











BGH85\_B02b2-pET32-DEST

5' cggggagagggcgggtttgcgtattgggcgccagggtgggtttttcttttcaccagtgagacgggcaacagct  
 3' gcccctctccgccaacgcataaccgcggtcccacaaaaagaaaagtgggtcactctgcccgttgtcga  
 Lac I  
 3780

5' gattgccttcaccgcctggcctgagagagttgcagcaagcgggtccacgctggtttgcccagcaggcg  
 3' ctaacgggaagtggcggaccgggactctctcaacgtcgttcgccagggtgcgaccaaacggggctcgtccgc  
 Lac I  
 3850

5' aaaatcctgtttgatgggtggtaacggcgggatataacatgagctgtcttcggtatcgtcgtatcccact  
 3' ttttaggacaaactaccaccaattgccgcctatatattgtactcgacagaagccatagcagcatagggtga  
 Lac I  
 3920

5' accgagatgtccgcaccaacgcgcagcccggactcggtaatggcgcgcatttgcgccagcgcctatctgat  
 3' tggctctacaggcgtgggttgcgcgctcgggcctgagccattaccgcgcgtaacgcgggtcgcggtagacta  
 Lac I  
 BssHII  
 3990

5' cgttggcaaccagcatcgcagtgggaacgatgccctcattcagcatttgcattggtttgtaaaccgga  
 3' gcaaccgctgggtcgtagcgtcacccttgctacgggagtaagtcgtaaacgtaccaacaacttttggcct  
 Lac I  
 4060

5' catggcactccagtcgccttcccgttccgctatcggctgaatttgattgcgagtgagatatttatgccag  
 3' gtaccgtgaggtcagcgggaagggaaggcgatagccgacttaaactaacgctcactctataaatacggtc  
 Lac I  
 4130

5' ccagccagacgcagacgcgcgagacagaacttaatgggcccgctaacagcgcgatttgctggtgacca  
 3' ggtcggctctgcgtctgcgcggctctgtcttgaattaccggggcgattgtcgcgctaaacgaccactgggt  
 Lac I  
 PspOMI  
 ApaI  
 4200

5' atgcgaccagatgctccacgcccagtcgcgtaccgtcttcatgggagaaaataaactggtgatgggtgt  
 3' tacgctggctctacgaggtgagggtcagcgcgatggcagaagtaccctcttttattatgacaactaccaca  
 Lac I  
 4270

5' ctggtcagagacatcaagaaataacgccggaacattagtgcaggcagcttccacagcaatggcatcctgg  
 3' gaccagtctctgtagttctttattgcggccttgtaatcacgtccgctcgaagggtcgttaccgtaggacc  
 Lac I  
 4340



5' cgcgaaattaatacactcactataggggaattgtgagcggataacaattcccctctagaataatttt  
 3' ggcgctttaattatgctgagtgatatccccttaacactcgcctattgttaaggggagatctttattaa

← T7 Promoter →
← Lac Operator →

XbaI

5180

5' gtttaactttaagaaggagatatacatatgagcggataaaattattcacctgactgacgacagttttgaca  
 3' caaattgaaattcttcctctatatgtataactcgcctattttaataagtggactgactgctgtcaaaactgt

Trx Tag

M	S	D	K	I	I	H	L	T	D	D	S	F	D
1	2	3	4	5	6	7	8	9	10	11	12	13	14

5250

5' cggatgtactcaaagcggacggggcgatcctcgtcgatttctgggcagagtgggtgcgggtccgtgcaaaat  
 3' gcctacatgagtttcgctgccccgctaggagcagctaaagaccgctctcaccacgccaggcaggtttta

Trx Tag

T	D	V	L	K	A	D	G	A	I	L	V	D	F	W	A	E	W	C	G	P	C	K	M
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38

RsrII

5320

5' gatcgccccgattctggatgaaatcgctgacgaatatcagggcaaaactgaccgttgcaaaactgaacatc  
 3' ctagcggggctaagacctactttagcgcactgcttatagtcctcgcttgactggcaacgttttgacttgtag

