**Cell-cell communication lab parts:**

**Plasmids with response regulator proteins:**

Arrangement for expression of R genes:

**EcoRI XbaI pTet promoter spacer of 8 StrongRBS (BBa\_0034) spacer of 6 R gene Double Terminator(BBa\_0010-0012) SpeI PstI**

Plasmid **R1** (1028 bp): RhlR (responds to C4HSL)

Plasmid **R2** (989 bp): LuxR (responds to 3OC6HSL)

Plasmid **R3** (964 bp): TraR (responds to 3OC8HSL)

Plasmid **R4** (1118 bp): LasR (responds to 3OC12HSL)

**Plasmid with test promoters:**

Arrangement for testing promoter sequences:

**EcoRI XbaI Double Terminator Test Promoter StrongRBS Gemini Double Terminator SpeI PstI**

Plasmid **P1** (1385 bp) : Plas1 (from PrsaL gene)

Plasmid **P2** (1383 bp): Plas 2 (from PA0572)

Plasmid **P3** (1392 bp): Plas 3 (from PA3904)

Plasmid **P4** (1452 bp): Plas 4 (from PA4677)

Plasmid **P5** (1405 bp): Plas 5 (from PA1897)

Plasmid **P6** (1379 bp): Prhl 1 (from PA3479)

Plasmid **P7** (1491 bp): Prhl 2 (from PA4217)

Plasmid **P8** (1309 bp): Plux 1 (from PluxI)

Plasmid **P9** (1405 bp): Ptra 1 (from PtraI)

**Literature cited:**

Sequence information for promoters to test came from:

Schuster et al.(2004) PNAS vol. 101(45) 15833-15839.

Whiteley and Greenberg (2001) J Bacteriol. 183(19): 5529–5534.

**Plasmids with response regulator proteins:**

**R1:** Ptet\_rhlR (BBa\_K082021)

GAATTCTCTAGATccctatcagtgatagagattgacatccctatcagtgatagagatactgagcactactagagaaagaggagaaatactagatgaggaatgacggaggctttttgctgtggtgggacggtttgcgtagcgagatgcagccgatccacgacagccagggcgtgttcgccgtcctggaaaaggaagtgcggcgcctgggcttcgattactacgcctatggcgtgcgccacacgattcccttcacccggccgaagaccgaggtccatggcacctatcccaaggcctggctggagcgataccagatgcagaactacggggccgtggatccggcgatcctcaacggcctgcgctcctcggaaatggtggtctggagcgacagcctgttcgaccagagccggatgctctggaacgaggctcgcgattggggcctctgtgtcggcgcgaccttgccgatccgcgcgccgaacaatttgctcagcgtgctttccgtggcgcgcgaccagcagaacatctccagcttcgagcgcgaggaaatccgcctgcggctgcgttgcatgatcgagttgctgacccagaagctgaccgacctggagcatccgatgctgatgtccaacccggtctgcctgagccatcgcgaacgcgagatcctgcaatggaccgccgacggcaagagttccggggaaatcgccatcatcctgagcatctccgagagcacggtgaacttccaccacaagaacatccagaagaagttcgacgcgccgaacaagacgctggctgccgcctacgccgcggcgctgggtctcatcgctgcaaacgacgaaaactacgctttagtagcttaataacactgatagtgctagtgtagatcactactagagccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttataACTAGTCTGCAG

**R2:** Ptet luxR (LuxR from BBa\_C0062)

GAATTCTCTAGATccctatcagtgatagagattgacatccctatcagtgatagagatactgagcactactagagaaagaggagaaatactagatgaaaaacataaatgccgacgacacatacagaataattaataaaattaaagcttgtagaagcaataatgatattaatcaatgcttatctgatatgactaaaatggtacattgtgaatattatttactcgcgatcatttatcctcattctatggttaaatctgatatttcaatcctagataattaccctaaaaaatggaggcaatattatgatgacgctaatttaataaaatatgatcctatagtagattattctaactccaatcattcaccaattaattggaatatatttgaaaacaatgctgtaaataaaaaatctccaaatgtaattaaagaagcgaaaacatcaggtcttatcactgggtttagtttccctattcatacggctaacaatggcttcggaatgcttagttttgcacattcagaaaaagacaactatatagatagtttatttttacatgcgtgtatgaacataccattaattgttccttctctagttgataattatcgaaaaataaatatagcaaataataaatcaaacaacgatttaaccaaaagagaaaaagaatgtttagcgtgggcatgcgaaggaaaaagctcttgggatatttcaaaaatattaggttgcagtgagcgtactgtcactttccatttaaccaatgcgcaaatgaaactcaatacaacaaaccgctgccaaagtatttctaaagcaattttaacaggagcaattgattgcccatactttaaaaattaataaccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttata ACTAGTCTGCAG

**R3:** Ptet traR (TraR BBa\_ BBa\_K553000)

GAATTCTCTAGAtccctatcagtgatagagattgacatccctatcagtgatagagatactgagcactactagagaaagaggagaaatactagaaagaggagaaatactagatgcagcactggctggacaagctgactgatcttgccgcgatcgaaggcgatgagtgcatcctgaagaccgggctggcggacatcgccgaccatttcggcttcaccggctatgcctaccttcatatccagcacaggcacatcaccgccgttaccaactatcaccgccaatggcaatcaacctacttcgacaagaagttcgaagcgctcgatccggtcgtcaaacgcgcgaggtcccggaagcacatcttcacctggtcgggcgagcacgagcggccgacgctgtcgaaggacgagcgtgccttctatgaccacgcatccgatttcggcatccgctccggcatcacaatacccatcaagaccgccaacggctttatgtcgatgttcacgatggcatcggacaagccggtgatcgatctcgatcgggagatcgatgcagtcgcagccgctgcaaccatcgggcagatccatgcccgcatcccattccttcgcaccacccctaccgcggaggatgccgcatggctcgatccgaaggaggccacctatctgagatggattgccgtcggcaagacgatggaggagatcgccgacgtcgaaggggtcaagtacaacagcgtccgcgtcaagctacgcgaagccatgaagcgcttcgacgtccgcagcaaggcccatcttaccgcgctcgCcatccggcggaaactcatctgatactagagccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttataACTAGTCTGCAG

**R4:** Ptet lasR (LasR BBa\_C0079)

GAATTCTCTAGAccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttataTccctatcagtgatagagattgacatccctatcagtgatagagatactgagcactactagagaaagaggagaaatactagatggccttggttgacggttttcttgagctggaacgctcaagtggaaaattggagtggagcgccatcctccagaagatggcgagcgaccttggattctcgaagatcctgttcggcctgttgcctaaggacagccaggactacgagaacgccttcatcgtcggcaactacccggccgcctggcgcgagcattacgaccgggctggctacgcgcgggtcgacccgacggtcagtcactgtacccagagcgtactgccgattttctgggaaccgtccatctaccagacgcgaaagcagcacgagttcttcgaggaagcctcggccgccggcctggtgtatgggctgaccatgccgctgcatggtgctcgcggcgaactcggcgcgctgagcctcagcgtggaagcggaaaaccgggccgaggccaaccgtttcatagagtcggtcctgccgaccctgtggatgctcaaggactacgcactgcaaagcggtgccggactggccttcgaacatccggtcagcaaaccggtggttctgaccagccgggagaaggaagtgttgcagtggtgcgccatcggcaagaccagttgggagatatcggttatctgcaactgctcggaagccaatgtgaacttccatatgggaaatattcggcggaagttcggtgtgacctcccgccgcgtagcggccattatggccgttaatttgggtcttattactctcgctgcaaacgacgaaaactacgctttagtagcttaataaccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttataACTAGTCTGCAG

**Plasmids with test promoters:**

**P1**: (from PrsaL):

GAATTCTCTAGAccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttataCTTCACTTCCTCCAAATAGGAAGCTGAAGAATTTATGCAAATTTCATAATTTTATAACTAGCAAATGAGATAGATTTCGGTGAACCCGGACCCTTGCTAGGCTCGAAGAAACGTCCGAAAAGATCAGAGCAaaagaggagaaatactagatgaccatgattacggattcactggccgtcgttttacaacgtcgtgactgggaaaaccctggcgttacccaacttaatcgccttgcagcacatccccctttcgccagctggcgtaatagcgaagaggcccgcaccgatcgcccttcccaacagttgcgcagcctgaatggcgaatggcgcgcgggcggcagcgaaggcggcggcagcgaacatcatcatcatcatcatggcagcgaacgtaaaggagaagaacttttcactggagttgtcccaattcttgttgaattagatggtgatgttaatgggcacaaattttctgtcagtggagagggtgaaggtgatgcaacatacggaaaacttacccttaaatttatttgcactactggaaaactacctgttccatggccaacacttgtcactaccctgacctatggtgttcaatgctttgcgagatacccagatcatatgaaacagcatgactttttcaagagtgccatgcccgaaggttatgtacaggaaagaactatatttttcaaagatgacgggaactacaagacacgtgctgaagtcaagtttgaaggtgatacccttgttaatagaatcgagttaaaaggtattgattttaaagaagatggaaacattcttggacacaaattggaatacaactataactcacacaatgtatacatcatggcagacaaacaaaagaatggaatcaaagttaacttcaaaattagacacaacattgaagatggaagcgttcaactagcagaccattatcaacaaaatactccaattggcgatggccctgtccttttaccagacaaccattacctgtccacacaatctgccctttcgaaagatcccaacgaaaagagagaccacatggtccttcttgagtttgtaacagctgctgggattacacatggcatggatgaactatacaaataataaccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttata ACTAGTCTGCAG

