**Supplemental Information**

1. Modular sender DNA sequences in FASTA format
2. Table S1. Relevant iGEM Registry IDs

**Modular sender DNA sequences in FASTA format**

The following list includes sequences of the open reading frames for the ten synthase proteins used in this study. The FASTA header includes the symbol of the synthase (e.g., RpaI), followed by an abbreviation for the species of origin (e.g., R\_palustris, *R. palustris*), the NCBI Accession number (e.g., WP\_011155888), and length in bp (e.g., 657bp). Start (ATG) and stop (TAA) codons are shown in bold font.

>RpaI\_R\_palustris\_WP\_011155888\_657bp
**ATG**CAGGTGCATGTGATTCGCCGTGAAAACCGCGCGCTGTACGCCGGCCTGTTAGAAAAATACTTTCGCATCCGCCATCAAATTTACGTCGTGGAGCGCGGTTGGAAGGAACTCGACCGTCCAGACGGACGCGAAATTGATCAATTCGATACCGAAGATGCAGTGTACCTGCTGGGTGTTGACAACGATGACATCGTAGCTGGTATGCGTATGGTGCCAACCACCAGCCCAACTCTCCTTAGCGATGTCTTTCCCCAACTGGCGCTGGCGGGGCCGGTGCGCCGTCCGGATGCTTATGAATTGAGTCGTATTTTTGTGGTTCCACGCAAACGTGGTGAGCATGGAGGCCCGCGCGCAGAAGCTGTGATTCAGGCTGCCGCGATGGAATACGGCCTGTCTATTGGCTTGAGTGCCTTTACCATTGTTTTAGAAACGTGGTGGCTGCCCCGTCTGGTGGATCAAGGCTGGAAGGCCAAACCGTTAGGCCTTCCACAGGATATTAATGGTTTTTCGACCACCGCCGTGATTGTGGATGTCGATGATGATGCCTGGGTCGGCATCTGCAACCGCCGTAGTGTGCCGGGGCCGACCTTGGAATGGCGCGGTTTGGAAGCAATCCGCCGCCATAGCCTTCCAGAATTTCAGGTCATCTCT**TAA**

>BraI\_Bradyrhizobium\_ORS278*\_*WP\_011924108\_684bp
**ATG**CCGGAAATTCATGTAGTGCGTAAAGATAACCGCGCCCTGTATGAAAAATATTTTGATCCCTACTACCGTTTACGCCACGAGATCTATGTGAAACAGCGCAAATGGATGGATTTAGACCGCCCGGACGGGCGCGAGATTGATCAGTTCGACACTGAAGATGCGGTCTATCTGTTTTGCATTGATAACGGTCAACTGATTGGTTCAATGCGCGCAGTCCCGACTGTACTGCCGACCTTGATGAGCGATATTTTTCCTTACCTGAATCTGCGTGGCCCGGTTCAGCGCCCTGATGTCTATGAGCTCTCTCGCATTTTCGTAATCCCAGAACGTCGCGGTGAGCATGCTGGCCCGCGTATTGATATGCTGCTGCTGACTGCCATTATGGAATACGGGATTAGCATCGGCCTGACCGGTTTCTCAATCGTCCTTGAAAGCTGGTGGCTCCCCCGTTTCGAAAAATGCGGCTGGAAAGCACGTCCGCTGGGTGTACCCCATATTATGGATGGGATGTCGGTGCTGGCTGTTCTGGTCGATTGCGACGAAACCACATGGAAATCACTGTGCACCCAGATCGGTCTGACCCGTCCTACCTTAACTTGGCAGGGATTAGAGGAAGTGTCTCGCCAAGCTCTCCCTGATATTTTCTTGCACCTGCCACCGGCCGTGCAACCCGCACAG**TAA**