Trx Tag

I	A	P	I	L	D	E	I	A	D	E	Y	Q	G	K	L	T	V	A	K	L	N	I
39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

5390

5' gatcaaaaccctggcactgcgccgaaatatggcatccgtggatcccgactctgctgctgttcaaaaacg  
 3' ctagttttgggaccgtgacgcggctttataccgtaggcacatagggctgagacgacgacaagtttttgc

Trx Tag

D	Q	N	P	G	T	A	P	K	Y	G	I	R	G	I	P	T	L	L	L	F	K	N
62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84

5460

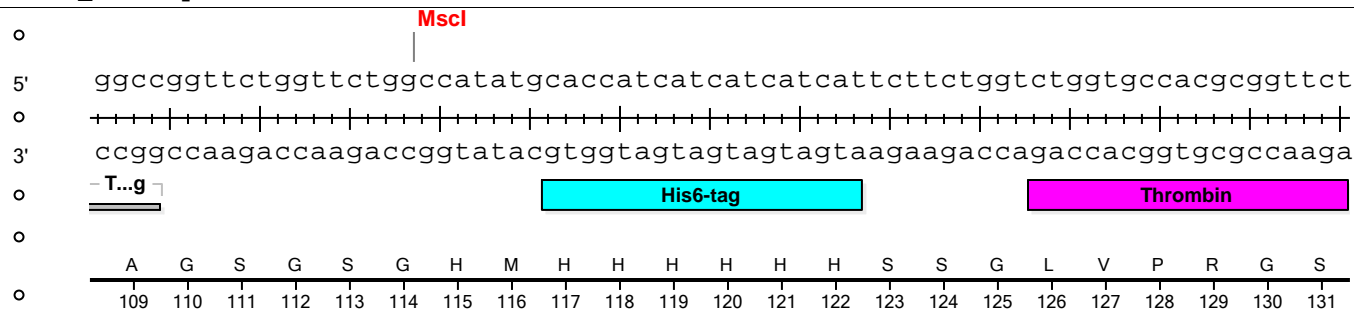
5' gtgaagtggcggcaaccaaagtgggtgcactgtctaaaggtcagttgaaagagttcctcgacgctaacct  
 3' cacttcaccgcccgttggtttcaccacgtgacagatttcagtcactttctcaaggagctgcgattgga

Trx Tag

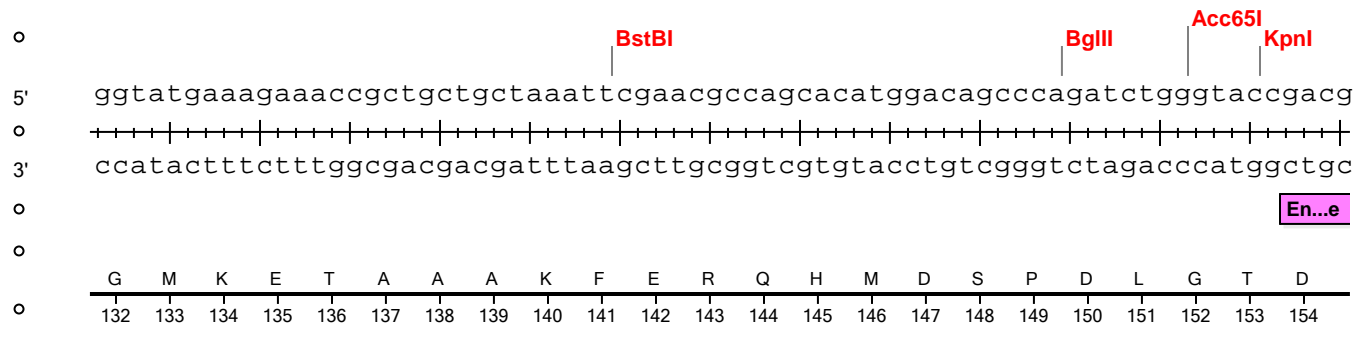
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85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108

