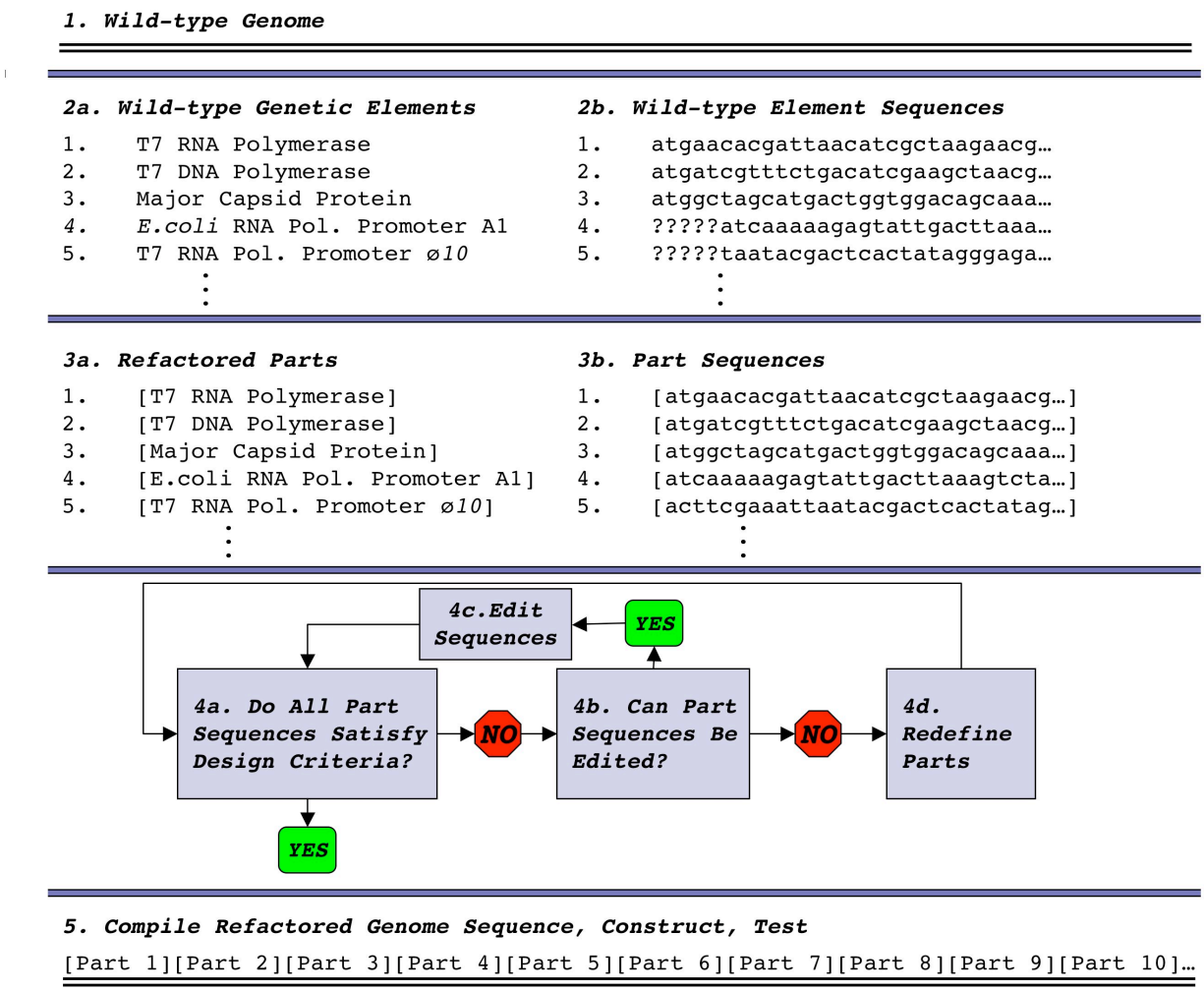
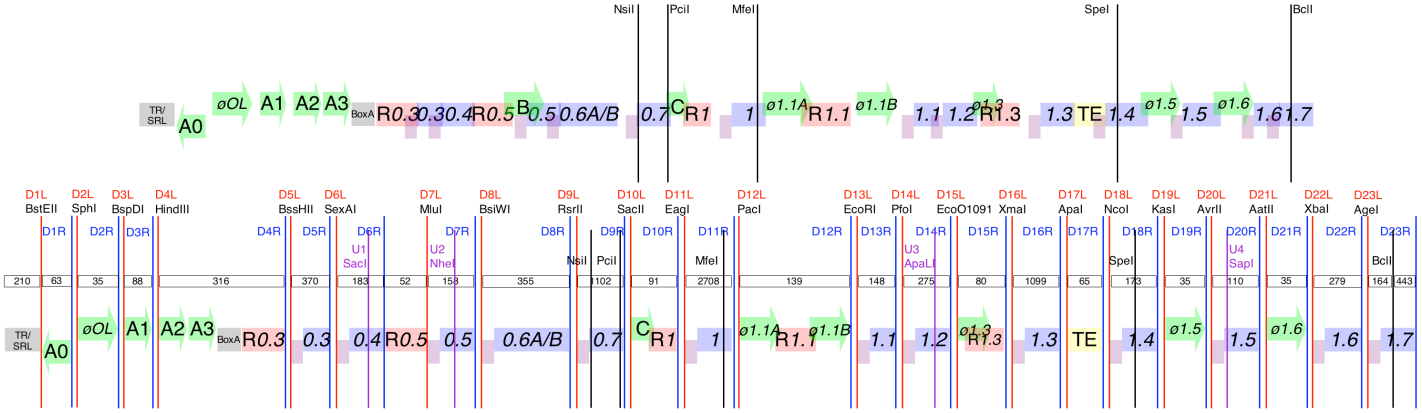