**P2**: (from PA0572):

GAATTCTCTAGAccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttataCGAACAATCGGTAAAAATAAAATCAAAATAATCAGACGCAGTTCAAAAACAACCAGAACAGATAGTTTTTCCGCCTTTCCCAACATGCTCCTCTCGCCTTGACTCGTTCGATGCAGCGGATCGCCCATGaaagaggagaaatactagatgaccatgattacggattcactggccgtcgttttacaacgtcgtgactgggaaaaccctggcgttacccaacttaatcgccttgcagcacatccccctttcgccagctggcgtaatagcgaagaggcccgcaccgatcgcccttcccaacagttgcgcagcctgaatggcgaatggcgcgcgggcggcagcgaaggcggcggcagcgaacatcatcatcatcatcatggcagcgaacgtaaaggagaagaacttttcactggagttgtcccaattcttgttgaattagatggtgatgttaatgggcacaaattttctgtcagtggagagggtgaaggtgatgcaacatacggaaaacttacccttaaatttatttgcactactggaaaactacctgttccatggccaacacttgtcactaccctgacctatggtgttcaatgctttgcgagatacccagatcatatgaaacagcatgactttttcaagagtgccatgcccgaaggttatgtacaggaaagaactatatttttcaaagatgacgggaactacaagacacgtgctgaagtcaagtttgaaggtgatacccttgttaatagaatcgagttaaaaggtattgattttaaagaagatggaaacattcttggacacaaattggaatacaactataactcacacaatgtatacatcatggcagacaaacaaaagaatggaatcaaagttaacttcaaaattagacacaacattgaagatggaagcgttcaactagcagaccattatcaacaaaatactccaattggcgatggccctgtccttttaccagacaaccattacctgtccacacaatctgccctttcgaaagatcccaacgaaaagagagaccacatggtccttcttgagtttgtaacagctgctgggattacacatggcatggatgaactatacaaataataaccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttata ACTAGTCTGCAG

**P3:** (from PA3904):

GAATTCTCTAGAccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttataAAATCCCTTCAAGCGCAACCAGGCAAGGACGCGGTTGCCCAAGCCGTTTCCGAAGGTGCCTCCTGAGCAGTTCAGATAGGTTGTCCGACCCCGAGTGGCACGGCAGAGTGCCAGGGTTTATCTCATAGGGACTTGAGCaaagaggagaaatactagatgaccatgattacggattcactggccgtcgttttacaacgtcgtgactgggaaaaccctggcgttacccaacttaatcgccttgcagcacatccccctttcgccagctggcgtaatagcgaagaggcccgcaccgatcgcccttcccaacagttgcgcagcctgaatggcgaatggcgcgcgggcggcagcgaaggcggcggcagcgaacatcatcatcatcatcatggcagcgaacgtaaaggagaagaacttttcactggagttgtcccaattcttgttgaattagatggtgatgttaatgggcacaaattttctgtcagtggagagggtgaaggtgatgcaacatacggaaaacttacccttaaatttatttgcactactggaaaactacctgttccatggccaacacttgtcactaccctgacctatggtgttcaatgctttgcgagatacccagatcatatgaaacagcatgactttttcaagagtgccatgcccgaaggttatgtacaggaaagaactatatttttcaaagatgacgggaactacaagacacgtgctgaagtcaagtttgaaggtgatacccttgttaatagaatcgagttaaaaggtattgattttaaagaagatggaaacattcttggacacaaattggaatacaactataactcacacaatgtatacatcatggcagacaaacaaaagaatggaatcaaagttaacttcaaaattagacacaacattgaagatggaagcgttcaactagcagaccattatcaacaaaatactccaattggcgatggccctgtccttttaccagacaaccattacctgtccacacaatctgccctttcgaaagatcccaacgaaaagagagaccacatggtccttcttgagtttgtaacagctgctgggattacacatggcatggatgaactatacaaataataaccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttataACTAGTCTGCAG

**P4:** (from PA4677):

GAATTCTCTAGAccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttataGGCTTGCTCCGCTTCCCTGCCGGCAACTAGCTATCACTTGGAGTAGCTGGCTGGCCTTCTGGCACCGCCGTACCCTTACCAGCATTCCGATTCTCGCCTGCATACCGCAGGCAGGTCCCTTCATGCGGTAACCCTTCGCGGGAGTGCGAAGTCAGGTCGACAGCGGCCGGTGGCAGGATGCGCAGACTGGAGCCCCCCaaagaggagaaatactagatgaccatgattacggattcactggccgtcgttttacaacgtcgtgactgggaaaaccctggcgttacccaacttaatcgccttgcagcacatccccctttcgccagctggcgtaatagcgaagaggcccgcaccgatcgcccttcccaacagttgcgcagcctgaatggcgaatggcgcgcgggcggcagcgaaggcggcggcagcgaacatcatcatcatcatcatggcagcgaacgtaaaggagaagaacttttcactggagttgtcccaattcttgttgaattagatggtgatgttaatgggcacaaattttctgtcagtggagagggtgaaggtgatgcaacatacggaaaacttacccttaaatttatttgcactactggaaaactacctgttccatggccaacacttgtcactaccctgacctatggtgttcaatgctttgcgagatacccagatcatatgaaacagcatgactttttcaagagtgccatgcccgaaggttatgtacaggaaagaactatatttttcaaagatgacgggaactacaagacacgtgctgaagtcaagtttgaaggtgatacccttgttaatagaatcgagttaaaaggtattgattttaaagaagatggaaacattcttggacacaaattggaatacaactataactcacacaatgtatacatcatggcagacaaacaaaagaatggaatcaaagttaacttcaaaattagacacaacattgaagatggaagcgttcaactagcagaccattatcaacaaaatactccaattggcgatggccctgtccttttaccagacaaccattacctgtccacacaatctgccctttcgaaagatcccaacgaaaagagagaccacatggtccttcttgagtttgtaacagctgctgggattacacatggcatggatgaactatacaaataataaccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttataACTAGTCTGCAG

**P5:** (from PA1897):

GAATTCTCTAGAccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttataGACAACAAACCTTGGCCCATGGCGGGCCTCGTCGACGAGGCTCCCCGGGGACCAGAAATGGCAACTACATACTTCCCCCCCTATCTCTCCGCAGATACCTGCCCGGAAGGGCAGGTTGTCCCTGCCGGGCTGTGACAATTTAATTCGACCAaaagaggagaaatactagatgaccatgattacggattcactggccgtcgttttacaacgtcgtgactgggaaaaccctggcgttacccaacttaatcgccttgcagcacatccccctttcgccagctggcgtaatagcgaagaggcccgcaccgatcgcccttcccaacagttgcgcagcctgaatggcgaatggcgcgcgggcggcagcgaaggcggcggcagcgaacatcatcatcatcatcatggcagcgaacgtaaaggagaagaacttttcactggagttgtcccaattcttgttgaattagatggtgatgttaatgggcacaaattttctgtcagtggagagggtgaaggtgatgcaacatacggaaaacttacccttaaatttatttgcactactggaaaactacctgttccatggccaacacttgtcactaccctgacctatggtgttcaatgctttgcgagatacccagatcatatgaaacagcatgactttttcaagagtgccatgcccgaaggttatgtacaggaaagaactatatttttcaaagatgacgggaactacaagacacgtgctgaagtcaagtttgaaggtgatacccttgttaatagaatcgagttaaaaggtattgattttaaagaagatggaaacattcttggacacaaattggaatacaactataactcacacaatgtatacatcatggcagacaaacaaaagaatggaatcaaagttaacttcaaaattagacacaacattgaagatggaagcgttcaactagcagaccattatcaacaaaatactccaattggcgatggccctgtccttttaccagacaaccattacctgtccacacaatctgccctttcgaaagatcccaacgaaaagagagaccacatggtccttcttgagtttgtaacagctgctgggattacacatggcatggatgaactatacaaataataaccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttata ACTAGTCTGCAG

