga  
 0  
 3' gcgactcgttattgatcgatattgggggaaccccgagatttgcccagaactccccaaaaaacgactttcct  
 0  
 T7 Terminator

6440

0  
 5' ggaactatatccggatatacccgcaagaggccggcagtagccgataaccaagcctatgcctacagcatc  
 0  
 3' ccttgatataggcctataggcgcttctccgggcccgtcatggccgatttggttcggatacggatgtcgtag  
 0  
 5' cagggtgacggtgccgaggatgacgatgagcgcattgttagatttcatacacggtgcctgactgcgtag  
 0  
 3' gtcccactgccacggctcctactgctactcgcgtaacaatctaaagtatgtgccacggactgacgcaatc

6510

6580

0  
 5' caatttaactgtgataaactaccgcattaaagcttatcgatgataagctgtcaaacatgagaa  
 0  
 3' gttaaattgacactatttgatggcgtaatttcgaatagctactattcgacagtttgtactctt  
 0

6643

HindIII Clal EcoRI