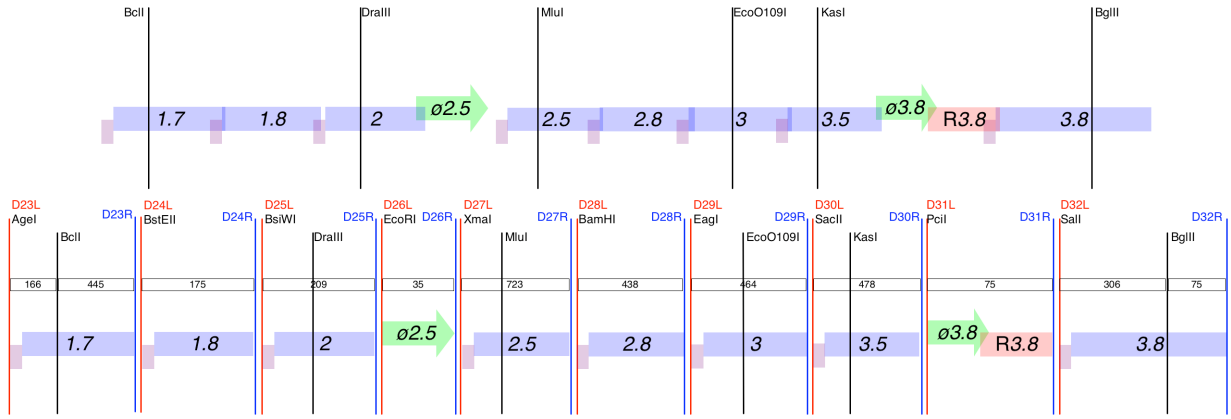
Figure S1. Genome design algorithm. Step 1. Obtain the DNA sequence of the genome of a natural biological system. Step 2. Annotate the genome, (a) listing all known biological functions and (b) their known or putative coding sequence(s). Step 3. Independent of steps 1 and 2, (a) list all desired higher-level functions to be encoded in the engineered genome and (b) define the DNA sequence encoding each function as a part; edit the DNA sequence of parts in order to meet any sequence design rules (e.g., one function per part). Step 4. Check and, as necessary, redefine part sequences and boundaries until all design criteria are met. Step 5. Compile edited parts into a genome, construct, and test.

Figure S2. Genome design. We split the wild-type T7 genome into six sections, alpha through zêta, using five restriction sites unique across the natural sequence. Each section shown here has a wild-type section with representations of the genetic elements: protein coding regions (blue), ribosome binding sites (purple), promoters (green), RNase III recognition sites (pink), transcription terminators (yellow), and others (gray). Elements are labeled by convention [7]. Images are not to scale, but overlapping boundaries indicate elements with shared sequence. The useful natural restriction sites across each section are shown (black lines). T7.1 sections are shown below the wild-type sections. Parts are given integer numbers, 1 through 73, starting at the left end of the genome. Unique restriction site pairs bracket each part (red/blue lines, labeled D[part #]L/R). Added unique restriction sites (purple lines, U[part #]) and part length (# base pairs, open boxes) are shown.