**P6:** (from PA3479):

GAATTCTCTAGAccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttataCCCCGCCGGCCGCTCTGGCACGCCTTATCGCGGGCGGGCAGGGGCTTATGCGCAGGCGGCCGCCCGTCCTGTGAAATCTGGCAGTTACCGTTAGCTTTCGAATTGGCTAAAAAGTGTTCATCGGCaaagaggagaaatactagatgaccatgattacggattcactggccgtcgttttacaacgtcgtgactgggaaaaccctggcgttacccaacttaatcgccttgcagcacatccccctttcgccagctggcgtaatagcgaagaggcccgcaccgatcgcccttcccaacagttgcgcagcctgaatggcgaatggcgcgcgggcggcagcgaaggcggcggcagcgaacatcatcatcatcatcatggcagcgaacgtaaaggagaagaacttttcactggagttgtcccaattcttgttgaattagatggtgatgttaatgggcacaaattttctgtcagtggagagggtgaaggtgatgcaacatacggaaaacttacccttaaatttatttgcactactggaaaactacctgttccatggccaacacttgtcactaccctgacctatggtgttcaatgctttgcgagatacccagatcatatgaaacagcatgactttttcaagagtgccatgcccgaaggttatgtacaggaaagaactatatttttcaaagatgacgggaactacaagacacgtgctgaagtcaagtttgaaggtgatacccttgttaatagaatcgagttaaaaggtattgattttaaagaagatggaaacattcttggacacaaattggaatacaactataactcacacaatgtatacatcatggcagacaaacaaaagaatggaatcaaagttaacttcaaaattagacacaacattgaagatggaagcgttcaactagcagaccattatcaacaaaatactccaattggcgatggccctgtccttttaccagacaaccattacctgtccacacaatctgccctttcgaaagatcccaacgaaaagagagaccacatggtccttcttgagtttgtaacagctgctgggattacacatggcatggatgaactatacaaataataaccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttata ACTAGTCTGCAG

**P7:**(from PA4217):

GAATTCTCTAGAccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttataCGACACCGCTGCGCCGGCGTTTCATGGCGGATAACCGCAAGCGGTTATTCGCCCTACGCGGCCTTGGAGCCCATCTAACCGCACGCGGTCATGCGTACCGCGGCCTCGGAGCCGGTTCGTAGGGCGAATGACGCCACCGGCGTTATCCGCCGCTGCGCCGACGTTTCATCGCGGTAAACGGTCATCCATCCCAGCCGAACCCCCATCGATTCGAACACTCGAGAAAAGGAAGCACCCaaagaggagaaatactagatgaccatgattacggattcactggccgtcgttttacaacgtcgtgactgggaaaaccctggcgttacccaacttaatcgccttgcagcacatccccctttcgccagctggcgtaatagcgaagaggcccgcaccgatcgcccttcccaacagttgcgcagcctgaatggcgaatggcgcgcgggcggcagcgaaggcggcggcagcgaacatcatcatcatcatcatggcagcgaacgtaaaggagaagaacttttcactggagttgtcccaattcttgttgaattagatggtgatgttaatgggcacaaattttctgtcagtggagagggtgaaggtgatgcaacatacggaaaacttacccttaaatttatttgcactactggaaaactacctgttccatggccaacacttgtcactaccctgacctatggtgttcaatgctttgcgagatacccagatcatatgaaacagcatgactttttcaagagtgccatgcccgaaggttatgtacaggaaagaactatatttttcaaagatgacgggaactacaagacacgtgctgaagtcaagtttgaaggtgatacccttgttaatagaatcgagttaaaaggtattgattttaaagaagatggaaacattcttggacacaaattggaatacaactataactcacacaatgtatacatcatggcagacaaacaaaagaatggaatcaaagttaacttcaaaattagacacaacattgaagatggaagcgttcaactagcagaccattatcaacaaaatactccaattggcgatggccctgtccttttaccagacaaccattacctgtccacacaatctgccctttcgaaagatcccaacgaaaagagagaccacatggtccttcttgagtttgtaacagctgctgggattacacatggcatggatgaactatacaaataataaccaggcatcaaataaaacgaaaggctcagtcgaaagactgggcctttcgttttatctgttgtttgtcggtgaacgctctctactagagtcacactggctcaccttcgggtgggcctttctgcgtttata ACTAGTCTGCAG

**P8:** (from PluxI):

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**P9:** (from PtraI)

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