>RhlI\_Pseudomonas\_WP\_003113896\_609bp
**ATG**ATCGAACTGCTGTCCGAATCCCTGGAAGGTCTGTCCGCTGCTATGATCGCTGAACTGGGTCGTTACCGTCACCAGGTTTTCATCGAAAAACTGGGTTGGGACGTTGTTTCCACCTCCCGTGTTCGTGACCAGGAGTTCGACCAGTTCGACCACCCGCAGACCCGTTACATCGTTGCTATGTCCCGTCAGGGTATCTGCGGTTGCGCTCGTCTGCTGCCGACCACCGACGCTTACCTGCTGAAAGACGTTTTCGCTTACCTGTGCTCCGAAACCCCGCCGTCCGACCCGTCCGTTTGGGAACTGTCCCGTTACGCTGCTTCCGCTGCTGACGACCCGCAGCTGGCTATGAAAATCTTCTGGTCCTCCCTCCAGTGCGCTTGGTACCTGGGTGCTTCCTCCGTTGTTGCTGTTACCACCACCGCTATGGAACGTTACTTCGTTCGTAACGGTGTTATCCTCCAGCGTCTGGGTCCGCCGCAGAAAGTTAAAGGTGAAACCCTGGTTGCTATCTCCTTCCCGGCTTACCAGGAACGTGGTCTGGAAATGCTGCTGCGTTACCACCCGGAATGGCTCCAGGGTGTTCCGCTGTCCATGGCTGTTTAA**TAA**

>BjaI\_Bradyrhizobium\_WP\_011083883\_672bp
**ATG**GGCGTATCGATGATTCATGCAATTAGCGCCGTGAACCGCCATCTTTATGAGGATGTACTGGAGCAGCATTTTCGTCTTCGCCATGATATTTTCGTAGAGGAGCGTCACTGGGAAACGCTGCGCCGCCCAGATGGGCGCGAGGTTGATAGTTACGATGATGAAGATACGGTATATCTTTTAGCTTTAGAAGGCCGCCGTGTCGTAGGGGGGCATCGTCTGTATCCGACCACAAAACCGTCCATGATGAGCGAGGTGTTTCCCCATCTCGCTGCAGTGCGTGGCTGTCCCTCGGATCCCCTGATTTGGGAATGGTCACGTTATTTCGTTGTGCGTGACCGTCGTGATGGTGCGCTGAATCTGCAGCTGATGGCCGCGGTACAGGAGTTTTGCCTCGATCAGGGGATTGCCCAAGTGTCCGCCATTATGGAAACATGGTGGCTTCCGCGTTTTCACGAAGCTGGGTTTGTGGTCACACCGCTGGGGTTACCAGCCCTGGTCGAGAATGCCTGGACTATGGCTGCAACAGTTGACATCCGTCGTCAGACCCTGGACGTCCTGCACGATCGTATTGGTATGCCGTCGATCGTCCAACAAGATGGCCCGCGTCTGGATGCAGTAGCGCGTGCAAATCTGTGCGGGCTGGCTGCAGCTCAGCGTAAGTCTGCT**TAA**

>EsaI\_P\_stewartii\_WP\_006119202\_633bp
ATGCTGGAACTGTTTGATGTGTCCTATGAAGAACTGCAAACGACCCGTAGCGAAGAACTGTATAAGCTGCGTAAGAAGACCTTTAGCGATCGTCTGGGCTGGGAAGTGATTTGCAGTCAGGGTATGGAATCCGATGAATTTGACGGTCCGGGCACCCGCTATATTCTGGGCATCTGCGAGGGTCAGCTGGTTTGTTCAGTCCGTTTCACCTCGCTGGATCGCCCGAACATGATTACCCATACGTTTCAACACTGTTTCTCCGACGTCACCCTGCCGGCCTATGGCACGGAAAGCAGCCGTTTCTTTGTGGACAAAGCGCGTGCCCGCGCACTGCTGGGTGAACATTACCCGATCAGCCAGGTGCTGTTTCTGGCTATGGTTAACTGGGCTCAAAACAATGCGTATGGCAATATTTACACCATCGTTAGCCGTGCGATGCTGAAGATTCTGACGCGCTCTGGTTGGCAGATTAAAGTCATCAAGGAAGCCTTCCTGACCGAAAAAGAACGTATCTACCTGCTGACGCTGCCGGCAGGCCAAGATGACAAGCAGCAACTGGGCGGTGATGTGGTTAGTCGCACCGGTTGCCCGCCGGTCGCAGTGACCACGTGGCCGCTGACGCTGCCGGTT**TAA**