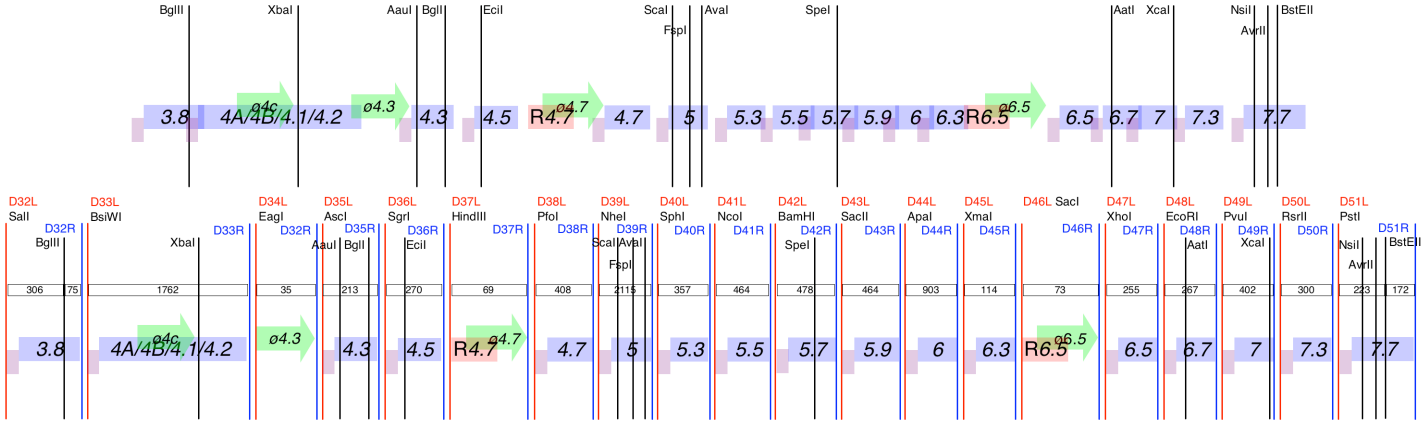
Section *Alpha*



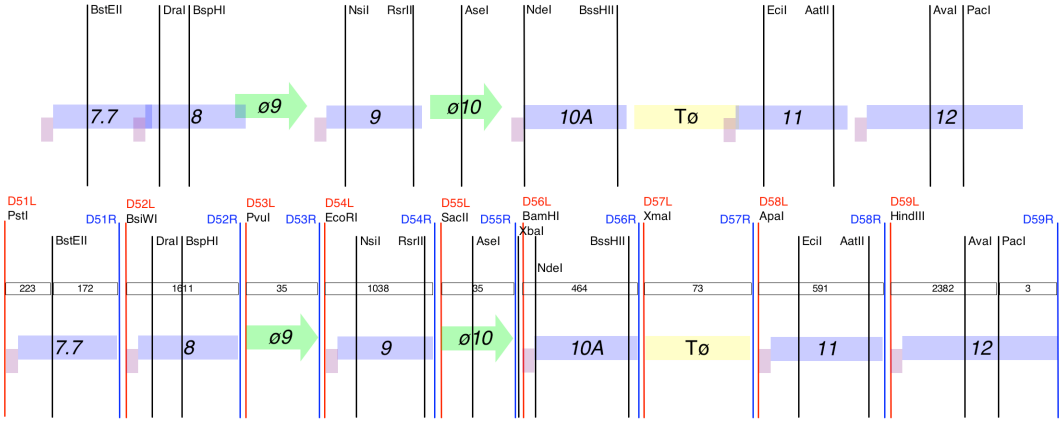
Section *Beta*



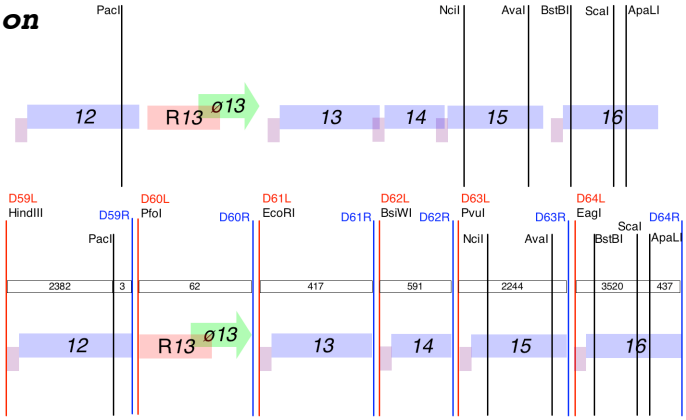
Section *Gamma*



Section *Delta*



Section *Epsilon*



Section *Zêta*

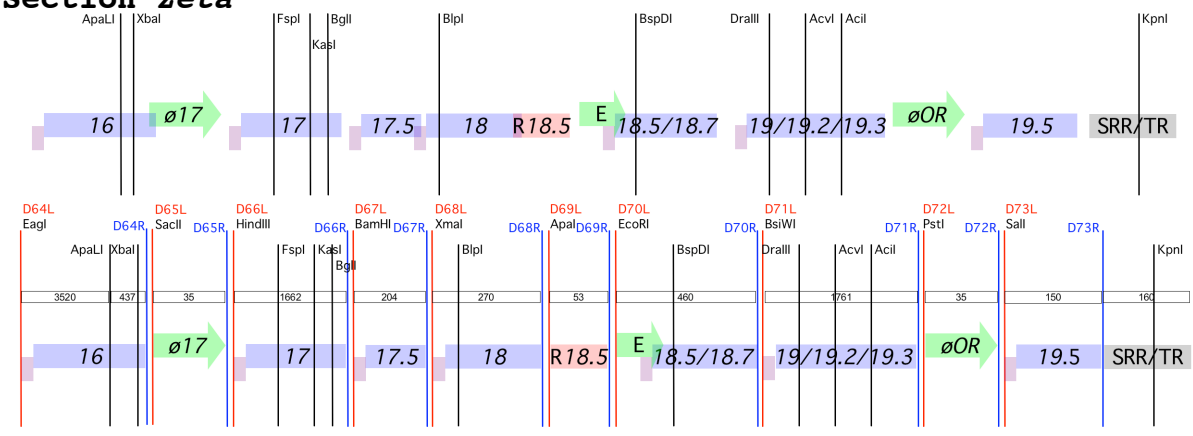


Figure S3. Differences between wild-type T7 and T7.1. A listing from left to right on the T7 genome of the changes made during design of T7.1. Changes are shown by comparison of the annotated wild-type T7 (above) and T7.1 (below) sequences. Point mutations are capitalized. The natural ribosome binding sites are underlined. The bracketing restriction sites surrounding parts are orange (left cutter) and blue (right cutter), with overlaps of neighboring bracketing restriction sites in light green. Other features include start codons (green), stop codons (red), and overlaps of start and stop codons (purple).

Changes in Section *Alpha*

LeftEnd-Part1: TR-SRL/A0

```
T7:       gagtgtctctctgtgtccctatctgttacagtctcctaaagtatcctcct
          ------TR---------->             <-------SRL-----
T7.1:     gagtgtctctctgtgtccctatcGgttacGtctcctaaagtatcctcct
          ------TR---------->    <-D1L->    <-------SRL-----
```

Part1-Part2: SRL/A0-*øOL*

```
T7:       acctaaagacgccttgttgttagccataaagtgataacctttaatcattgtctttattaa
          --SRL-->                                    <-----øOL----
T7.1:     acctaagGTTaccgcatgcttgttgttagccataaagtgataacctttaatcattgtctttattaa
          --SRL-->      <D2L->                              <-----øOL----
                <-D1R->
```

Part2-Part3: *øOL*-A1

```
T7:       aaggagagacaacttaaagagacttaaaagattaatttaaaatttatcaaaaag
          ---ø0L-->                                 <---A1---
T7.1:     aaggagagacaacttaaagagCAtgcttaaaagattaatcgattaaaatttatcaaaaag
          ---øOL-->           <D2R->          <D3L->        <---A1---
```

Part3-Part4: A1-A2/A3/BoxA/R*0.3*

```
T7:       gagagggacacggcgaatagccatcccaatcgacaccggggtcaaccggataagtagacagcctgataagtcgcacgaaaaacagg
          ----A1---->                                                                 <----A2----
T7.1:     gagagggacacggcgaatagccatcccaatcgaTaccggggtcaaccggataagtagaAagcTtgataagtcgcacgaaaaacagg
          ----A1---->               <D3R->                        <D4L->          <----A2----
```