5530

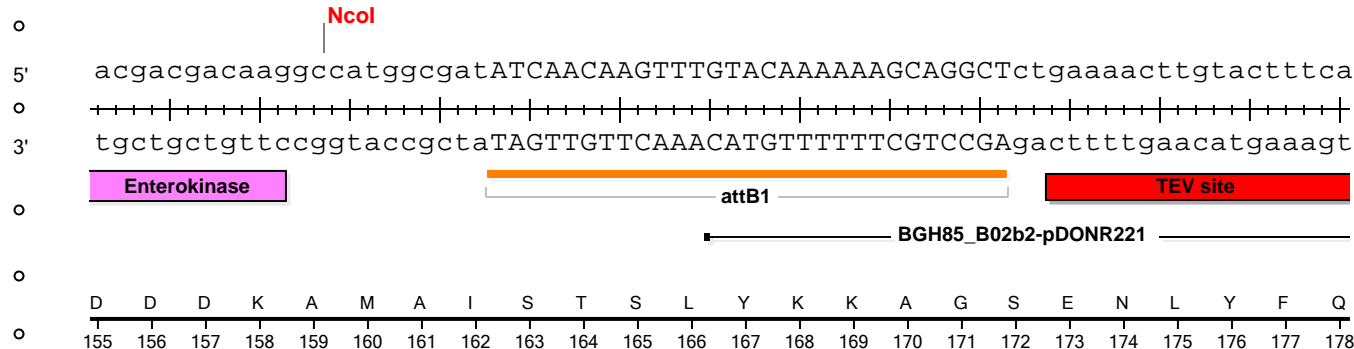




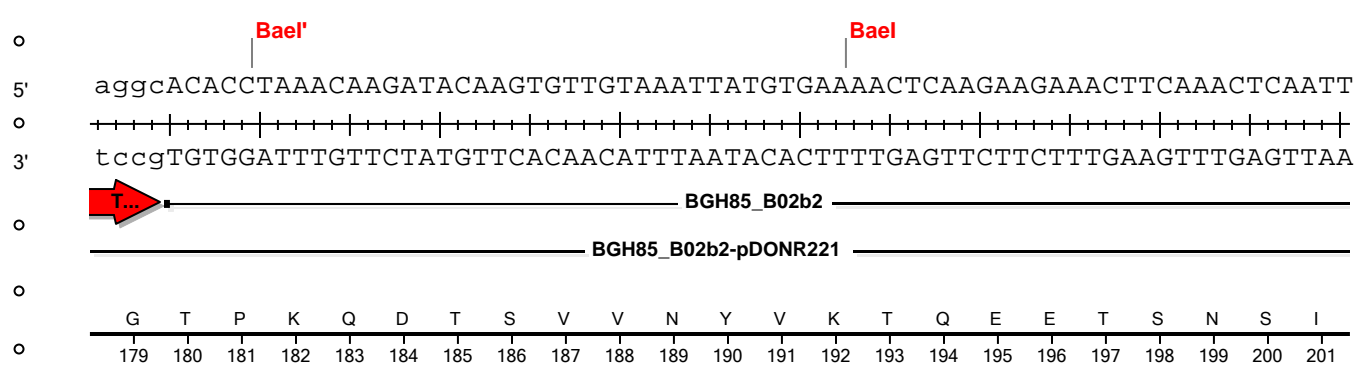
5600



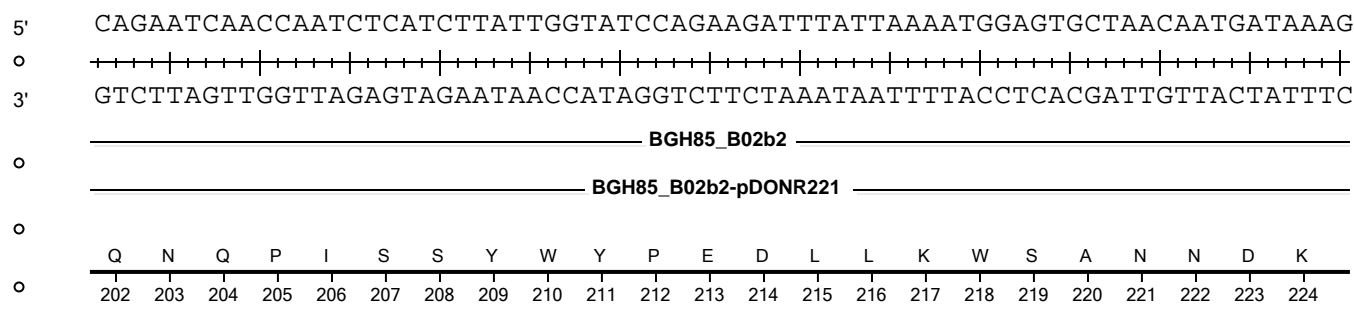
5670



5740



5810



5880

BGH85\_B02b2-pET32-DEST

5' ATGCAAAATTTAATAAAAGCACAGTTCCATTAGCAAAAAGAGTCGAAAAGGATAAACTTGATACTATTAA  
 0 ++++++  
 3' TACGTTTTAAATTATTTTCGTGTCAAGGTAATCGTTTTTCTCAGCTTTTCCTATTTGAACTATGATAATT

5950

BGH85\_B02b2

BGH85\_B02b2-pDONR221

D A K F N K S T V P L A K R V E K D K L D T I N  
 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248

BsmI SpeI

5' TGACACTCAAATAAAGATGTTAAAGTTGTAGCAATTTCAATAATGAATGCTAATACTAGTGGCAATCCA  
 0 ++++++  
 3' ACTGTGAGTTTTATTTCTACAATTTCAACATCGTTAAAGTTATTACTTACGATTATGATCACCGTTAGGT

6020

BGH85\_B02b2

BGH85\_B02b2-pDONR221

D T Q N K D V K V V A I S I M N A N T S G N P  
 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271

5' TCACAAGGTTCAAATAAATTTAGTGCTAATACATTCTCTTATTGGCAATACATAGATAAATTAGTTTACT  
 0 ++++++  
 3' AGTGTCCAAGTTTATTTAAATCACGATTATGTAAGAGAATAACCGTTATGTATCTATTTAATCAAATGA

6090

BGH85\_B02b2

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S Q G S N K F S A N T F S Y W Q Y I D K L V Y  