>LuxI\_V\_fischeri\_CAA68562\_585bp
**ATG**ACTATAATGATAAAAAAATCGGATTTTTTGGCAATTCCATCGGAGGAGTATAAAGGTATTCTAAGTCTTCGTTATCAAGTGTTTAAGCAAAGACTTGAGTGGGACTTAGTTGTAGAAAATAACCTTGAATCAGATGAGTATGATAACTCAAATGCAGAATATATTTATGCTTGTGATGATACTGAAAATGTAAGTGGATGCTGGCGTTTATTACCTACAACAGGTGATTATATGCTGAAAAGTGTTTTTCCTGAATTGCTTGGTCAACAGAGTGCTCCCAAAGATCCTAATATAGTCGAATTAAGTCGTTTTGCTGTAGGTAAAAATAGCTCAAAGATAAATAACTCTGCTAGTGAAATTACAATGAAACTATTTGAAGCTATATATAAACACGCTGTTAGTCAAGGTATTACAGAATATGTAACAGTAACATCAACAGCAATAGAGCGATTTTTAAAGCGTATTAAAGTTCCTTGTCATCGTATTGGAGACAAAGAAATTCATGTATTAGGTGATACTAAATCGGTTGTATTGTCTATGCCTATTAATGAACAGTTTAAAAAAGCAGTCTTAAATTAA**TAA**

>SinI\_Sinorhizobium\_WP\_003534106\_645bp
**ATG**ATCCGTATTGTAAACGGCAACGGTCGTTCTCAGCACCCTCAGGCCATTGACGAAATGTTTCGCTTACGTAAACGCGTGTTTCATGATTTTCTTAAATGGGATGTTAAAACCGAAGGGGATTGGGAAATTGACCATTACGATAAAGCTAATCCGTTATACGTAATGAGCTATAGTCCAGATACGGGTAAAATCCGTGGTTCTTTGCGTCTGCTGCCCACACTGGGACCGAACATGCTGGATGATACCTTCCCGATTCTGCTGGGTGACAATCCGGAAATTCGCTCTGCTAGCGTCTGGGAATCGAGCCGCTTCTGTATCGATCCAGAAATTAGTCAGGATCGCGCGTCGAACCAAGTAACGATTGCGGCTGCGGAATTAATGTGCGGTGTGGGTGAAATGTCGCTGGCAAGCGGTATCTCGCATATTGTGACCGTCACGGATGTGTTCCTGGAGCGTATGTTCCGTCGCATGGGTTGTCCGGGCGAACGCATTGCAGACCCACACCGCATTGGTTCGGTTCATGCGGTCGCGATTGCGTGGGAAGTGAGTCGCAATCTGCTTGAAACTATGAAGGCTGTCGCCTCCATTGAAGGCACGGTTCTGGATCGTCCCATGTCTTTGGAAACTGCGCGCGCGGCC**TAA**

>AubI\_unknown\_BAM45368\_714bp
**ATG**CGTCGCGTGAAAGACGTGGAGTTCTCCGAAAACGGCTTTGTAGTCAAGACCCTGCATGGCGGTCAATTAGCCCAGTCATACCGTCTGCGTCATAAAGTCTTCGCGGAAAGCTTGAAATGGGTCCCGGAGACTGAGGATCGCCAAGAAATCGACCTGTACGATCTGTGGGCGACCACGGTGGGTTTAGTGCGCGACGACGGGGCTGTGGTGGGTGTGGCGCGTCTGCTTCCAAGCAGTAGTCAGTTCATGCTGGAAAAAGAATTTGGCGCACTTTTGCCTTGCGGATATCAGATCCGTAAAGGTCCGGATACAGCGGAGATCACACGCTTGGCAGTGGACCCTGATATTCGTGATCGCGGGCTGAGTTCCCGCATGATGCTGGCGCTGTTGAAAGGTGTTTATCAGTGGGCGGTAGAAAACGACATCCGTTATTACTACCTGGAGGTGGAACATCGCTTTTTTCGTGCACTGCGTGCCTTGGGCTTTCCATGTGAAATGATTGGCGAACCGGTGGTCCTGCCGCCAGCAGGCGCTAGCAGCGTTGCAGCACTGTATGATATGGTCCGCTTTGATGAAGAAAACGCCATTAAGAAACCACAGTTCCTGAAGTGGATCAGCAGTATCGAGACTCTGCAAGGCGAGGTGATTGCGGGTCGTACGTCCTCCTACGCGAACTCCGAAAAATTAGGCCTGGTGGGCGCCGAGGCC**TAA**