Part4-Part5: A2/A3/BoxA/R*0.3*-*0.3*

```
T7:       gatattcactaataactgcacgaggtaacacaagatggctatgtctaaca
          ---R0.3--->       <-0.3RBS->     <------0.3------
T7.1:     gatattcactaagcttgcgcgctgcacgaggtaacacaagatggctatgtctaaca
          ---R0.3--->     <D5L->   <-0.3RBS->     <------0.3------
                    <D4R->
```

Part5-Part6: *0.3*-*0.4*

```
T7:       cgaggagtacgaggaggatgaagagtaatgtctactacc
          -------------0.3----------->
                   <-0.4RBS->        <----0.4----
T7.1:     cgaggagtacgaggaggaCgaagagtaagcgcgcaccaggtcgaggagtacgaggaggatgaagagtaatgtctactacc
          -------------0.3----------><D5R-><-D6L->         <-0.4RBS->        <----0.4----
```

U1-R0.5: U1/*0.4*-R*0.5*

```
T7:       caaagaactgtacgaaaacaacaaggcaatagctttagaatctgctgagtgatagactcaaggtc
          ----------------------------------------------0.4---->
                                                        <-------R0.5-------
T7.1:     caaagaGctCtacgaaaacaacaaggcaatagctttagaatctgctgagtgaaccaggtgagtgatagactcaaggtc
          ----------------------------------------------0.4----><-D6R-><-------R0.5-------
              <-U1->
```

R0.5-Part7: R*0.5*-*0.5*

```
T7:       gcctttatgattatcactttacttatgaggagtaatgtatatgctt
          -------R0.5------->      <-0.5RBS-><----0.5----
T7.1:     gcctttatgattatcacttacgcgtcttatgaggagtaatgtatatgctt
          -------R0.5-------><D7L->    <-0.5RBS-><----0.5----
```

U2

```
T7:       gctctaggtctagctgtaggtgcatcc
          ---------------0.5---------
T7.1:     gctctaggGctagctgtaggtgcatcc
          ---------------0.5---------
                    <-U2->
```

Part7-Part8: 0.5-0.6A/B

```
T7:       catcaaaggggcactacgcaaatgatgaagcac
          ---------0.5------------>
             <-0.6RBS->         <----0.6----
T7.1:     catcaaaggCgcactacgcaaatAaacgcgtacgcaaaggggcactacgcaaatgatgaagcac
          ---------0.5------------><D7R->   <-0.6RBS->        <----0.6----
                                    <D8L->
```

Part8-Part9: 0.6A/B-0.7

```
T7:
          aacaggcactagccaacacactgaacgctatctcataacgaacataaaggacacaatgcaatgaacattacc
          ----0.6---->                                    <-0.7RBS->      <----0.7----
T7.1:
          aacaggcactagcgtacggtccgcgaacataaaggacacaatgcaatgaacattacc
          ----0.6----><D8R->           <-0.7RBS->      <----0.7----
                        <-D9L->
```

Part9-Part10: *0.7*-C/R*1*

```
T7:       caacattgataagcaacttgacgcaatgttaatgggctgatagtcttatct
          -------------------0.7-----------------> <----R1---
              <-------------------------C----------------------
T7.1:     caacattgataagcaacttgacgcaatgttaatgggctgacggtccgccgcggattgataagcaacttgacgcaatgttaatgggctgatagtcttatct
          -------------------0.7----------------><-D9R-><D10L><-------------------------C----------------------
                                                                                                  <----R1---
```

Part10-Part11: C/R*1*-*1*

```
T7:       ataggtacgatttactaactggaagaggcactaaatgaacacgatt
          ----R1-----><-1RBS->    <-----1-----
T7.1:     ataggtacgatttactaaccgcggccgctggaagaggcactaaatgaacacgatt
          ----R1-----><D10R>      <-1RBS->    <-----1-----
                        <D11L>
```

Part11-Part12: *1*-*ø1.1*A/R*1.1*/*ø1.1*B

```
T7:       gcgttcgcgtaacgccaaatcaatacgactcactatagagggacaaac
          -----1-----><---R1.1----
                    <----------------ø1.1A---------------->
T7.1:     gcgttcgcgtaacggccgttaattaaaacgccaaatcaatacgactcactatagagggacaaac
          -----1-----><DllR><-D12L-><----------------ø1.1A---------------->
                                                      <---R1.1----
```

Part12-Part13: *ø1.1*A/R*1.1*/*ø1.1*B-*1.1*

```
T7:       tataggagaaccttaaggtttaactttaagacccttaagtgttaattagagatttaaattaaagaattactaagaggactttaagtatgcgtaacttc
          ---ø1.1B--->                                                                <-1.1RBS->      <----1.1----
T7.1:     tataggagaaccttaaggtttaactttaagacccttaagtgttaattaAagatttaaattaaagaattCctaagaggactttaagtatgcgtaacttc
          ---ø1.1B--->                                <-D12R->             <D13L>   <-1.1RBS->      <----1.1----
```

Part13-Part14: *1.1*-*1.2*

```
T7:       ctgggaggtcagtaagatggacgttta
          ------1.1------> <----1.2----
          <-1.2RBS->
T7.1:     ctgggagggtcagtaagaattccaggactgggagggtcagtaagatgggacgttta
          ------1.1------><D13R>     <-1.2RBS->       <----1.2----
                           <D14L->
```

U3

```
T7:       gacgaggacgttctgttcaatatgtgtactgattggttgaaccat
          ----------1.2-----------------------------------
T7.1:     gacgaggacgttctgttcaatatgtgCactgattggttgaaccat
          ----------1.2-----------------------------------
                               <-U3->
```