 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294

5' GGGGTGGATCAGCTGGAGAAGGATTAATAGTTCCCTCCAAGTCCAGATGTTACTGACTCAGCACACAGAAA  
 0 ++++++  
 3' CCCCACCTAGTCGACCTCTTCCTAATTATCAAGGAGGTTTCAGGTCTACAATGACTGAGTCGTGTGTCTTT

6160

BGH85\_B02b2

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W G G S A G E G L I V P P S P D V T D S A H R N  
 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318

5' TGGGGTTCCTGTTTTAGGTACTGTATTCTTCCTATGACAGCTCATGGTGGAAAAATGGAATGGTTAAAT  
 0 ++++++  
 3' ACCCCAAGGACAAAATCCATGACATAAGAAGGGATACTGTCGAGTACCACCTTTTACCTTACCAATTTA

6230

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BGH85\_B02b2-pDONR221

G V P V L G T V F F P M T A H G G K M E W L N  
 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341

BGH85\_B02b2-pET32-DEST

5' AAATTCCTTGAAAAAGATTCTAATGGAACTTCCCTATAGTAGATAAGTTAATTGAAGTTGCAGAAAAC  
 3' TTTAAGGAACTTTTCTAAGATTACCTTTGAAGGGATATCATCTATTCAATTAACCTTCAACGTCTTTTGA

6300

BGH85\_B02b2

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K F L E K D S N G N F P I V D K L I E V A E N  
 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364