>LasI\_Pseudomonas\_WP\_003083017\_609bp
**ATG**ATCGTTCAGATCGGTCGTCGTGAAGAGTTCGACAAAAAACTGCTGGGTGAAATGCACAAACTGCGTGCTCAGGTTTTCAAAGAACGTAAAGGTTGGGACGTTTCCGTTATCGACGAAATGGAAATCGACGGTTACGACGCTCTGTCCCCGTACTACATGCTGATCCAGGAAGACACCCCGGAAGCTCAGGTTTTCGGTTGCTGGCGTATCTTCGACACCACCGGTCCGTACATGCTGAAAAACACCTTCCCGGAACTGCTGCACGGTAAAGAAGCTCCGTGCTCCCCGCACATCTGGGAACTGTCCCGTTTCGCTATCAACTCCGGTCAGAAAGGTTCCCTGGGTTTCTCCGACTGCACCCTGGAAGCTATGCGTGCTCTGGCTCGTTACTCCTTGCAGAACGACATCCAGACCCTGGTTACCGTTACCACCGTTGGTGTTGAAAAAATGATGATCCGTGCTGGTCTGGACGTTTCCCGTTTCGGTCCGCACCTGAAAATCGGTATCGAACGTGCTGTTGCTCTGCGTATCGAACTGAACGCTAAAACCCAGATCGCTCTGTACGGTGGTGTTCTGGTTGAACAGCGTCTGGCTGTTTCCTAA**TAA**

>CerI\_R\_sphaeroides\_WP\_011338011\_634bp
**ATG**ATCTTCATTATTGACAGCCTTAACTTGCGCGAGCACGCTGACATCGTCAAAGACATGTTCCGCTTGCGCAAGCGTGTCTTCGCTGATCGCCTGGGTTGGGATGTACAAATCTCTCAAGGAATGGAACGCGACCGCTTCGATGACTTGGACCCCGCGCATGTTGTGAGTGTGGATGATGAAGGTCGTGTCGTAGGGTGTATGCGCCTGTTGCAAACCACCGGCCCACATATGCTGTCCGACGTGTTTTCGAGTATCCTGGATGGTGAACCGCCGCTGCGTAGCGCCACATTATGGGAAGCGACCCGCTTCTGCGTTGATACTGATCGTCTGGTGTCTGGACGCGCACGTAATAGCATCGCATACGTGACCTCGGAAGTTATGATTGGCGCTTTCGAATTCGCGATGTCCGCGGGCGTGACGGACGCTGTTGCGGTGATTGACCCGGTCATGGACCGTGTGCTGAAACGCTCAGGCAATGCCCCGCAGGGATATGTTGGTACTCCGAAACCCATGGGTAAGGTCACTGCTCTGGCGGCTTTGATGGATTGCTCCGAAGAACGCGTCAAGCGCATTCGCGATTTTGCAGGCATCTATCACGATGTTACCCAACCGCAGACGGTAATCGCT**TAA**C

|  |  |  |
| --- | --- | --- |
| **Part name** | **iGEM Registry part number** | **Contributing iGEM Team** |
| RpaI  | BBa\_K1421006 | iGEM14\_CAU\_China |
| BraI  | BBa\_K2033004 | iGEM16\_Arizona\_State |
| RhlI  | BBa\_C0170 | Antiquity |
| BjaI  | BBa\_K2033002 | iGEM16\_Arizona\_State |
| EsaI  | BBa\_K1670004 | iGEM15\_Manchester-Graz |
| LuxI  | BBa\_C0161 | Antiquity |
| SinI  | BBa\_K2033008 | iGEM16\_Arizona\_State  |
| AubI  | BBa\_K2033000 | iGEM16\_Arizona\_State |
| LasI  | BBa\_C0078 | Antiquity |
| CerI  | BBa\_K2033006 | iGEM16\_Arizona\_State |
| LuxR Receiver | BBa\_F2620 | MIT |

**Table S1.** Relevant iGEM Registry IDs. “Antiquity” indicates that no specific team is known to have contributed the DNA sequence to the Registry. Entries can be accessed at <http://parts.igem.org/>