Part14-Part15: *1.2*-*ø1.3*/R*1.3*

```
T7:       gttgaaggactggaagtaatacgactcagtatagggacaa
          --------1.2------->          <---R1.3---
               <---------------ø1.3---------------
T7.1:     gttgaaggactggaagtaatccaggacccggactggaagtaatacgactcagtatagggacaa
          --------1.2-------><D14R->   <---------------ø1.3---------------
                              <D15L->                     <---R1.3---
```

Part15-Part16: *ø1.3*/R*1.3*-*1.3*

```
T7:       atttaaccaataggagataaacattatgatgaacatt
          ----R1.3--->             <----1.3----
                    <-1.3RBS->
T7.1:     atttaaccaataggaggacccgggccaataggagataaacattatgatgaacatt
          ----R1.3--->      <D16L>   <-1.3RBS->      <----1.3----
                       <D15L->
```

Part16-Part17: *1.3*-TE

```
T7:       agagaaaatgtaatcacactggctcaccttcgggtgggcctt
          -----1.3---->    <----------TE------------
T7.1:     agagaaaatgtaacccgggcccaaaatgtaatcacactggctcaccttcgggtgggcctt
          -----1.3----><D16R>               <----------TE------------
                        <D17L>
```

Part17-Part18: TE-*1.4*

```
T7:       gcctttctgcgtttataaggagacactttatgtttaagaag
          -TE-->        <1.4RBS >      <----1.4----
```

```
T7.1:     gcctttcagggaaaacgggccatggttataaggagacactttatgtttaagaag
          -TE-->          <D17R>      <1.4RBS >      <----1.4----
                             <D18L>
```

Part18-Part19: *1.4-ø1.5*

```
T7:       cgtgtggagtatagttaactggtaatacgactcactaaagg
          -----------1.4---------->
                     <---------ø1.5--------------
T7.1:     cgtgtggagtatagttaactggtaatccatggcgccgttaactggtaatacgactcactaaagg
          -----------1.4----------> <D18R>    <---------ø1.5--------------
                                       <D19L>
```

Part19-Part20: *ø1.5-1.5*

```
T7:       taaaggaggtacacaccatgatgtactta
          ----ø1.5--->     <----1.5----
           <-1.5RBS->
T7.1:     taaaggaggtacggcgcctaggcactaaaggaggtacacaccatgatgtactta
          ----ø1.5--->D19R>       <-1.5RBS->      <----1.5----
                         <D20L>
```

U4

```
T7:       gtcattgtaggatgccttgcgctccactgtagcgatgat
          -------1.5------------------------------
T7.1      gtcattgtaggatgccttgcTctTcactgtagcgatgat
          -------1.5------------------------------
                           <-U4-->
```

Part20-Part21: *1.5-ø1.6*

```
T7:       tgccagatggtcacgcttaatacgactcact
          --------1.5-------->
                 <--------ø1.6-----------
T7.1:     tgccagatggtcacgcttaacctaggacgtctggtcacgcttaatacgactcact
          --------1.5--------><D20L>     <--------ø1.6-----------
                                 <D21L>
```

Part21-Part22: *ø1.6-1.6*

```
T7:       taaaggagacactatatgtttcgactt
          ----ø1.6--->   <----1.6----
          <-1.6RBS->
T7.1:     taaaggagacacgacgtctagacactaaaggagacactatatgtttcgactt
          ----ø1.6--->D21R>       <-1.6RBS->     <----1.6----
                         <D22L>
```

Par22-Part23: *1.6-1.7*

```
T7:       tcaaggaggtgttctgatgggactgtta
          -------1.6------>
           <--1.7RBS-->   <----1.7----
T7.1:     tcaaAgaAgtgttctgatctagaaccggttcaaggaggtgttctgatgggactgtta
          -------1.6------><D22R><D23L> <--1.7RBS-->   <----1.7----
```

Changes in Section *Beta*

Part23-Part24: *1.7-1.8*

```
T7:       gaactctttgagaaacataaggataaatgttatgcataacttcaagtca
          -----------------1.7------------------>
                        <-1.8RBS->      <------1.8--------
T7.1:     gaactctttgagaaacataaAgataaatgttaCgcataaccggtgacctctttgagaaacataaggataaatgttatgcataacttcaagtca
          -----------------1.7------------------>  <D24L->           <-1.8RBS->      <-----1.8---------
                                                 <D23R>
```

Part24-Part25: *1.8-2*

```
T7:       gaactttggaaatcgagaggtcaatgactatgtcaaacgta
          ------------1.8----------->  <-----2-----
                        <--RBS-->
T7.1:     gaactttggaaatcgagaggtcaatgaggtcaccgtacgttggaaatcgagaggtcaatgactatgtcaaacgta
          ------------1.8-----------><D24R>               <--2RBS-->     <-----2-----
                                        <D25L>
```

Part25-Part26: *2-ø2.5*

```
T7:       ttgtgtagcaccgaagtaatacgactcactat
          ---------2-------->
                <-----------ø2.5----------
T7.1:     ttgtgtagcaccgaagtaacgtacgaattcagcaccgaagtaatacgactcactat
          ---------2--------><D25R>     <------------ø2.5---------
                                <D26L>
```

Part26-Part27: *ø2.5-2.5*

```
T7:       cactattagggaagactccctctgagaaaccaaacgaaacctaaaggagattaacattatggctaagaag
          -----ø2.5----->                          <-2.5RBS->       <----2.5----
T7.1:     cactattagggaagagaattcccgggcgaaacctaaaggagattaacattatggctaagaag
          -----ø2.5-----><D26R>            <-2.5RBS->       <----2.5----
                            <D27L>
```