5' ATGGCTTTGATGGTTGGTTCATAAATCAAGAAACAGAAGGAACCTTTAACGCCTGAACA  
 3' TACCGAAACTACCAACCAAGTATTTAGTTCTTTGTCTTCCTTGACTTGTTCTTGGAATTGCGGACTTGT

6370

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Y G F D G W F I N Q E T E G T E Q E P L T P E H  
 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388

5' TGCTAAGCTTATGCAAGAATTAATAAAGCAATTTAAAGCTAAGTCTAATGGAAAATTTGAAATTATGTGG  
 3' ACGATTCGAATACGTTCTTAATTATTTTCGTTAAATTTTCGATTACGATTACCTTTTAACTTTAATACACC

6440

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A K L M Q E L I K Q F K A K S N G K F E I M W  
 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411

5' TATGATTCCATGACAAAAGATGGGGATATGGATTGGCAAATGCTTTAACTGATAAAAATGAATATTTCT  
 3' ATACTAAGGTACTGTTTTCTACCCCTATACCTAACCGTTTTACGAAATTGACTATTTTACTTATAAAGA

6510

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Y D S M T K D G D M D W Q N A L T D K N E Y F  
 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434

5' TATTAGATGGAGATAAAAACAAAGTTGCTGATAGTATGTTCTTAAATTTCTGGTGGACATATAATAGTTT  
 3' ATAATCTACCTCTATTTTTGTTTCAACGACTATCATAACAAGAATTTAAAGACCACCTGTATATTATCAAA

6580

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L L D G D K N K V A D S M F L N F W W T Y N S L  
 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458



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5' CAACTAACTTTAATATGGGTAATGGATATGATTTTTATGTTGATGGTAATAAAGTATCTACTCAAGATTG  
 0 ++++++  
 3' GTTGATTGAAATTATACCCATTACCTATACTAAAAATACAACCTACCATTATTTTCATAGATGAGTTCTAAC

7000

BGH85\_B02b2

BGH85\_B02b2-pDONR221

T T N F N M G N G Y D F Y V D G N K V S T Q D W  
 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598

5' GAATAATAGAAGTTTAAATGATATAATGCCAACTTACAGATGGGTTATTTCAAATGAAGAAAATAATAAT  
 0 ++++++  
 3' CTTATTATCTTCAAATTTACTATATTACGGTTGAATGTCTACCCAATAAAGTTTACTTCTTTTATTATTA

7070

BGH85\_B02b2

BGH85\_B02b2-pDONR221

N N R S L N D I M P T Y R W V I S N E E N N N  
 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621

5' GTAAAAGCTGCATAGATTATACTAATGCTTACTATGGTGGTAACTCAATTAACTTTCTGGTTACCTAG  
 0 ++++++  
 3' CATTTCGACTGTATCTAATATGATTACGAATGATACCACCATTGAGTTAATTTGAAAGACCAATGGATC

7140

BGH85\_B02b2

BGH85\_B02b2-pDONR221

V K A D I D Y T N A Y Y G G N S I K L S G Y L  
 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644

5' CTGAAGGAAAAGCTTCTACAATAAACTTTATAGTTCTGATTTGACTTTACCTGAAGGTGTACAATTCAC  
 0 ++++++  
 3' GACTTCCTTTTCGAAGATGTTATTTTGAAATATCAAGACTAACTGAAATGGACTTCCACATGTTAAGTG

7210

BGH85\_B02b2

BGH85\_B02b2-pDONR221

A E G K A S T I K L Y S S D L T L P E G V Q F T  
 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668

5' TACTACTGCTAAGGCTAATGGAAATACTGTAGATATGGATTTAGTTCTTACATTCCATGATGGTACAGAA  
 0 ++++++  
 3' ATGATGACGATTCCGATTACCTTTATGACATCTATACTAAATCAAGAATGTAAGGTACTACCATGTCTT

7280

BGH85\_B02b2

BGH85\_B02b2-pDONR221

T T A K A N G N T V D M D L V L T F H D G T E  
 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691