Part27-Part28: *2.5-2.8*

```
T7:       gcagacgaagacggagacttctaagtggaactgcgg
          ---------2.5----------><----2.8----
                  <-2.8RBS->
```

```
T7.1:     gcagacgaagacggGgacttctaacccggatccgaagacggagacttctaagtggaactgcgg
          ---------2.5----------><D27R>       <-2.8RBS->     <----2.8----
                                    <D28L>
```

Part28-Part29: *2.8-3*

```
T7:       acgcaaagggaggcgacatggcaggttacggcgctaaaggaatccgaaa
          ----------------2.8----------------->
              <--3RBS-->   <-----------------3---------------
T7.1:     acgcaaGgggagAcgacaCggcaggttacggcgctaaggatccggccgcaaagggaggcgacatggcaggttacggcgctaaaggaatccgaaa
          ----------------2.8----------------><D28R>      <--3RBS-->   <----------------3---------------
                                                <D29L>
```

Part29-Part30: *3-3.5*

```
T7:       gattaaaaaggaaaggaggaaagaaataatggctcgtgta
          ------------3--------------->
                    <-3.5RBS->        <----3.5----
T7.1:     gattaaaaCgCaaGggGggGaagaaataacggccgccgcggaaaggaaaggaggaaagaaataatggctcgtgta
          ------------3---------------><D29R><D30L>    <-3.5RBS->        <----3.5----
```

Part30-Part31: *3.5-ø3.8/R3.8*

```
T7:       tctgaccgtggataattaattgaactcactaaag
          ------3.5----->
                <------------ø3.8-----------
T7.1:     tctgaccgtggataaccgcggacatgtcgtggataattaattgaactcactaaag
          ------3.5-----><D30R><D31R><------------ø3.8-----------
```

Part31-Part32: *ø3.8/R3.8-3.8*

```
T7:       tttccctttgttcgcattggaggtcaaataatgcgcaagtct
          -------R3.8------>             <----3.8----
                          <-3.8RBS->
T7.1:     tttccctttgttcgcattggaggtcaaataatacatgtcgacgaggtcaaataatgcgcaagtct
          -------R3.8------>              <D31R>  <-3.8RBS->   <----3.8----
                                            <D32L>
```

Changes in Section *Gamma*

Part32-Part33: *3.8-4A/4B/4.1/4.2*

```
T7:       tagaactaggagggaattgcatggacaattcgcacgattccgatagtgt
          --------------------3.8----------------------->
                <-4ARBS->     <-------------4A-------------
T7.1:     tagaactagAagAgaattgcaCggacaattcgcacgattccgataggtcgacgtacgctaggagggaattgcatggacaattcgcacgattccgatagtgt
          --------------------3.8----------------------><D32R>      <-4ARBS->     <------------4A--------------
                                                          <D33L>
```

Part33-Part34: *4A/4B/4.1/4.2-ø4.3*

```
T7:       ggagagtcccattctaatacgactcactaaa
          -------4.2------>
              <------------ø4.3----------
T7.1:     ggagagtcccattctaacgtacggccgagtcccattctaatacgactcactaaa
          -------4.2------><D33R>    <------------ø4.3----------
                             <D34L>
```

Part34-Part35: *ø4.3-4.3*

```
T7:       ctaaaggagacacaccatgttcaaactg
          ----ø4.3---->   <----4.3----
           <-4.3RBS->
T7.1:     ctaaaggagacacaccggccgtgcgcgcctaaaggagacacaccatgttcaaactg
          ----ø4.3---->  <D34R>   <D35L> <-4.3RBS->     <----4.3----
```

Part35-Part36: *4.3-4.5*

```
T7:       ttctttgagtaatcaaacaggaggaaaccattatgtctaacgta
          ----4.3----    <-4.5RBS->     <----4.5----
T7.1:     ttctttgagtaatggcgcgccaccggcgaaacaggaggaaaccattatgtctaacgta
          ----4.3---->  <D35R><-D36L->  <-4.5RBS->     <----4.5----
```

Part36-Part37: *4.5-R4.7/ø4.7*

```
T7:       attgataactaagagtggtatcct
          ----4.5----><----R4.7---
T7.1:     attgataactaacaccggcgaagcttaagagtggtatcct
          ----4.5----><-D36R-><D37L> <----R4.7---
```

Part37-Part38: *R4.7/ø4.7-4.7*

```
T7:       ctataggagatattaccatgcgtgaccct
          ----ø4.7----    <----4.7----
            <-4.7RBS->
T7.1:     ctataggagatattaccaagcttcctggactataggagatattaccatgcgtgaccct
          ----ø4.7----    <D37R>        <-4.7RBS->     <----4.7----
                               <D38L->
```

Part38-Part39: *4.7-5*

```
T7:       aagtcacgataatcaataggaggaaatcaatatgatcgtttct
          ----4.7---->   <-5RBS->       <-----5-----
T7.1:     aagtcacgataatcctggagctagcatcaataggaggaaatcaatatgatcgtttct
          ----4.7----><D38R-><D39L>    <-5RBS->       <-----5-----
```

Part39-Part40: *5-5.3*

```
T7:       atttgccactgatacaggaggctactcatgaacgaaaga
          -----5-----> <-5.3RBS->    <----5.3----
T7.1:     atttgccactgagctagcatgctacaggaggctactcatgaacgaaaga
```

```
          -----5-----><D39R>     <-5.3RBS->    <----5.3----
                        <D40L>
```

Part40-Part41: *5.3-5.5*

```
T7:       ataaaactatagqaqaaattattatggctatgaca
          ----5.3----->           <----5.5----
                  <-5.5RBS->
T7.1:     ataaaactatagcatgccatggtataggagaaattattatggctatgaca
          ----5.3----->    <D41L> <-5.5RBS->     <----5.5----
                     <D40R>
```

Part41-Part42: *5.5-5.7*

```
T7:       acgggaggtgttctgatgtctgactac
          ------5.5------>
           <-5.7RBS->    <----5.7----
T7.1:     acgCgaggtgttctgaccatggatccgggaggtgttctgatgtctgactac
          ------5.5------><41R>    <-5.7RBS->    <----5.7----
                            <42L>
```

Part42-Part43: *5.7-5.9*

```
T7:       tgggaggatgtgtctaatgtctcgtgac
          -------5.7------>
          <-5.9RBS->      <----5.9----
T7.1:     tgggCggGtgtgtctaaggatccgcggcgaatgggaggatgtgtctatgtctcgtgac
          -------5.7------><D42R>        <-5.9RBS->     <----5.9----
                             <D43L>
```

Part43-Part44: *5.9-6*

```
T7:       ctagaggagaaacttaatggcacttcttgacc
          ---------------5.9----------->
          <-6RBS->        <--------6------
T7.1:     ctagaAgaAaaacttaaCggcacttcttgaccgcgggcccggaactagaggagaaacttaatggcacttcttgacc
          ---------------5.9-----------><D43R>        <-6RBS->        <--------6------
                                        <D44L>
```

Part44-Part45: *6-6.3*

```
T7:       gacaaggagatttacctgtggagaccgtagcgt
          --------------6-------------->
            <-6.3RBS->     <------6.3------
T7.1:     gacaaggaAatttacctCtggagaccgtaggggcccgggcaaggagatttacctgtggagaccgtagcgt
          --------------6-------------->  <D45L><-6.3-RBS->    <------6.3------
                                         <D44R>
```

Part45-Part46: *6.3-R6.5/ø6.5*

```
T7:       gacactaagtgataaact
          ----6.3---->
                <---R6.5----
T7.1:     gacactaaAtAaacccggagctcactaagtgataaact
          ----6.3----><D45R>        <---R6.5----
                        <D46L>
```

Part46-Part47: *R6.5/ø6.5-6.5*

```
T7:       cgattattactttaagatttaactctaagaggaatctttattatgttaacacct
          ----R6.5---->             <-6.5RBS->       <----6.5----
T7.1:     cgattattactttaagatttaagagctcgagtaagaggaatctttattatgttaacacct
          ----R6.5---->          <D46R>   <-6.5RBS->       <----6.5----
                                   <D47L>
```

Part47-Part48: *6.5-6.7*

```
T7:       tgatggggaggattgacactatgtgtttctca
          ------6.5------>    <----6.7----
            <-6.7RBS->
T7.1:     tgatggCgaAgattgactcgagaattctgatgggggaggattgacactatgtgtttctca
          ------6.5------><D47R>       <-6.7RBS->        <----6.7----
                            <D48L>
```

Part48-Part49: *6.7-7*

```
T7:       tttggaggtaagaagtgatgtctgagttc
          ------6.7-------->
            <-7RBS->       <-----7-----
T7.1:     tttggaggtaagaagtgagaattcgatcgcatttggaggtaagaagtgatgtctgagttc
          ------6.7--------><D48R>         <-7RBS->       <-----7-----
                              <D49L>
```

Part49-Part50: *7-7.3*

```
T7:       ttaaggaggtataagttatgggtaagaaa
          -------7------>   <----7.3----
           <-7.3RBS->
T7.1:     tttaaggaggtataacgatcggtccgctttaaggaggtataagttatgggtaagaaa
          -------7------><D49L>       <-7.3RBS->       <----7.3----
                           <D50R->
```

Part50-Part51: *7.3-7.7*

```
T7:       atcaacatttaatcaggaggttatcgtggaagactgc
          ----7.3----> <-7.7RBS->  <----7.7----
T7.1:     atcaacatttaacggtccgctgcagtcaggaggttatcgtggaagactgc
          ----7.3----><D50R-><D51L> <-7.7RBS->  <----7.7----
```

Changes in Section *Delta*

Part51-Part52: *7.7-8*

```
T7:       gacatggagacacatttaatggctgagaaa
          -------7.7-------->
             <-8RBS->       <-----8-----
T7.1:     gacatggagacacatttaactgcagcgtacgagacatggagacacatttaatggctgagaaa
          -------7.7--------><D51R><D52L>    <-8RBS->       <-----8-----
```

Part52-Part53: *8-ø9*

```
T7:       cagccgggaatttaatacgactcactatag
          -------8------>
            <------------ø9-------------
T7.1:     cagccgggaatttaacgtacgatcgccgggaatttaatacgactcactatag
          -------8------><D52L>   <------------ø9-------------
                         <D53L>
```

Part53-Part54: *ø9-9*

```
T7:       tagggagacctcatctttgaaatgagcgatgacaagaggttggagtcctcggtcttcctgtagttcaacttaaggagacaataataatggctgaat
          ----ø9--->                                                                <-9RBS->         <----9----
T7.1:     tagggagacctcatctttgaaatgagcgatcgacaagaggttggagtcctcggtcttcctgtagaattcaacttaaggagacaataataatggctgaat
          ----ø9--->               <D53R>                              <D54L>    <-9RBS->         <----9----
```

Part54-Part55: *9-ø10*

```
T7:       tcgaacttctgatagacttcgaaatta
          -----9----->   <----ø10----
T7.1:     tcgaacttctgatagaattccgcggacttcgaaatta
          -----9----->  <D54R>     <----ø10----
                        <D55L>
```

Part55-Part56: *ø10-10A/B*

```
T7:       tatagggagaccacaacggtttccctctagaaataatttttgtttaactttaagaaggagatatacatatggctagcatg
          ----ø10---->                                      <-10RBS->       <----10-----
T7.1:     tatagggagaccacaaccgcggatcctctagaaataatttttgtttaactttaagaaggagatatacatatggctagcatg
          ----ø10---->    <D55R>                            <-10RBS->       <----10-----
                           <D56L>
```

Part56-Part57: *10A/B-Tø*

```
T7:       gctgagcaataactagcataacccttggggcct
          ----10----->     <-------Tø-------
T7.1:     gctgagcaataggatcccgggctagcataacccttggggcct
          ----10----><D56R>         <-------Tø-------
                      <D57L>
```

Part57-Part58: *Tø-11*

```
T7:       gtttttgctgaaaggaggaactatatgcgctcata
          --Tø-->   <-11RBS->      <----11----
T7.1:     gtttttgctgacccgggcccgaaaggaggaactatatgcgctcata
          --Tø-->     <D57R>    <-11RBS->      <----11----
                      <D58L>
```

Part58-Part59: *11-12*

```
T7:       tgactcgctaacattaataaataaggaggctctaatggcactcat
          ----11----->         <-12RBS->     <----12----
T7.1      tgactcgctaagggcccaagcttaataaataaggaggctctaatggcactcat
          ----11----><D58R><D59L>     <-12RBS->     <----12----
```

Changes in Section *Epsilon*

Part59-Part60: *12-R13/ø13*

```
T7:       ccggtatttaataaatattctccctgtgg
          ----12----->      <----R13----
T7.1:     ccggtatttaattaaagcttcccggattctccctgtgg
          ----12----->   <D59L>      <----R13----
                         <D60R->
```

Part60-Part61: *R13/ø13-13*

```
T7:       tatagggagaacaatacgactacgggaggtttttcttatgatgactat
          ----ø13----->          <-13RBS->      <----13----
          ----R13--->
T7.1:     tatagggagaacaatactcccggaattctacgggaggtttttcttatgatgactat
          ----ø13----->     <D60R->      <-13RBS->      <----13----
          ----R13--->           <D61L>
```

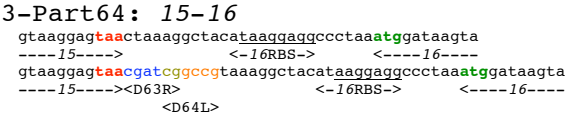
Part61-Part62: *13-14*

```
T7:       acgaaaggaggataaccatatgtgttgggc
          ------13------>    <----14----
             <-14RBS->
T7.1:     acgaaaggCggCtaagaattcgtacgcacgaaaggaggataaccatatgtgttgggc
          ------13------><D61R>         <-14RBS->       <----14----
                          <D62L>
```

Part62-Part63: *14-15*

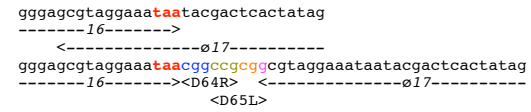
```
T7:       gacgggaggtaatgagctatgagtaaaat
          -----14----->      <----15----
            <-15RBS->
T7.1:     gacCggCaggtaacgtacgatcgccaagacggggaggtaatgagctatgagtaaaat
          -----14-----><D62R>          <-15RBS->        <----15----
```

Part63–Part64: *15–16*

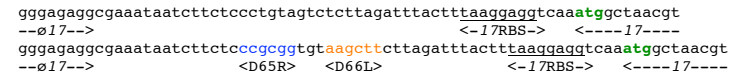


Changes in Section *Zêta*

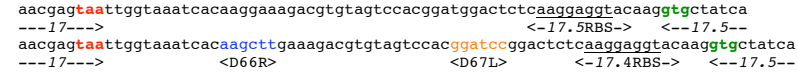
Part64–Part65: *16–ø17*



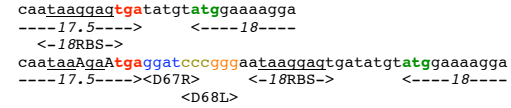
Part65–Part66: *ø17–17*



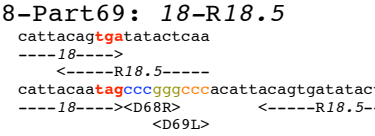
Part66–Part67: *17–17.5*



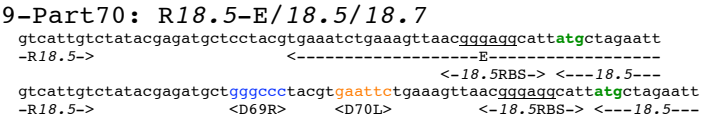
Part67–Part68: *17.5–18*



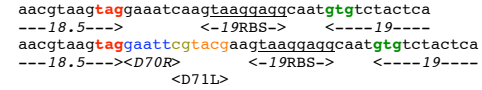
Part68–Part69: *18*–R*18.5*



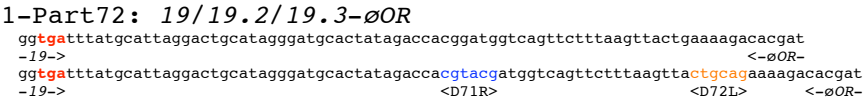
Part69–Part70: R*18.5*–E/*18.5*/*18.7*



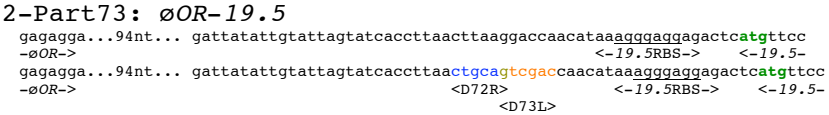
Part70–Part71: E/*18.5*/*18.7*–*19*/*19.2*/*19.3*



Part71–Part72: *19*/*19.2*/*19.3*–*øOR*



Part72–Part73: *øOR*–*19.5*



Part73–SRR/TR: *19.5*–SRR/TR