Table S4.2: PURE protein DNA linear template sequences

|  |  |
| --- | --- |
| **PURE protein** | **Linear template DNA sequence** |
| AlaRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgagaggatcgcatcaccatcaccatcacggatccgcatgcgatgacgatgacaaaagcaacagcaccgctgagatccgtcaggcgtttctcgactttttccatagtaagggacatcaggtagttgccagcagctccctggtaccccataacgacccaactttgttgtttaccaacgccgggatgaaccagttcaaggatgtgttccttgggctcgacaagcgtaattattcccgcgctaccacttcccaacgctgcgtgcgtgcgggtggtaaacacaacgacctggaaaacgtcggttacaccgcgcgtcaccataccttcttcgaaatgctgggcaacttcagcttcggcgactatttcaaacacgatgccattcagtttgcatgggaactgctgaccagcgaaaaatggtttgccctgccgaaagagcgtctgtgggttaccgtctatgaaagcgacgacgaagcctacgaaatctgggaaaaagaagtagggatcccgcgcgaacgtattattcgcatcggcgataacaaaggtgcgccatacgcatctgacaacttctggcagatgggtgacactggtccgtgcggcccgtgcaccgaaatcttctacgatcacggcgaccacatttgggggggccctccgggaagcccggaagaagacggcgaccgctacattgagatctggaacatcgtcttcatgcagttcaaccgccaggccgatggcacgatggaaccgctgccgaagccgtctgtagataccggtatgggtctggagcgtattgctgcggtgctgcaacacgttaactctaactatgacatcgacctgttccgcacgctgatccaggcggtagcgaaagtcactggcgcaaccgatctgagcaataaatcgctgcgcgtaatcgctgaccacattcgttcttgtgcgttcctaatcgcggatggcgtaatgccgtccaatgaaaaccgtggttatgtactgcgtcgtatcattcgtcgcgcagtgcgtcacggtaatatgctcggcgcgaaagaaaccttcttctacaaactggttggtccgctgatcgacgttatgggctctgcgggtgaagacctgaaacgccagcaggcgcaggttgagcaggtgctgaagactgaagaagagcagtttgctcgtactctggagcgcggtctggcgttgctggatgaagagctggcaaaactttctggtgatacgctggatggtgaaactgctttccgtctgtacgacacctatggcttcccggttgacctgacggctgatgtttgtcgtgagcgcaacatcaaagttgacgaagctggttttgaagctgcaatggaagagcagcgtcgtcgcgcgcgcgaagccagcggctttggtgccgattacaacgcaatgatccgtgttgacagtgcatctgaatttaaaggctatgaccatctggaactgaacggcaaagtgactgcgctgtttgttgatggtaaagcggttgatgccatcaatgcaggccaggaagctgtggtcgtgctggatcaaacgccattctatgcggaatccggcggtcaggttggcgataaaggcgaactgaaaggcgctaacttctcctttgcggtggaagatacgcagaaatacggccaggcgattggtcacatcggtaaacttgctgcgggttctctgaaagtgggcgacgcggtgcaggctgatgttgatgaggctcgtcgcgcccgtattcgtctgaatcactccgcaacgcacctgatgcacgctgcgctgcgccaggttctgggtactcatgtatcgcagaaaggttcactggttaacgacaaggtgctgcgcttcgacttctcacacaacgaagcgatgaaaccagaagagattcgtgcggtcgaagacctggtgaacacacagattcgtcgcaatttgccgatcgaaaccaacatcatggatctcgaagcggcgaaagcgaaaggtgcgatggcgctgttcggcgagaagtatgatgagcgcgtacgcgtgctgagcatgggcgatttctctaccgagttgtgtggcggtactcacgccagccgcactggtgatattggtctgttccgcatcatctctgaatcgggtactgctgcaggcgttcgtcgtatcgaagcggtaaccggagaaggtgctatcgccaccgttcatgcagacagcgatcgcttaagcgaagtcgcgcatctgctgaaaggcgatagcaataatctggctgataaagtgcgctcagtactggaacgtacgcgtcagctggaaaaagagttacaacagcttaaagaacaagctgccgcacaggagagcgcaaatctttccagtaaggcaattgatgttaatggtgttaagctgttggttagcgagcttagcggtgttgagccgaaaatgttgcgtaccatggttgacgatttaaaaaatcagctggggtcgacaattatcgtgctggcaacggtagtcgaaggtaaggtttctctgattgcaggcgtatctaaggacgtcacagatcgtgtgaaagcaggggaactgattggtatggtcgctcagcaggtgggcggcaagggtggtggacgtcctgacatggcgcaagccggtggtacggatgctgcggccttacctgcagcgttagccagtgtgaaaggctgggtcagcgcgaaattgcaataaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| ArgRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgggccatcatcatcatcatcatcatcatcatcacagcagcggccatatcgaaggtcgtcatatgaatattcaggctcttctctcagaaaaagtccgtcaggccatgattgcggcaggcgcgcctgcggattgcgaaccgcaggttcgtcagtcagcaaaagttcagttcggcgactatcaggctaacggcatgatggcagttgctaaaaaactgggtatggcaccgcgacaattagcagagcaggtgctgactcatctggatcttaacggtatcgccagcaaagttgagatcgccggtccaggctttatcaacattttccttgatccggcattcctggctgaacatgttcagcaggcgctggcgtccgatcgtctcggtgttgctacgccagaaaaacagaccattgtggttgactactctgcgccaaacgtggcgaaagagatgcatgtcggtcacctgcgctctaccattattggtgacgcagcagtgcgtactctggagttcctcggtcacaaagtgattcgcgcaaaccacgtcggcgactggggcactcagttcggtatgctgattgcatggctggaaaagcagcagcaggaaaacgccggtgaaatggagctggctgaccttgaaggtttctaccgcgatgcgaaaaagcattacgatgaagatgaagagttcgccgagcgcgcacgtaactacgtggtaaaactgcaaagcggtgacgaatatttccgcgagatgtggcgcaaactggtcgacatcaccatgacgcagaaccagatcacctacgatcgtctcaacgtgacgctgacccgtgatgacgtgatgggcgaaagcctctacaacccgatgctgccaggaattgtggcggatctcaaagccaaaggtctggcagtagaaagcgaaggggcgaccgtcgtattccttgatgagtttaaaaacaaggaaggcgaaccgatgggcgtgatcattcagaagaaagatggcggctatctctacaccaccactgatatcgcctgtgcgaaatatcgttatgaaacactgcatgccgatcgcgtgctgtattacatcgactcccgtcagcatcaacacctgatgcaggcatgggcgatcgtccgtaaagcaggctatgtaccggaatccgtaccgctggaacaccacatgttcggcatgatgctgggtaaagacggcaaaccgttcaaaacccgcgcgggtggtacagtgaaactggccgatctgctggatgaagccctggaacgtgcacgccgtctggtggcagaaaagaacccggatatgccagccgacgagctggaaaaactggctaacgcggttggtattggtgcggtgaaatatgcggatctctccaaaaaccgcaccacggactacatcttcgactgggacaacatgctggcgtttgagggtaataccgcgccatacatgcagtatgcatacacgcgtgtattgtccgtgttccgtaaagcagaaattgacgaagagcaactggctgcagctccggttatcatccgtgaagatcgtgaagcgcaactggcagctcgcctgctgcagtttgaagaaaccctcaccgtggttgcccgtgaaggcacgccgcatgtaatgtgtgcttacctgtacgatctggccggtctgttctctggcttctacgagcactgcccgatcctcagcgcagaaaacgaagaagtgcgtaacagccgtctaaaactggcacaactgacggcgaagacgctgaagctgggtctggatacgctgggtattgagactgtagagcgtatgtaaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| AsnRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgagaggatcgcatcaccatcaccatcacggatccatgagcgttgtgcctgtagccgacgtactccagggccgtgtagccgttgacagcgaagtcaccgtgcgcggatgggtacgtacccgccgagattcaaaagctggcatctccttcctcgccgtttatgacggttcctgctttgatcctgtacaggctgtcatcaataattctctgcccaattacaatgaagacgtcctgcgtctgaccaccggctgctcggtcattgtgacgggtaaagtcgtggcgtcgccgggccaggggcaacaatttgaaattcaggccagcaaggttgaagttgctggttgggttgaagatccagacacttacccgatggcggcaaaacgccacagcattgagtatctgcgtgaagtcgctcacctgcgtccgcgcacaaacctgattggtgccgtcgcgcgcgttcgccatacgctggcgcaggcgctgcatcgcttctttaacgagcagggattcttctgggtttcaacgccactgattaccgcatctgataccgaaggtgcaggcgaaatgttccgcgtttctacgctggatctggaaaacctgccgcgtaacgatcagggcaaagtggatttcgacaaagacttctttggtaaagagtctttcctgaccgtatctggccagttgaacggcgaaacctacgcttgcgcattgtccaaaatttataccttcggcccgactttccgtgctgaaaactccaacaccagccgtcacctggcggaattctggatgctggagccggaagtggcgtttgctaacctgaacgatattgcgggtctggctgaagccatgctgaaatatgtcttcaaagcggttctcgaagaacgcgctgacgacatgaaattcttcgctgaacgcgtagataaagatgccgtttcacgtctggaacgcttcattgaagccgattttgcgcaggtggattataccgacgcagtgaccattctcgaaaactgcggcaggaagtttgaaaacccggtttactggggagtcgatctctcttctgagcatgagcgttatctggcggaagaacactttaaagcaccggtagtggttaaaaactatccgaaagatattaaagcgttctatatgcgccttaacgaagacggtaaaaccgttgcggctatggacgttctggctccgggcatcggtgagatcattggtggctcccagcgtgaagaacgtctggacgtgctggacgagcgtatgctggaaatgggcctgaataaagaagattactggtggtatcgcgatctgcgtcgctacggtactgttccgcattcaggtttcggtcttggttttgaacgtctgattgcttacgtaactggcgtgcaaaacgtacgtgatgtgattccgttcccacgtactccgcgtaacgccagcttctaaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| AspRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgcgtacagaatattgtggacagctccgtttgtcccacgtggggcagcaggtgactctgtgtggttgggtcaaccgtcgtcgtgatcttggtagcctgatcttcatcgatatgcgcgaccgcgaaggtatcgtgcaggtatttttcgatccggatcgtgcggacgcgttaaagctggcctctgaactgcgtaatgagttctgcattcaggtcacgggcaccgtacgtgcgcgtgacgaaaaaaatattaaccgcgatatggcgaccggcgaaatcgaagtgctggcgtcctcgctgactatcatcaaccgcgcagatgttctgccgcttgactctaaccacgtcaacaccgaagaagcgcgtctgaaataccgctacctcgacctgcgtcgtccggaaatggctcagcgcctgaaaacccgcgctaaaatcaccagcctggtgcgccgttttatggatgaccacggcttcctcgacatcgaaactccgatgctgaccaaagccacgccggaaggcgcgcgtgactacctggtgccttctcgtgtgcacaaaggtaaattctacgcactgccgcaatccccgcagttgttcaaacagctgctgatgatgtccggttttgaccgttactatcagatcgttaaatgcttccgtgacgaagacctgcgtgctgaccgtcagcctgaatttactcagatcgatgtggaaacttctttcatgaccgcgccgcaagtgcgtgaagtgatggaagcgctggtgcgtcatctgtggctggaagtgaagggtgtggatctgggcgatttcccggtaatgacctttgcggaagcagaacgccgttatggttctgataaaccggatctgcgtaacccgatggaactgactgacgttgctgatctgctgaaatctgttgagtttgctgtatttgcaggtccggcgaacgatccgaaaggtcgcgtagcggctctgcgcgttccgggcggcgcatcgctgacccgtaagcagatcgacgaatacggtaacttcgttaaaatctacggcgcgaaaggtctggcttacatcaaagttaacgaacgcgcgaaaggtctggaaggtatcaacagcccggtagcgaagttccttaatgcagaaatcatcgaagacatcctggatcgtactgccgcgcaagatggcgatatgattttcttcggtgccgacaacaagaaaattgttgccgacgcgatgggtgcactgcgcctgaaagtgggtaaagaccttggtctgaccgacgaaagcaaatgggcaccgctgtgggttatcgacttcccgatgtttgaagacgacggtgaaggcggcctgacggcaatgcaccatccgttcacctcaccgaaagatatgacggctgcagaactgaaagctgcaccggaaaatgcggtggcgaacgcttacgatatggtcatcaatggttacgaagtgggcggtggttcagtacgtatccataatggtgatatgcagcagacggtgtttggtattctgggtatcaacgaagaggaacagcgcgagaaattcggcttcctgctcgacgctctgaaatacggtactccgccgcacgcaggtctggcattcggtcttgaccgtctgaccatgctgctgaccggcaccgacaatatccgtgacgttatcgccttcccgaaaaccacggcggcagcgtgtctgatgactgaagcaccgagctttgctaacccgactgcactggctgagctgagcattcaggttgtgaagaaggctgagaataacctcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| CysRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgctaaaaatcttcaatactctgacacgccaaaaagaggaatttaagcctattcacgccggggaagtcggcatgtacgtgtgtggaatcaccgtttacgatctctgtcatatcggtcacgggcgtacctttgttgcttttgacgtggttgcgcgctatctgcgtttcctcggctataaactgaagtatgtgcgcaacattaccgatatcgacgacaaaatcatcaaacgcgccaatgaaaatggcgaaagctttgtggcgatggtggatcgcatgatcgccgaaatgcacaaagattttgatgctttgaacattctgcgcccggatatggagccgcgcgcgacgcaccatatcgcagaaattattgaactcactgaacaactgatcgccaaaggtcacgcttatgtggcggacaacggcgacgtgatgttcgacgtcccgaccgatccaacttatggcgtgctgtcgcgtcaggatctcgaccagctgcaggcaggcgcgcgcgttgacgtggtcgacgacaaacgcaacccaatggacttcgttctgtggaagatgtcgaaagagggcgaaccgagctggccgtctccgtggggcgcgggtcgtcctggctggcacattgaatgttcggcaatgaactgcaagcagctgggtaaccactttgatatccacggcggcggttcagacctgatgttcccgcaccacgaaaacgaaatcgcgcagtccacctgtgcccatgatggtcagtatgtgaactactggatgcactcggggatggtgatggttgaccgcgagaagatgtccaaatcgctgggtaacttctttaccgtgcgcgatgtgctgaaatactacgacgcggaaaccgtgcgttacttcctgatgtcgggccactatcgcagccagttgaactacagcgaagagaacctgaagcaggcgcgtgcggcgctggagcgtctctacactgcgctgcgcggcacagataaaaccgttgcgcctgccggtggcgaagcgtttgaagcgcgctttattgaagcgatggacgacgatttcaacaccccggaagcctattccgtactgtttgatatggcgcgtgaagtaaaccgtctgaaagcagaagatatggcagcggcgaatgcaatggcatctcacctgcgtaaactttccgctgtattgggcctgctggagcaagaaccggaagcgttcctgcaaagcggcgcgcaggcagacgacagcgaagtggctgagattgaagcgttaattcaacagcgtctggatgcccgtaaagcgaaagactgggcggcggcggatgcggcgcgtgatcgtcttaacgagatggggatcgtgctggaagatggcccgcaagggaccacctggcgtcgtaagctcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| GlnRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgagtgaggcagaagcccgcccgactaactttatccgtcagatcatcgatgaagatctggccagtggtaagcacaccacagtacacacccgtttcccgccggagccgaatggctatctgcatattggccatgcgaaatctatctgcctgaacttcgggatcgcccaggactataaaggccagtgcaacctgcgtttcgacgacactaacccggtaaaagaagatatcgagtatgttgagtcgatcaaaaacgacgtagagtggttaggttttcactggtctggtaacgtccgttactcctccgattattttgatcagctccacgcctatgcgatcgaactgatcaataaaggcctggcgtacgttgatgaactgacgccggaacagatccgcgaataccgcggcaccctgacgcaaccgggtaaaaacagcccgtaccgcgaccgcagcgttgaagagaacctggcgctgttcgaaaaaatgcgtgccggtggttttgaagaaggtaaagcctgcctgcgtgcgaaaatcgacatggcttcaccgtttatcgtgatgcgcgatccggtgctgtaccgtattaaatttgctgaacaccaccagactggcaacaagtggtgcatctacccgatgtacgacttcacccactgcatcagcgatgccctggaaggtattacgcactctctgtgtacgcttgagttccaggacaaccgtcgtctgtacgactgggtactggacaacatcacgattcctgttcacccgcgccagtatgagttctcgcgcctgaatctggaatacaccgtgatgtccaagcgtaagttgaacctgctggtgaccgacaagcacgttgaaggctgggatgacccgcgtatgccgaccatttccggtctgcgtcgtcgtggttacactgcggcttctattcgtgagttctgcaaacgcatcggcgtgaccaagcaggacaacaccattgagatggcgtcgctggaatcctgcatccgtgaagatctcaacgaaaatgcgccgcgcgcaatggcggttatcgatccggtgaaactggttatcgaaaactatcagggcgaaggcgaaatggttaccatgccgaaccatccgaacaaaccggaaatgggcagccgtcaggtgccgtttagcggtgagatttggattgatcgcgccgatttccgcgaagaagctaacaagcagtacaaacgtctggtgctgggtaaagaagtgcgtctgcgtaatgcttatgtgattaaggcagaacgcgtcgagaaagatgccgaaggtaatatcaccaccatcttctgtacttatgacgccgataccttaagcaaagatccggcagatggtcgtaaagtcaaaggtgttattcactgggtgagcgcggcacatgcgctgccggttgaaatccgtttgtatgaccgtctgttcagcgtgcctaacccaggtgctgcggatgatttcctgtcggtgattaacccggaatcgctggtgatcaaacagggctttgctgaaccgtcgctgaaagatgcggttgcgggtaaagcattccagtttgagcgtgaaggttacttctgcctcgatagccgccattctacggcggaaaaaccggtatttaaccgcaccgttgggctgcgtgatacctgggcgaaagtaggcgagctcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| GluRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgaaaatcaaaactcgcttcgcgccaagcccaacaggctatctgcacgttggcggcgcgcgtactgctctttactcctggctttttgcacgtaaccacggcggtgagttcgtgctgcgtattgaagacaccgatcttgagcgttccacgccggaagctatcgaagccattatggatggcatgaactggctgagcctggagtgggatgaaggtccgtactaccagaccaaacgttttgatcgctacaacgcggtgatcgatcagatgctggaagagggcactgcttataaatgctattgctctaaagagcgcctggaagcgctgcgcgaagagcaaatggcgaaaggtgagaagccgcgttatgacggtcgctgccgccacagccatgagcatcatgctgatgatgaaccgtgtgttgtacgttttgctaacccgcaggaaggttctgttgtttttgacgatcagatccgtggtccgatcgagttcagcaaccaggaactggacgatcttattatccgccgtaccgatggttccccaacctataacttctgtgtggttgtcgatgactgggatatggaaatcacccacgttatccgtggcgaagaccatatcaacaacacgccacgccagatcaacattcttaaggccctgaaagcgccggtgccggtttacgcgcacgtttctatgatcaatggcgatgacggtaaaaaactgtccaaacgtcacggggcagtcagcgtaatgcagtatcgtgatgacggttatttgccagaagcactgctgaactatctggtgcgtctgggctggtcccacggcgatcaggaaatcttcactcgtgaagagatgatcaaatacttcactttgaatgccgtcagcaaatctgccagtgcgttcaacaccgacaagctgctgtggctgaaccatcactacattaacgcgctgccgccggagtatgttgctactcacttacagtggcacattgagcaggaaaatatcgatacccgtaacggcccgcagctggctgatctggtgaaactgctgggcgaacgctgcaagacgctgaaagagatggcacagagctgccgttatttctacgaagattttgctgagttcgatgccgacgccgcgaaaaaacatctgcgtccggtagcgcgtcagccgctggaagtggttcgtgacaaactggccgcgattactgactggaccgctgaaaacgttcatcacgctattcaggcgacggcggatgagctggaagtgggtatgggtaaagttggtatgccgctgcgtgtcgccgtaaccggtgcggggcagtctccagcactggatgttaccgttcacgcaattggtaagacccgcagtatcgagcgtatcaacaaagcgctggattttattgctgaacgcgaaaatcagcagctcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| GlyRSα | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACAtatgcaaaagtttgataccaggaccttccagggcttgatcctgaccttacaggattactgggctcgccagggctgcaccattgttcaaccattggacatggaagtcggcgcgggaacctctcacccaatgacctgtctgcgcgagctggggccagaaccgatggcggctgcttatgttcagccttctcgtcgcccgaccgatggtcgctacggcgaaaaccccaaccgtttacagcactactatcagttccaggtggtcattaagccatcgccggacaatattcaggagctgtacctcggttctctgaaagagctgggcatggacccgactattcacgacatccgtttcgtggaagataactgggaaaacccgacgctgggtgcctggggactgggctgggaagtgtggctgaacggcatggaagtgacgcagttcacttacttccagcaggttggtggtctggagtgtaaaccggttaccggcgagatcacctacggtctggaacgtctggccatgtacattcagggcgtagacagcgtttacgacctggtctggagcgacggcccgctgggtaaaaccacctacggcgacgtgttccatcagaacgaagtggagcagtccacttacaacttcgaatacgcggatgtggacttcctgttcacctgcttcgagcagtacgagaaagaagcgcagcagctgctggcgctggaaaatccgctgccgctgccagcctacgagcgtattctgaaagccgcccacagcttcaacctgctggatgcgcgtaaagccatctccgtcaccgagcgtcagcgctacattctgcgcattcgcaccctgaccaaagcagtggcagaagcatactacgcttcccgtgaagccctcggcttcccgatgtgcaacaaagataagtaaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| GlyRSβ | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgtctgagaaaacttttctggtggaaatcggcactgaagagctgccaccaaaagcactgcgcagcctggctgagtcctttgctgcgaactttactgcggagctggataacgctggcctcgcacacggcaccgttcaatggtttgctgctccgcgtcgtctggcgctgaaagtagctaacctggcggaagcgcaaccggatcgtgaaatcgaaaaacgcggcccggcgattgcccaggcgttcgacgctgaaggcaaaccgagcaaagcggcagaaggttgggcgcgtggttgcggtattaccgttgaccaggctgagcgtctgactaccgataaaggcgaatggctgctgtatcgcgcccatgtgaagggcgaaagcaccgaagcactgctgccgaatatggttgcgacttctctggcgaaactgccgatcccgaaactgatgcgttggggcgcaagcgacgtgcacttcgtgcgtccggtgcacaccgtgaccctgctgctgggcgacaaagtcattccggcaaccattctgggcattcagtccgatcgcgtgattcgcggccaccgctttatgggcgagccggaattcaccatcgataacgccgatcagtatccggaaattctgcgtgagcgtgggaaagtcatcgccgattacgaagaacgtaaggcgaagattaaagccgatgccgaagaagcagcgcgtaagattggcggtaacgctgacttaagcgaaagcctgctggaagaagtggcttcgctggtggagtggccggtcgttctgaccgcaaaattcgaagagaaattcctcgcggtgccggctgaagcgctggtttacaccatgaaaggtgaccagaaatacttcccggtgtatgcgaacgacggcaaactgctgccgaactttatcttcgttgccaacatcgaatcgaaagatccgcagcagattatctccggtaacgagaaagtcgttcgtccgcgtctggcggatgccgagttcttcttcaacaccgaccgtaaaaaacgtcttgaagataacctgccgcgcctgcaaaccgtgttgttccagcaacagttggggacgctgcgcgacaaaactgaccgcatccaggcgctggctggctggattgctgaacagattggcgctgacgttaaccacgctacccgtgcgggtctgctgtctaagtgcgacctgatgaccaacatggtcttcgagttcaccgacacccagggcgttatggggatgcactatgcgcgtcacgatggcgaagcggaagatgtcgcggtggcgctgaatgagcagtatcagccgcgttttgctggtgatgacctgccgtccaacccagtagcttgtgcgctggcgattgctgacaagatggataccctggcgggtatcttcggtatcggtcagcatccgaaaggcgacaaagacccgtttgcgctgcgtcgtgccgcgcttggcgtgctgcgaattatcgttgagaagaacctcaaccttgatctgcaaacgctgaccgaagaagcggtgcgtctgtatggcgataagctgactaatgccaacgtagttgatgatgttatcgactttatgctcggtcgcttccgcgcctggtatcaggacgaaggttataccgttgacaccatccaggcggtactggcgcgtcgtccgactcgtccggctgatttcgatgcccgtatgaaagcggtatcgcatttccgtaccctggatgcagctgctgcactggcggcggcgaacaaacgtgtatctaacattctggcgaaatctgacgaagtgctgagcgaccgcgtgaatgcctctaccctgaaagagccggaagaaattaaactggcgatgcaggttgtggtgctacgtgacaagctggagccgtactttacggaaggtcgttaccaggatgcgctggtcgaactggctgagctgcgtgaaccggttgatgctttcttcgataaagtgatggtcatggttgatgacaaagaattgcgtatcaaccgtctgaccatgctggagaaactgcgcgaactgttcctgcgcgttgcggatatttcgctgttgcaactcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| HisRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatggcaaaaaacattcaagccattcgcggcatgaacgattacctgcctggcgaaacggccatctggcagcgcattgaaggcacactgaaaaacgtgctcggcagctacggttacagtgaaatccgcttgccgattgtagagcagaccccgctattcaaacgtgcgattggtgaagtcaccgacgtggttgaaaaagagatgtacacctttgaggatcgcaatggcgacagcctgactctgcgccctgaagggacggcgggctgtgtacgcgccggcatcgagcatggtcttctgtacaatcaggaacagcgtctgtggtatatcgggccgatgttccgtcacgagcgtccgcagaaagggcgttatcgtcagttccatcagttgggctgcgaagttttcggtctgcaaggtccggatatcgacgctgaactgattatgctcactgcccgctggtggcgcgcgctgggtatttccgagcacgtaactcttgagctgaactctatcggttcgctggaagcacgcgccaattaccgcgatgcgctggtggcattccttgagcagcataaagaaaagctggacgaagactgcaaacgccgcatgtacactaacccgctgcgcgtgctggattcaaaaaatccggaagtgcaggcgcttctcaacgacgctccggcattaggtgactatctggacgaggaatctcgtgagcattttgccggtctgtgcaaactgctggagagcgcggggatcgcttacaccgtaaaccagcgtctggtgcgtggtctggattactacaaccgtaccgttttcgagtgggtgactaacagtctcggctcccagggcaccgtgtgtgcaggcggtcgttatgacggtcttgtggaacaactgggcggtcgtgcaacaccggctgtcggttttgctatgggcctcgaacgtcttgtattgttagtacaggccgttaatccggaatttaaagccgatcctgttgtcgatatatacctggtggcttcaggtgctgatacacaatctgcggctatggcattagctgagcgtctgcgtgatgaattaccgggcgtgaaattgatgaccaaccacggcggcggcaactttaagaaacagtttgcccgtgctgataaatggggtgcccgcgttgctgtggtgctgggtgagtctgaagtggctaacggcacagcagtagtgaaggatttgcgctctggtgagcaaacggcagttgcgcaggatagcgtagccgcgcatttgcgcacgttactgggtctcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| IleRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgcaccaccaccaccaccacagtgactataaatcaaccctgaatttgccggaaacagggttcccgatgcgtggcgatctcgccaagcgcgaacccggaatgctggcgcgttggactgatgatgatctgtacggcatcatccgtgcggctaaaaaaggcaaaaaaaccttcattctgcatgatggccctccttatgcgaatggcagcattcatattggtcactcggttaacaagattctgaaagacattatcgtgaagtccaaagggctttccggttatgactcgccgtatgtgcctggctgggactgccacggtctgccgatcgagctgaaagtcgagcaagaatacggtaagccgggtgagaaattcaccgccgccgagttccgcgccaagtgccgcgaatacgcggcgacccaggttgacggtcaacgcaaagactttatccgtctgggcgtgctgggcgactggtcgcacccgtacctgaccatggacttcaaaactgaagccaacatcatccgcgcgctgggcaaaatcatcggcaacggtcacctgcacaaaggcgcgaagccagttcactggtgcgttgactgccgttctgcgctggcggaagcggaagttgagtattacgacaaaacttctccgtccatcgacgttgctttccaggcagtcgatcaggatgcactgaaagcaaaatttgccgtaagcaacgttaacggcccaatctcgctggtaatctggaccaccacgccgtggactctgcctgccaaccgcgcaatctctattgcaccagatttcgactatgcgctggtgcagatcgacggtcaggccgtgattctggcgaaagatctggttgaaagcgtaatgcagcgtatcggcgtgaccgattacaccattctcggcacggtaaaaggtgcggagcttgagctgctgcgctttacccatccgtttatgggcttcgacgttccggcaatcctcggcgatcacgttaccctggatgccggtaccggtgccgttcacaccgcgcctggccacggcccggacgactatgtgatcggtcagaaatacggcctggaaaccgctaacccggttggcccggacggcacttatctgccgggcacttatccgacgctggatggcgtgaacgtcttcaaagcgaacgacatcgtcgttgcgctgctgcaggaaaaaggcgcgctgctgcacgttgagaaaatgcagcacagctatccgtgctgctggcgtcacaaaacgccgatcatcttccgcgcgacgccgcagtggttcgtcagcatggatcagaaaggtctgcgtgcgcagtcactgaaagagatcaaaggcgtgcagtggatcccggactggggccaggcgcgtatcgagtcgatggttgctaaccgtcctgactggtgtatctcccgtcagcgcacctggggtgtaccgatgtcactgttcgtgcacaaagacacggaagagctgcatccgcgtacccttgaactgatggaagaagtggcaaaacgcgttgaagtcgatggcatccaggcgtggtgggatctcgatgcgaaagagatcctcggcgacgaagctgatcagtacgtgaaagtgccggacacattggatgtatggtttgactccggatctacccactcttctgttgttgacgtgcgtccggaatttgccggtcacgcagcggacatgtatctggaaggttctgaccaacaccgcggctggttcatgtcttccctaatgatctccaccgcgatgaagggtaaagcgccgtatcgtcaggtactgacccacggctttaccgtggatggtcagggccgcaagatgtctaaatccatcggcaataccgtttcgccgcaggatgtgatgaacaaactgggcgcggatattctgcgtctgtgggtggcatcaaccgactacaccggtgaaatggccgtttctgacgagatcctgaaacgtgctgccgatagctatcgtcgtatccgtaacaccgcgcgcttcctgctggcaaacctgaacggttttgatccagcaaaagatatggtgaaaccggaagagatggtggtactggatcgctgggccgtaggttgtgcgaaagcggcacaggaagacatcctcaaggcgtacgaagcatacgatttccacgaagtggtacagcgtctgatgcgcttctgctccgttgagatgggttccttctacctcgacatcatcaaagaccgtcagtacaccgccaaagcggacagtgtggcgcgtcgtagctgccagactgcgctatatcacatcgcagaagcgctggtgcgctggatggcaccaatcctctccttcaccgctgatgaagtgtggggctacctgccgggcgaacgtgaaaaatacgtcttcaccggtgagtggtacgaaggcctgtttggcctggcagacagtgaagcgatgaacgatgcgttctgggacgagctgttgaaagtgcgtggcgaagtgaacaaagtcattgagcaagcgcgtgccgacaagaaagtgggtggctcgctggaagcggcagtaaccttgtatgcagaaccggaactgtcggcgaaactgaccgcgctgggcgatgaattacgatttgtcctgttgacctccggcgctaccgttgcagactataacgacgcacctgctgatgctcagcagagcgaagtactcaaagggctgaaagtcgcgttgagtaaagccgaaggtgagaagtgcccacgctgctggcactacacccaggatgtcggcaaggtggcggaacacgcagaaatctgcggccgctgtgtcagcaacgtcgccggtgacggtgaaaaacgtaagtttgcctgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| LeuRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgcaagagcaataccgcccggaagagatagaatccaaagtacagcttcattgggatgagaagcgcacatttgaagtaaccgaagacgagagcaaagagaagtattactgcctgtctatgcttccctatccttctggtcgactacacatgggccacgtacgtaactacaccatcggtgacgtgatcgcccgctaccagcgtatgctgggcaaaaacgtcctgcagccgatcggctgggacgcgtttggtctgcctgcggaaggcgcggcggtgaaaaacaacaccgctccggcaccgtggacgtacgacaacatcgcgtatatgaaaaaccagctcaaaatgctgggctttggttatgactggagccgcgagctggcaacctgtacgccggaatactaccgttgggaacagaaattcttcaccgagctgtataaaaaaggcctggtatataagaagacttctgcggtcaactggtgcccgaacgaccagaccgtactggcgaacgaacaagttatcgacggctgctgctggcgctgcgataccaaagttgaacgtaaagagatcccgcagtggtttatcaaaatcactgcttacgctgacgagctgctcaacgatctggataaactggatcactggccagacaccgttaaaaccatgcagcgtaactggatcggtcgttccgaaggcgtggagatcaccttcaacgttaacgactatgacaacacgctgaccgtttacactacccgcccggacacctttatgggttgtacctacctggcggtagctgcgggtcatccgctggcgcagaaagcggcggaaaataatcctgaactggcggcctttattgacgaatgccgtaacaccaaagttgccgaagctgaaatggcgacgatggagaaaaaaggcgtcgatactggctttaaagcggttcacccattaacgggcgaagaaattcccgtttgggcagcaaacttcgtattgatggagtacggcacgggcgcagttatggcggtaccggggcacgaccagcgcgactacgagtttgcctctaaatacggcctgaacatcaaaccggttatcctggcagctgacggctctgagccagatctttctcagcaagccctgactgaaaaaggcgtgctgttcaactctggcgagttcaacggtcttgaccatgaagcggccttcaacgccatcgccgataaactgactgcgatgggcgttggcgagcgtaaagtgaactaccgcctgcgcgactggggtgtttcccgtcagcgttactggggcgcgccgattccgatggtgacgctggaagacggtaccgtaatgccgaccccggacgaccagctgccggtgatcctgccggaagatgtggtaatggacggcattaccagcccgattaaagcagatccggagtgggcgaaaactaccgttaacggtatgccagcactgcgtgaaaccgacactttcgacacctttatggagtcctcctggtactatgcgcgctacacttgcccgcagtacaaagaaggtatgctggattccgaagcggctaactactggctgccggtggatatctacattggtggtattgaacacgccattatgcacctgctctacttccgcttcttccacaaactgatgcgtgatgcaggcatggtgaactctgacgaaccagcgaaacagttgctgtgtcagggtatggtgctggcagatgccttctactatgttggcgaaaacggcgaacgtaactgggtttccccggttgatgctatcgttgaacgtgacgagaaaggccgtatcgtgaaagcgaaagatgcggcaggccatgaactggtttataccggcatgagcaaaatgtccaagtcgaagaacaacggtatcgacccgcaggtgatggttgaacgttacggcgcggacaccgttcgtctgtttatgatgtttgcttctccggctgatatgactctcgaatggcaggaatccggtgtggaaggggctaaccgcttcctgaaacgtgtctggaaactggtttacgagcacacagcaaaaggtgatgttgcggcactgaacgttgatgcgctgactgaaaatcagaaagcgctgcgtcgcgatgtgcataaaacgatcgctaaagtgaccgatgatatcggccgtcgtcagaccttcaacaccgcaattgcggcgattatggagctgatgaacaaactggcgaaagcaccaaccgatggcgagcaggatcgcgctctgatgcaggaagcactgctggccgttgtccgtatgcttaacccgttcaccccgcacatctgcttcacgctgtggcaggaactgaaaggcgaaggcgatatcgacaacgcgccgtggccggttgctgacgaaaaagcgatggtggaagactccacgctggtcgtggtgcaggttaacggtaaagtccgtgccaaaatcaccgttccggtggacgcaacggaagaacaggttcgcgaacgtgctggccaggaacatctggtagcaaaatatcttgatggcgttactgtacgtaaagtgatttacgtaccaggtaaactcctcaatctggtcgttggcctcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| LysRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgtctgaacaagaaacacggggagccaatgaggctattgattttaacgatgaactgagaaatcgccgcgaaaaactggcggcactacgtcagcaaggtgtggcgtttcccaatgattttcgccgcgaccatacctctgaccagttgcacgaagagtttgatgcgaaggataaccaggaactggaatccttaaacattgaagtctcggttgctggccgaatgatgacccgtcgtatcatggggaaagcctcctttgtaacgttgcaggatgtcggtggccgtattcaactgtacgttgcaagagatagcctgccagaaggtgtttataacgatcagtttaaaaaatgggatctgggtgacattatcggtgcccgcggtacgctgtttaagacgcaaacgggtgagctttccattcactgtactgagctgcgcctgctgactaaagcactacgtcctttaccagataaattccatggtctgcaggatcaggaagtccgttatcgtcaacgttatctggacctcatcgctaacgataaatcccgtcaaacgtttgttgtccgttcaaaaattctggccgctatccgtcaattcatggtcgcgcgcggctttatggaagtagaaaccccgatgatgcaggtaattccaggtggggcatctgctcgcccgtttattacccatcataatgctctggatttagatatgtatctgcgtatcgcgccggagctgtatctgaaacgtctggttgtaggcggttttgaacgggtattcgaaatcaaccgtaacttccgtaatgaaggtatttctgttcgccataatcctgagttcacaatgatggaactctacatggcgtatgcggattaccacgatttgattgaactgacagagtcactgttccgcaccctggcacaagaggttctgggtaccactaaagtcacttatggcgagcatgtgtttgatttcggcaaaccgtttgaaaaactcaccatgcgcgaagcaatcaaaaaatatcgtccagaaaccgatatggccgacctggataattttgatgctgctaaagcattagctgaatctatcggtattacggtagagaaaagctgggggttgggacgtattgtcacagagatctttgatgaagtggcagaagcacatctgattcagccaacctttattacggaatatccggcagaagtgtccccgctggcacgccgtaatgatgttaacccggaaatcaccgaccgttttgaattcttcatcggtggtcgtgaaatcggtaatggttttagcgaattaaacgacgcagaagatcaggctgaacgtttccaggaacaggttaatgctaaagctgcaggtgacgacgaagccatgttctatgacgaagattacgtgactgcgctggaatatggtctgccgccaaccgctggtctgggtattggtatcgaccgaatgattatgctgtttactaacagccatactattcgcgacgttattctcttcccggcgatgcgcccacagaaactcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| MetRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgactcaagtcgcgaagaaaattctggtgacgtgcgcactgccgtacgctaacggctcaatccacctcggccatatgctggagcacatccaggctgatgtctgggtccgttaccagcgaatgcgcggccacgaggtcaacttcatctgcgccgacgatgcccacggtacaccgatcatgctgaaagctcagcagcttggtatcaccccggagcagatgattggcgaaatgagtcaggagcatcagactgatttcgcaggctttaacatcagctatgacaactatcactcgacgcacagcgaagagaaccgccagttgtcagaacttatctactctcgcctgaaagaaaacggttttattaaaaaccgcaccatctctcagctgtacgatccggaaaaaggcatgttcctgccggaccgttttgtgaaaggcacctgcccgaaatgtaaatccccggatcaatacggcgataactgcgaagtctgcggcgcgacctacagcccgactgaactgatcgagccgaaatcggtggtttctggcgctacgccggtaatgcgtgattctgaacacttcttctttgatctgccctctttcagcgaaatgttgcaggcatggacccgcagcggtgcgttgcaggagcaggtggcaaataaaatgcaggagtggtttgaatctggcctgcaacagtgggatatctcccgcgacgccccttacttcggttttgaaattccgaacgcgccgggcaaatatttctacgtctggctggacgcaccgattggctacatgggttctttcaagaatctgtgcgacaagcgcggcgacagcgtaagcttcgatgaatactggaagaaagactccaccgccgagctgtaccacttcatcggtaaagatattgtttacttccacagcctgttctggcctgccatgctggaaggcagcaacttccgcaagccgtccaacctgtttgttcatggctatgtgacggtgaacggcgcaaagatgtccaagtctcgcggcacctttattaaagccagcacctggctgaatcattttgacgcagacagcctgcgttactactacactgcgaaactctcttcgcgcattgatgatatcgatctcaacctggaagatttcgttcagcgtgtgaatgccgatatcgttaacaaagtggttaacctggcctcccgtaatgcgggctttatcaacaagcgttttgacggcgtgctggcaagcgaactggctgacccgcagttgtacaaaaccttcactgatgccgctgaagtgattggtgaagcgtgggaaagccgtgaatttggtaaagccgtgcgcgaaatcatggcgctggctgatctggctaaccgctatgtcgatgaacaggctccgtgggtggtggcgaaacaggaaggccgcgatgccgacctgcaggcaatttgctcaatgggcatcaacctgttccgcgtgctgatgacttacctgaagccggtactgccgaaactgaccgagcgtgcagaagcattcctcaatacggaactgacctgggatggtatccagcaaccgctgctgggccacaaagtgaatccgttcaaggcgctgtataaccgcatcgatatgaggcaggttgaagcactggtggaagcctctaaagaagaagtaaaagccgctgccgcgccggtaactggcccgctggcagatgatccgattcaggaaaccatcacctttgacgacttcgctaaagttgacctgcgcgtggcgctgattgaaaacgcagagtttgttgaaggttctgacaaactgctgcgcctgacgctggatctcggcggtgaaaaacgcaatgtcttctccggtattcgttctgcttacccggatccgcaggcactgattggtcgtcacaccattatggtggctaacctggcaccacgtaaaatgcgcttcggtatctctgaaggcatggtgatggctgccggtcctggcgggaaagatattttcctgctaagcccggatgccggtgctaaaccgggtcatcaggtgaaactcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| PheRSα | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgagaggatcgcatcaccatcaccatcacggatccgcatgcgatgacgatgacaaatcacatctcgcagaactggttgccagtgcgaaggcggccattagccaggcgtcagatgttgccgcgttagataatgtgcgcgtcgaatatttgggtaaaaaagggcacttaacccttcagatgacgaccctgcgtgagctgccgccagaagagcgtccggcagctggtgcggttatcaacgaagcgaaagagcaggttcagcaggcgctgaatgcgcgtaaagcggaactggaaagcgctgcactgaatgcgcgtctggcggcggaaacgattgatgtctctctgccaggtcgtcgcattgaaaacggcggtctgcatccggttacccgtaccatcgaccgtatcgaaagtttcttcggtgagcttggctttaccgtggcaaccgggccggaaatcgaagacgattatcataacttcgatgctctgaacattcctggtcaccacccggcgcgcgctgaccacgacactttctggtttgacactacccgcctgctgcgtacccagacctctggcgtacagatccgcaccatgaaagcccagcagccaccgattcgtatcatcgcgcctggccgtgtttatcgtaacgactacgaccagactcacacgccgatgttccatcagatggaaggtctgattgttgataccaacatcagctttaccaacctgaaaggcacgctgcacgacttcctgcgtaacttctttgaggaagatttgcagattcgcttccgtccttcctacttcccgtttaccgaaccttctgcagaagtggacgtcatgggtaaaaacggtaaatggctggaagtgctgggctgcgggatggtgcatccgaacgtgttgcgtaacgttggcatcgacccggaagtttactctggtttcgccttcgggatggggatggagcgtctgactatgttgcgttacggcgtcaccgacctgcgttcattcttcgaaaacgatctgcgtttcctcaaacagtttaaataaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| PheRSβ | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgaaattcggtgaactgtggttacgcgaatgggtgaacccggcgattgatagcgatgcgctggcaaatcaaatcactatggcgggcctggaagttgacggtgtagaaccggttgccggcagcttccacggcgtggtcgttggtgaagtggttgagtgtgcgcagcatccgaacgctgacaaactgcgtgtgacaaaagtgaatgtcggcggcgatcgcctgctggacatcgtctgcggtgcgccaaactgccgtcagggcctgcgtgtagcggtagcgaccattggtgctgttctgccgggtgatttcaaaattaaagcggcgaaactgcgtggcgaaccgtctgaagggatgctgtgctccttctctgaactgggcatttctgacgatcacagcggcattatcgaactgcctgcggatgcgccgattggcaccgatatccgtgaatacctgaaacttgatgacaacaccatcgaaatcagcgtgacgccaaaccgtgccgactgcttaggcatcattggtgttgcgcgtgacgttgccgtgctgaaccagctgccgctggttcaaccggaaatcgttccggttggtgcgaccatcgacgacacgctgccgattacagtcgaagcgccggaagcctgcccgcgttatcttggccgtgtggtaaaaggcattaacgttaaagcgccaactccgctgtggatgaaagaaaaactgcgtcgttgcgggatccgttctatcgatgcagttgttgacgtcaccaactatgtgctgctcgaactgggccagccgatgcacgctttcgataaagatcgcattgaaggcggcattgtggtgcggatggcgaaagagggcgaaacgctggtgctgctcgacggtactgaagcgaagctgaatgctgacactctggtcatcgccgaccacaacaaggcgctggcgatgggcggcatcttcggtggcgaacactctggcgtgaatgacgaaacacaaaacgtgctgctggaatgcgcgttctttagcccgctgtctatcaccggtcgtgctcgtcgtcatggcctgcataccgatgcgtctcaccgttatgagcgtggcgttgatccggcactgcagcacaaagcgatggaacgtgcgacccgtctgctgatcgacatctgcggtggtgaggctggcccggtaattgatatcaccaacgaagcaacgctgccgaagcgtgcaaccatcactctacgtcgtagcaaactggatcgcctgatcggccatcatattgcggatgagcaggtaactgacattctgcgtcgtctcggctgcgaagtgaccgaaggcaaagacgaatggcaggcagttgcgccgagctggcgtttcgatatggagattgaagaagatctggttgaagaagtcgcgcgtgtttacggctacaacaacatcccggatgagccggtacaggcaagcctgattatgggtactcaccgtgaagctgacctgtcgctcaagcgcgtgaaaacgctgctcaacgacaaaggctatcaggaagtgatcacctacagcttcgttgatccgaaagtgcagcagatgatccatccaggcgttgaagccttactgctgccaagcccgatctctgttgaaatgtcagcaatgcgtctttctctgtggactggcctgctggcaaccgtggtgtacaaccagaaccgtcagcagaaccgtgtgcgcattttcgaaagcggtctgcgtttcgtaccagatactcaggcaccgttgggcattcgtcaggatctgatgttagccggtgtgatttgcggtaaccgttacgaagagcactggaacctggcaaaagagaccgttgatttctatgatttgaaaggcgatcttgaatccgttctcgacctgaccggtaaactgaatgaggttgagttccgtgcagaagcgaatccggcactgcatccggggcaatccgcagcgatttatctgaaaggtgaacgtattggttttgttggggttgttcatcctgaactggaacgtaaactggatcttaacggtcgcactctggtgttcgaactggagtggaacaagctcgcagaccgcgtggtgcctcaggcgcgcgagatttctcgcttcccggcgaaccgtcgtgacatcgcggtggtggtcgcagaaaacgttcccgcagcggatattttatccgaatgtaagaaagttggcgtaaatcaggtagttggcgtaaacttatttgacgtgtaccgcggtaagggtgttgcggaggggtataagagcctcgccataagcctgatcctgcaagataccagccgtacactcgaagaagaggagattgccgctaccgtcgccaaatgtgtagaggcattaaaagagcgattccaggcatcattgagggattgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| SerRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgctcgatcccaatctgctgcgtaatgagccagacgcagtcgctgaaaaactggcacgccggggctttaagctggatgtagataagctgggcgctcttgaagagcgtcgtaaagtattgcaggtcaaaacggaaaacctgcaagcggagcgtaactcccgatcgaaatccattggccaggcgaaagcgcgcggggaagatatcgagcctttacgtctggaagtgaacaaactgggcgaagagctggatgcagcaaaagccgagctggatgctttacaggctgaaattcgcgatatcgcgctgaccatccctaacctgcctgcagatgaagtgccggtaggtaaagacgaaaatgacaacgttgaagtcagccgctggggtaccccgcgtgagtttgactttgaagttcgtgaccacgtgacgctgggtgaaatgcactctggcctcgactttgcagctgcagttaagctgactggttcccgctttgtggtaatgaaagggcagattgctcgcatgcaccgcgcactgtcgcagtttatgctggatctgcataccgaacagcatggctacagtgagaactatgttccgtacctggttaaccaggacacgctgtacggtacgggtcaactgccgaaatttgctggcgatctgttccatactcgtccgctggaagaagaagcagacaccagtaactatgcgctgatcccaacggcagaagttccgctgactaacctggtgcgcggtgaaatcatcgatgaagatgatctgccaattaagatgaccgcccacaccccatgcttccgttctgaagccggttcatatggtcgtgacacccgtggtctgatccgtatgcaccagttcgacaaagttgaaatggtgcagatcgtgcgcccagaagactcaatggcggcgctggaagagatgactggtcatgcagaaaaagtcctgcagttgctgggcctgccgtaccgtaaaatcatcctttgcactggcgacatgggctttggcgcttgcaaaacttacgacctggaagtatggatcccggcacagaacacctaccgtgagatctcttcctgctccaacgtttgggatttccaggcacgtcgtatgcaggcacgttgccgcagcaagtcggacaagaaaacccgtctggttcataccctgaacggttctggtctggctgttggtcgtacgctggttgcagtaatggaaaactatcagcaggctgatggtcgtattgaagtaccagaagttctgcgtccgtatatgaacggactggaatatattggcctcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| ThrRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgagaggatcgcatcaccatcaccatcacggatccgatgacgatgacaaacctgttataactcttcctgatggcagccaacgccattacgatcacgctgtaagccccatggatgttgcgctggacattggtccaggtctggcgaaagcctgtatcgcagggcgcgttaatggcgaactggttgatgcttgcgatctgattgaaaacgacgcacaactgtcgatcattaccgccaaagacgaagaaggtctggagatcattcgtcactcctgtgcgcacctgttagggcacgcgattaaacaactttggccgcataccaaaatggcaatcggcccggttattgacaacggtttttattacgacgttgatcttgaccgcacgttaacccaggaagatgtcgaagcactcgagaagcggatgcatgagcttgctgagaaaaactacgacgtcattaagaagaaagtcagctggcacgaagcgcgtgaaactttcgccaaccgtggggagagctacaaagtctccattcttgacgaaaacatcgcccatgatgacaagccaggtctgtacttccatgaagaatatgtcgatatgtgccgcggtccgcacgtaccgaacatgcgtttctgccatcatttcaaactaatgaaaacggcaggggcttactggcgtggcgacagcaacaacaaaatgttgcaacgtatttacggtacggcgtgggcagacaaaaaagcacttaacgcttacctgcagcgcctggaagaagccgcgaaacgcgaccaccgtaaaatcggtaaacagctcgacctgtaccatatgcaggaagaagcgccgggtatggtattctggcacaacgacggctggaccatcttccgtgaactggaagtgtttgttcgttctaaactgaaagagtaccagtatcaggaagttaaaggtccgttcatgatggaccgtgtcctgtgggaaaaaaccggtcactgggacaactacaaagatgcaatgttcaccacatcttctgagaaccgtgaatactgcattaagccgatgaactgcccgggtcacgtacaaattttcaaccaggggctgaagtcttatcgcgatctgccgctgcgtatggccgagtttggtagctgccaccgtaacgagccgtcaggttcgctgcatggcctgatgcgcgtgcgtggatttacccaggatgacgcgcatatcttctgtactgaagaacaaattcgcgatgaagttaacggatgtatccgtttagtctatgatatgtacagcacttttggcttcgagaagatcgtcgtcaaactctccactcgtcctgaaaaacgtattggcagcgacgaaatgtgggatcgtgctgaggcggacctggcggttgcgctggaagaaaacaacatcccgtttgaatatcaactgggtgaaggcgctttctacggtccgaaaattgaatttaccctgtatgactgcctcgatcgtgcatggcagtgcggtacagtacagctggacttctctttgccgtctcgtctgagcgcttcttatgtaggcgaagacaatgaacgtaaagtaccggtaatgattcaccgcgcaattctggggtcgatggaacgtttcatcggtatcctgaccgaagagttcgctggtttcttcccgacctggcttgcgccggttcaggttgttatcatgaatattaccgattcacagtctgaatacgttaacgaattgacgcaaaaactatcaaatgcgggcattcgtgttaaagcagacttgagaaatgagaagattggctttaaaatccgcgagcacactttgcgtcgcgtcccatatatgctggtctgtggtgataaagaggtggaatcaggcaaagttgccgttcgcacccgccgtggtaaagacctgggaagcatggacgtaaatgaagtgatcgagaagctgcaacaagagattcgcagccgcagtcttaaacaattggaggaataaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| TrpRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgactaagcccatcgtttttagtggcgcacagccctcaggtgaattgaccattggtaactacatgggtgcgctgcgtcagtgggtaaacatgcaggatgactaccattgcatttactgtatcgttgaccaacacgcgatcaccgtgcgccaggatgcacagaagctgcgtaaagcgacgctggatacgctggccttgtatctggcttgtggtatcgatcctgagaaaagcaccatttttgttcagtcccacgtgccggaacatgcacagttaggctgggcactgaactgctatacctacttcggcgaactgagtcgcatgacgcagtttaaagataaatctgcgcgttatgccgagaacatcaacgctggtctgtttgactatccggtgctgatggcagcggacatcctgctgtatcaaactaatctggtaccggtgggtgaagaccagaaacagcacctcgaactgagccgcgatattgcccagcgtttcaacgcgctgtatggcgagatctttaaggtgccggagccgtttattccgaaatctggcgcgcgcgtaatgtcgctgctggagccgaccaagaagatgtccaagtctgacgataatcgcaataacgttatcggcctgctggaagatccgaaatcggtagtgaagaaaatcaaacgtgcggtcactgactccgacgagccgccggtagttcgctacgatgtgcagaacaaagcgggcgtttccaacctgttggatatcctttcagcggtaacgggccagagcatcccagaactggaaaaacagttcgaaggcaagatgtatggtcatctgaaaggtgaagtggctgatgccgtttccggtatgctgactgaattgcaggaacgctatcaccgtttccgcaacgatgaagccttcctgcaacaggtgatgaaagatggcgcggaaaaagccagcgcgcacgcttcccgtacgctaaaagcggtgtacgaagcgattggttttgtggcgaagcgtctcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| TyrRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatggcaagcagtaacttgattaaacaattgcaagagcgggggctggtagcccaggtgacggacgaggaagcgttagcagagcgactggcgcaaggcccgatcgcgctctattgcggcttcgatcctaccgctgacagcttgcatttggggcatcttgttccattgttatgcctgaaacgcttccagcaggcgggccacaagccggttgcgctggtaggcggcgcgacgggtctgattggcgacccgagcttcaaagctgccgagcgtaagctgaacaccgaagaaactgttcaggagtgggtggacaaaatccgtaagcaggttgccccgttcctcgatttcgactgtggagaaaactctgctatcgcggcgaacaactatgactggttcggcaatatgaatgtgctgaccttcctgcgcgatattggcaaacacttctccgttaaccagatgatcaacaaagaagcggttaagcagcgtctcaaccgtgaagatcaggggatttcgttcactgagttttcctacaacctgttgcagggttatgacttcgcctgtctgaacaaacagtacggtgtggtgctgcaaattggtggttctgaccagtggggtaacatcacttctggtatcgacctgacccgtcgtctgcatcagaatcaggtgtttggcctgaccgttccgctgatcactaaagcagatggcaccaaatttggtaaaactgaaggcggcgcagtctggttggatccgaagaaaaccagcccgtacaaattctaccagttctggatcaacactgcggatgccgacgtttaccgcttcctgaagttcttcacctttatgagcattgaagagatcaacgccctggaagaagaagataaaaacagcggtaaagcaccgcgcgcccagtatgtactggcggagcaggtgactcgtctggttcacggtgaagaaggtttacaggcggcaaaacgtattaccgaatgcctgttcagcggttctttgagtgcgctgagtgaagcggacttcgaacagctggcgcaggacggcgtaccgatggttgagatggaaaagggcgcagacctgatgcaggcactggtcgattctgaactgcaaccttcccgtggtcaggcacgtaaaactatcgcctccaatgccatcaccattaacggtgaaaaacagtccgatcctgaatacttctttaaagaagaagatcgtctgtttggtcgttttaccttactgcgtcgcggtaaaaagaattactgtctgatttgctggaaactcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| ValRS | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatggaaaagacatataacccacaagatatcgaacagccgctttacgagcactgggaaaagcagggctactttaagcctaatggcgatgaaagccaggaaagtttctgcatcatgatcccgccgccgaacgtcaccggcagtttgcatatgggtcacgccttccagcaaaccatcatggataccatgatccgctatcagcgcatgcagggcaaaaacaccctgtggcaggtcggtactgaccacgccgggatcgctacccagatggtcgttgagcgcaagattgccgcagaagaaggtaaaacccgtcacgactacggccgcgaagctttcatcgacaaaatctgggaatggaaagcggaatctggcggcaccattacccgtcagatgcgccgtctcggcaactccgtcgactgggagcgtgaacgcttcaccatggacgaaggcctgtccaatgcggtgaaagaagttttcgttcgtctgtataaagaagacctgatttaccgtggcaaacgcctggtaaactgggatccgaaactgcgcaccgctatctctgacctggaagtcgaaaaccgcgaatcgaaaggttcgatgtggcacatccgctatccgctggctgacggtgcgaaaaccgcagacggtaaagattatctggtggtcgcgactacccgtccagaaaccctgctgggcgatactggcgtagccgttaacccggaagatccgcgttacaaagatctgattggcaaatatgtcattctgccgctggttaaccgtcgtattccgatcgttggcgacgaacacgccgacatggaaaaaggcaccggctgcgtgaaaatcactccggcgcacgactttaacgactatgaagtgggtaaacgtcacgccctgccgatgatcaacatcctgacctttgacggcgatatccgtgaaagcgcccaggtgttcgataccaaaggtaacgaatctgacgtttattccagcgaaatccctgcagagttccagaaactggagcgttttgctgcacgtaaagcagtcgttgccgcagttgacgcgcttggcctgctggaagaaattaaaccgcacgacctgaccgttccttacggcgaccgtggcggcgtagttatcgaaccaatgctgaccgaccagtggtacgtgcgtgccgatgtcctggcgaaaccggcggttgaagcggttgagaacggcgacattcagttcgtaccgaagcagtacgaaaacatgtacttctcctggatgcgcgatattcaggactggtgtatctctcgtcagttgtggtggggtcaccgtatcccggcatggtatgacgaagcgggtaacgtttatgttggccgcaacgaagacgaagtgcgtaaagaaaataacctcggtgctgatgttgtcctgcgtcaggacgaagacgttctcgatacctggttctcttctgcgctgtggaccttctctacccttggctggccggaaaataccgacgccctgcgtcagttccacccaaccagcgtgatggtatctggtttcgacatcattttcttctggattgcccgcatgatcatgatgaccatgcacttcatcaaagatgaaaatggcaaaccgcaggtgccgttccacaccgtttacatgaccggcctgattcgtgatgacgaaggccagaagatgtccaaatccaagggtaacgttatcgacccactggatatggttgacggtatttcgctgccagaactgctggaaaaacgtaccggcaatatgatgcagccgcagctggcggacaaaatccgtaagcgcaccgagaagcagttcccgaacggtattgagccgcacggtactgacgcgctgcgcttcaccctggcggcgctggcgtctaccggtcgtgacatcaactgggatatgaagcgtctggaaggttaccgtaacttctgtaacaagctgtggaacgccagccgctttgtgctgatgaacacagaaggtcaggattgcggcttcaacggcggcgaaatgacgctgtcgctggcggaccgctggattctggcggagttcaaccagaccatcaaagcgtaccgcgaagcgctggacagcttccgcttcgatatcgccgcaggcattctgtatgagttcacctggaaccagttctgtgactggtatctcgagctgaccaagccggtaatgaacggtggcaccgaagcagaactgcgcggtactcgccatacgctggtgactgtactggaaggtctgctgcgcctcgcgcatccgatcattccgttcatcaccgaaaccatctggcagcgtgtgaaagtactttgcggtatcactgccgacaccatcatgctgcagccgttcccgcagtacgatgcatctcaggttgatgaagccgcactggccgacaccgaatggctgaaacaggcgatcgttgcggtacgtaacatccgtgcagaaatgaacatcgcgccgggcaaaccgctggagctgctgctgcgtggttgcagcgcggatgcagaacgtcgcgtaaatgaaaaccgtggcttcctgcaaaccctggcgcgtctggaaagtatcaccgtgctgcctgccgatgacaaaggtccggtttccgttacgaagatcatcgacggtgcagagctgctgatcccgatggctggcctcatcaacaaagaagatgagctggcgcgtctggcgaaagaagtggcgaagattgaaggtgaaatcagccgtatcgagaacaaactggcgaacgaaggctttgtcgcccgcgcaccggaagcggtcatcgcgaaagagcgtgagaagctggaaggctatgcggaagcgaaagcgaaactgattgaacagcaggctgttatcgccgcggccgcactcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| IF1 | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgagaggatcgcatcaccatcaccatcacggatccatggccaaagaagacaatattgaaatgcaaggtaccgttcttgaaacgttgcctaataccatgttccgcgtagagttagaaaacggtcacgtggttactgcacacatctccggtaaaatgcgcaaaaactacatccgcatcctgacgggcgacaaagtgactgttgaactgaccccgtacgacctgagcaaaggccgcattgtcttccgtagtcgctgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| IF2 | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgagaggatcgcatcaccatcaccatcacggatccatgacagatgtaacgattaaaacgctggccgcagagcgacagacctccgtggaacgcctggtacagcaatttgctgatgcaggtatccggaagtctgctgacgactctgtgtctgcacaagagaaacagactttgattgaccacctgaatcagaaaaattcaggcccggacaaattgacgctgcaacgtaaaacacgcagcacccttaacattcctggtaccggtggaaaaagcaaatcggtacaaatcgaagtccgcaagaaacgcacctttgtgaaacgcgatccgcaagaggctgaacgccttgcagcggaagagcaagcgcagcgtgaagcggaagagcaagcccgtcgtgaggcagaagaatcggctaaacgcgaggcgcaacaaaaagctgaacgtgaggccgcagaacaagctaagcgtgaagctgctgaacaagcgaaacgtgaagctgcggaaaaagacaaagtgagcaatcaacaagacgatatgactaaaaacgcccaggctgaaaaagcccgccgtgagcaggaagctgcagagctcaagcgtaaagctgaagaagaagcgcgtcgtaaactcgaagaagaagcacgtcgcgttgctgaagaagcacgtcgtatggcggaagaaaacaaatggactgataacgcggaaccgactgaagattccagcgattatcacgtcactacttctcaacatgctcgccaggcagaagacgaaagcgatcgtgaagtcgaaggcggccgtggccgtggtcgtaacgcgaaagcagcgcgtccgaagaaaggcaacaaacacgctgaatcaaaagctgatcgtgaagaagcacgcgcagcagtacgtggcggtaaaggcggaaaacgtaaaggttcttcgctgcagcaaggcttccagaagcctgctcaggccgttaaccgtgacgttgtgatcggcgaaactatcaccgttggcgaactggcgaacaagatggcggttaaaggctctcaggtcatcaaagcgatgatgaaactgggcgcaatggcaaccatcaaccaggttatcgatcaggaaaccgcacagctggttgctgaagagatgggccataaagttatcctgcgtcgtgaaaacgagctggaagaggcggtaatgagcgaccgtgacacgggtgctgcggctgaaccgcgcgcgccggttgtgaccatcatgggtcacgttgaccacggtaaaacctctctgctggactacattcgttcaacgaaagtggcctctggcgaagcgggcggcattacccagcacattggtgcataccacgttgaaactgaaaacggcatgatcaccttcctggacaccccggggcacgccgcgtttacttcaatgcgtgctcgtggtgcgcaggcaacggacatcgtagtcctggttgttgctgccgacgacggtgtgatgccgcagaccatcgaagcaatccagcacgcgaaagcggcgcaggtaccggtggtggttgcagtgaacaagatcgataaaccagaagctgatccggatcgcgttaagaacgaactctcccagtacggcatcctgccggaagagtggggcggtgaaagccagttcgtacacgtatctgcgaaagcgggtaccggtatcgatgaactgctggacgctatcctgctgcaggcggaagttctggagctgaaagcggtacgtaaaggtatggcgagcggtgcggttatcgaatccttcctcgataaaggtcgtggtccggttgctaccgttctggtacgtgaaggtactctgcacaagggcgatatcgttctgtgtggcttcgaatacggtcgtgttcgtgcgatgcgtaacgaactgggtcaggaagtgctggaagcgggtccgtccattccggtggaaatcctcggcctgtccggcgtaccggctgcgggtgatgaagttaccgttgtacgtgacgagaagaaagcgcgtgaagttgcactctatcgtcagggtaaattccgcgaagttaaactggcgcgtcagcagaaatctaaactcgagaacatgttcgccaacatgaccgaaggcgaagttcacgaagtgaatatcgtcctgaaggcagacgtacagggttctgtcgaagcgatctccgactccttgctgaaactgtctactgacgaagttaaagtgaagatcatcggttctggcgtaggtggtatcaccgaaaccgacgccaccctggctgcggcgtccaacgccatcctggttggctttaacgtacgtgctgatgcctctgcacgtaaagtgattgaagcggaaagcctggatctgcgttactactccgtcatctataacctgattgacgaagtgaaagcggcgatgagcggtatgctgtctccggaactgaaacagcagattatcggtctggcggaagttcgtgacgtgttcaaatcgccgaaatttggtgccatcgcaggctgtatggttaccgaaggtgtggttaaacgtcacaacccgatccgcgttctgcgtgacaacgtggttatctacgaaggcgagctggagtccctgcgccgcttcaaagatgacgttaacgaagtccgtaacggtatggaatgtggtatcggcgttaagaactacaacgacgtccgcactggcgatgtgatcgaagtattcgaaatcatcgagatccaacgtaccattgcttaaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| IF3 | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgagaggatcgcatcaccatcaccatcacggatccattaaaggcggaaaacgagttcaaacggcgcgccctaaccgtatcaatggcgaaattcgcgcccaggaagttcgcttaacaggtctggaaggcgagcagcttggtattgtgagtctgagagaagctctggagaaagcagaagaagccggagtagacttagtcgagatcagccctaacgccgagccgccggtttgtcgtataatggattacggcaaattcctctatgaaaagagcaagtcttctaaggaacagaagaaaaagcaaaaagttatccaggttaaggaaattaaattccgtcctggtacagatgaaggcgactatcaggtaaaactccgcagcctgattcgctttctcgaagagggtgataaagccaaaatcacgctgcgtttccgcggtcgtgagatggcgcaccagcaaatcggtatggaagtgcttaatcgcgtgaaagacgatttgcaagaactggcagtggtcgaatccttcccaacgaagatcgaaggccgccagatgatcatggtgctcgctcctaagaagaaacagtaaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| EFG | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatggctcgtacaacacccatcgcacgctaccgtaacatcggtatcagtgcgcacatcgacgccggtaaaaccactactaccgaacgtattctgttctacaccggtgtaaaccataaaatcggtgaagttcatgacggcgctgcaaccatggactggatggagcaggagcaggaacgtggtattaccatcacttccgctgcgactactgcattctggtctggtatggctaagcagtatgagccgcatcgcatcaacatcatcgacaccccggggcacgttgacttcacaatcgaagtagaacgttccatgcgtgttctcgatggtgcggtaatggtttactgcgcagttggtggtgttcagccgcagtctgaaaccgtatggcgtcaggcaaacaaatataaagttccgcgcattgcgttcgttaacaaaatggaccgcatgggtgcgaacttcctgaaagttgttaaccagatcaaaacccgtctgggcgcgaacccggttccgctgcagctggcgattggtgctgaagaacatttcaccggtgttgttgacctggtgaaaatgaaagctatcaactggaacgacgctgaccagggcgtaaccttcgaatacgaagatatcccggcagacatggttgaactggctaacgaatggcaccagaacctgatcgaatccgcagctgaagcttctgaagagctgatggaaaaatacctgggtggtgaagaactgactgaagcagaaatcaaaggtgctctgcgacagcgcgttctgaacaacgaaatcatcctggtaacctgtggttctgcgttcaagaacaaaggtgttcaggcgatgctggatgcggtaattgattacctgccatccccggttgacgtacctgcgatcaacggtatcctggacgacggtaaagacactccggctgaacgtcacgcaagtgatgacgagccgttctctgcactggcgttcaaaatcgctaccgacccgtttgttggtaacctgaccttcttccgtgtttactccggtgtggttaactctggtgataccgtactgaactccgtgaaagctgcacgtgagcgtttcggtcgtatcgttcagatgcacgctaacaaacgtgaagagatcaaagaagttcgcgcgggcgacatcgctgctgctatcggtctgaaagacgtaaccactggtgacaccctgtgtgacccggatgcgccgatcattctggaacgtatggaattccctgagccggtaatctccatcgcagttgaaccgaaaaccaaagctgaccaggaaaaaatgggtctggctctgggccgtctggctaaagaagacccgtctttccgtgtatggactgacgaagaatctaaccagaccatcatcgcgggtatgggcgaactgcacctcgacatcatcgttgaccgtatgaagcgtgaattcaacgttgaagcgaacgtaggtaaaccgcaggttgcttaccgtgaaactatccgccagaaagttaccgatgttgaaggtaaacacgcgaaacagtctggtggtcgtggtcagtatggtcatgttgttatcgacatgtacccgctggagccgggttcaaacccgaaaggctacgagttcatcaacgacattaaaggtggtgtaatccctggcgaatacatcccggccgttgataaaggtatccaggaacagctgaaagcaggtccgctggcaggctacccggtagtagacatgggtattcgtctgcacttcggttcttaccatgacgttgactcctctgaactggcgtttaaactggctgcttctatcgcctttaaagaaggctttaagaaagcgaaaccagttctgcttgagccgatcatgaaggttgaagtagaaactccggaagagaacaccggtgacgttatcggtgacttgagccgtcgtcgtggtatgctcaaaggtcaggaatctgaagttactggcgttaagatccacgctgaagtaccgctgtctgaaatgttcggatacgcaactcagctgcgttctctgaccaaaggtcgtgcatcatacactatggaattcctgaagtatgatgaagcgccgagtaacgttgctcaggccgtaattgaagcccgtggtaaaagatctcatcaccatcaccatcactaaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| EFTu | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgtctaaagaaaagtttgaacgtacaaaaccgcacgttaacgtcggtactatcggccacgttgaccatggtaaaacaacgctgaccgctgcaatcactaccgtactggctaaaacctacggcggtgctgctcgcgcattcgaccagatcgataacgcgccggaagaaaaagctcgtggtatcaccatcaacacttctcacgttgaatacgacaccccgacccgtcactacgcacacgtagactgcccggggcacgccgactatgttaaaaacatgatcaccggtgctgcgcagatggacggcgcgatcctggtagttgctgcgactgacggcccgatgccgcagactcgtgagcacatcctgctgggtcgtcaggtaggcgttccgtacatcatcgtgttcctgaacaaatgcgacatggttgatgacgaagagctgctggaactggttgaaatggaagttcgtgaacttctgtctcagtacgacttcccgggcgacgacactccgatcgttcgtggttctgctctgaaagcgctggaaggcgacgcagagtgggaagcgaaaatcctggaactggctggcttcctggattcttacattccggaaccagagcgtgcgattgacaagccgttcctgctgccgatcgaagacgtattctccatctccggtcgtggtaccgttgttaccggtcgtgtagaacgcggtatcatcaaagttggtgaagaagttgaaatcgttggtatcaaagagactcagaagtctacctgtactggcgttgaaatgttccgcaaactgctggacgaaggccgtgctggtgagaacgtaggtgttctgctgcgtggtatcaaacgtgaagaaatcgaacgtggtcaggtactggctaagccgggcaccatcaagccgcacaccaagttcgaatctgaagtgtacattctgtccaaagatgaaggcggccgtcatactccgttcttcaaaggctaccgtccgcagttctacttccgtactactgacgtgactggtaccatcgaactgccggaaggcgtagagatggtaatgccgggcgacaacatcaaaatggttgttaccctgatccacccgatcgcgatggacgacggtctgcgtttcgcaatccgtgaaggcggccgtaccgttggcgcgggcgttgtagcaaaagttctgggcagatctcatcaccatcaccatcactaaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| EFTs | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatggctgaaattaccgcatccctggtaaaagagctgcgtgagcgtactggcgcaggcatgatggattgcaaaaaagcactgactgaagctaacggcgacatcgagctggcaatcgaaaacatgcgtaagtccggtgctattaaagcagcgaaaaaagcaggcaacgttgctgctgacggcgtgatcaaaaccaaaatcgacggcaactacggcatcattctggaagttaactgccagactgacttcgttgcaaaagacgctggtttccaggcgttcgcagacaaagttctggacgcagctgttgctggcaaaatcactgacgttgaagttctgaaagcacagttcgaagaagaacgtgttgcgctggtagcgaaaattggtgaaaacatcaacattcgccgcgttgctgcgctggaaggcgacgttctgggttcttatcagcacggtgcgcgtatcggcgttctggttgctgctaaaggcgctgacgaagagctggttaaacacatcgctatgcacgttgctgcaagcaagccagaattcatcaaaccggaagacgtatccgctgaagtggtagaaaaagaataccaggtacagctggatatcgcgatgcagtctggtaagccgaaagaaatcgcagagaaaatggttgaaggccgcatgaagaaattcaccggcgaagtttctctgaccggtcagccgttcgttatggaaccaagcaaaactgttggtcagctgctgaaagagcataacgctgaagtgactggcttcatccgcttcgaagtgggtgaaggcatcgagaaagttgagactgactttgcagcagaagttgctgcgatgtccaagcagtctagatctcatcaccatcaccatcactaaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| RF1 | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgaaaccgagcattgtggcgaaactggaagcgctgcatgaacgccatgaagaagtgcaggcgctgctgggcgatgcgcagaccattgcggatcaggaacgctttcgcgcgctgagccgcgaatatgcgcagctgagcgatgtgagccgctgctttaccgattggcagcaggtgcaggaagatattgaaaccgcgcagatgatgctggatgatccggaaatgcgcgaaatggcgcaggatgaactgcgcgaagcgaaagaaaaaagcgaacagctggaacagcagctgcaggtgctgctgctgccgaaagatccggatgatgaacgcaacgcgtttctggaagtgcgcgcgggcaccggcggcgatgaagcggcgctgtttgcgggcgatctgtttcgcatgtatagccgctatgcggaagcgcgccgctggcgcgtggaaattatgagcgcgagcgaaggcgaacatggcggctataaagaaattattgcgaaaattagcggcgatggcgtgtatggccgcctgaaatttgaaagcggcggccatcgcgtgcagcgcgtgccggcgaccgaaagccagggccgcattcataccagcgcgtgcaccgtggcggtgatgccggaactgccggatgcggaactgccggatattaacccggcggatctgcgcattgatacctttcgcagcagcggcgcgggcggccagcatgtgaacaccaccggcagcgcgattcgcattacccatctgccgaccggcattgtggtggaatgccaggatgaacgcagccagcataaaaacaaagcgaaagcgctgagcgtgctgggcgcgcgcattcatgcggcggaaatggcgaaacgccagcaggcggaagcgagcacccgccgcaacctgctgggcagcggcgatcgcagcgatcgcaaccgcacctataactttccgcagggccgcgtgaccgatcatcgcattaacctgaccctgtatcgcctggatgaagtgatggaaggcaaactggatatgctgattgaaccgattattcaggaacatcaggcggatcagctggcggcgctgagcgaacaggaataaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| RF2 | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgggcagcagccatcatcatcatcatcacagcagcggcctggtgccgcgcggcagccatatgtttgaaattaatccggtaaataatcgcattcaggacctcacggaacgctccgacgttcttagggggtatcttgactacgacgccaagaaagagcgtctggaagaagtaaacgccgagctggaacagccggatgtctggaacgaacccgaacgcgcacaggcgctgggtaaagagcgttcctccctcgaagccgttgtcgacaccctcgaccaaatgaaacaggggctggaagatgtttctggtctgctggaactggctgtagaagctgacgacgaagaaacctttaacgaagccgttgctgaactcgacgccctggaagaaaaactggcgcagcttgagttccgccgtatgttctctggcgaatatgacagcgccgactgctacctcgatattcaggcggggtctggcggtacggaagcacaggactgggcgagcatgcttgagcgtatgtatctgcgctgggcagaatcgcgtggtttcaaaactgaaatcatcgaagagtcggaaggtgaagtggcgggtattaaatccgtgacgatcaaaatctccggcgattacgcttacggctggctgcgtacagaaaccggcgttcaccgcctggtgcgtaaaagcccgtttgactccggcggtcgtcgccacacgtcgttcagctccgcgtttgtttatccggaagttgatgatgatattgatatcgaaatcaacccggcggatctgcgcattgacgtttatcgcacgtccggcgcgggcggtcagcacgttaaccgtaccgaatctgcggtgcgtattacccacatcccgaccgggatcgtgacccagtgccagaacgaccgttcccagcacaagaacaaagatcaggccatgaagcagatgaaagcgaagctttatgaactggagatgcagaagaaaaatgccgagaaacaggcgatggaagataacaaatccgacatcggctggggcagccagattcgttcttatgtccttgatgactcccgcattaaagatctgcgcaccggggtagaaacccgcaacacgcaggccgtgctggacggcagcctggatcaatttatcgaagcaagtttgaaagcagggttatgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| RF3 | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgagaggatcgcatcaccatcaccatcacggatccgatgacgatgacaaaatgacgttgtctccttatttgcaagaggtggcgaagcgccgcacttttgccattatttctcacccggacgccggtaagactaccatcaccgagaaggtgctgctgttcggacaggccattcagaccgccggtacagtaaaaggccgtggttccaaccagcacgctaagtcggactggatggagatggaaaagcagcgtgggatctccattactacgtctgtgatgcagtttccgtatcacgattgcctggttaacctgctcgacaccccggggcacgaagacttctcggaagatacctatcgtaccctgacggcggtggactgctgcctgatggttatcgacgccgcaaaaggtgttgaagatcgtacccgtaagctgatggaagttacccgtctgcgcgacacgccgatcctcacctttatgaacaaacttgaccgtgatatccgcgacccgatggagctgctcgatgaagttgagaacgagctgaaaatcggctgtgcgccgatcacctggccgattggctgcggcaagctgtttaaaggcgtttaccacctttataaagacgaaacctatctctatcagagcggtaaaggccacaccattcaggaagtccgcattgttaaagggctgaataacccggatctcgatgctgcggttggtgaagatctggcacagcagctgcgtgacgaactggaactggtgaaaggcgcgtctaacgagttcgacaaagagctgttccttgcgggcgaaatcactccggtattcttcggtactgcgctgggtaacttcggcgtcgatcatatgttggatggcctggtggagtgggcacctgcgccgatgccgcgtcagactgatacccgtaccgtagaagcgagcgaagataaatttaccggcttcgtatttaaaattcaggccaacatggacccgaaacaccgcgaccgcgtggcgtttatgcgtgtggtgtccggtaaatatgaaaaaggcatgaaactgcgccaggtgcgcactgcgaaagatgtggtgatctccgacgcgctgacctttatggcgggtgaccgttcgcacgttgaagaagcgtatccgggcgatatcctcggcctgcacaaccacggcaccattcagatcggcgacacctttacccagggtgagatgatgaagttcaccggtattccgaacttcgcaccagaactgttccgtcgtatccgcctgaaagatccgctgaagcaaaaacagctgctcaaagggctggtacagctttccgaagagggcgcggtgcaggtgttccgtccaatctccaacaacgatctgatcgttggtgcagttggtgtgctgcagtttgatgtggtggtagcgcgcctgaagagcgaatacaacgttgaagcagtgtatgagtcagtcaacgttgccactgcccgctgggtagaatgtgcagacgcgaagaaattcgaagagttcaagcgtaagaacgaaagccaactggcgcttgatggcggcgataacctcgcttacatcgctaccagcatggtcaacctgcgcctggcacaggaacgttatccggacgttcagttccaccagacccgcgagcattaaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| RRF | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgattagcgatatcagaaaagatgctgaagtacgcatggacaaatgcgtagaagcgttcaaaacccaaatcagcaaaatacgcacgggtcgtgcttctcccagcctgctggatggcattgtcgtggaatattacggcacgccgacgccgctgcgtcagctggcaagcgtaacggtagaagattcccgtacactgaaaatcaacgtgtttgatcgttcaatgtctccggccgttgaaaaagcgattatggcgtccgatcttggcctgaacccgaactctgcgggtagcgacatccgtgttccgctgccgccgctgacggaagaacgtcgtaaagatctgaccaaaatcgttcgtggtgaagcagaacaagcgcgtgttgcagtacgtaacgtgcgtcgtgacgcgaacgacaaagtgaaagcactgttgaaagataaagagatcagcgaagacgacgatcgccgttctcaggacgatgtacagaaactgactgatgctgcaatcaagaaaattgaagcggcgctggcagacaaagaagcagaactgatgcagttcggatccagatctcatcaccatcaccatcactaaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| MTF | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACAtatgtcagaatcactacgtattatttttgcgggtacacctgactttgcagcgcgtcatctcgacgcgctgttgtcttctggtcataacgtcgttggcgtgttcacccagccagaccgaccggcaggacgcggtaaaaaactgatgcccagcccggttaaagttctggctgaggaaaaaggtctgcccgtttttcaacctgtttccctgcgtccacaagaaaaccagcaactggtcgccgaactgcaggctgatgttatggtcgtcgtcgcctatggtttaattctgccgaaagcagtgctggagatgccgcgtcttggctgtatcaacgttcatggttcactgctgccacgctggcgcggtgctgcaccaatccaacgctcactatgggcgggtgatgcagaaactggtgtgaccattatgcaaatggatgtcggtttagacaccggtgatatgctctataagctctcctgcccgattactgcagaagataccagtggtacgctgtacgacaagctggcagagcttggcccacaagggcttatcaccacgttgaaacaactggcagacggcacggcgaaaccagaagttcaggacgaaactcttgtcacttacgccgagaagttgagtaaagaagaagcgcgtattgactggtcactttcggcagcacagcttgaacgctgcattcgcgctttcaatccatggccaatgagctggctggaaattgaaggacagccggttaaagtctggaaagcatcggtcattgatacggcaaccaacgctgcaccaggaacgatccttgaagccaacaaacaaggcattcaggttgcgactggtgatggcatcctgaacctgctctcgttacaacctgcgggtaagaaagcgatgagcgcgcaagacctcctgaactctcgtcgggaatggtttgttccgggcaaccgtctggtcctcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| CK | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgagaggatcgcatcaccatcaccatcacggatccatgccgttcagcagcacccacaacaaacacaagctgaagttctcagccgaggaggaattcccggacctctcgaagcacaacaaccacatggccaaagtcctcaccccggagctctacaaacgcctccgggataaggagaccccgagcggattcaccctcgacgacgtcatccaaaccggggtcgataaccccggtcacccattcatcatgacggtgggctgcgtggcgggggacgaggagtcctacgaggtgttcaaggatctcttcgaccccgtcatccaggaccgccacggggggtacaaacccaccgataagcaccgcaccgacctcaaccacgagaacctcaaggggggtgacgacctggaccccaaatacgtgctgagcagccgcgtgcgcacggggagaagcattaaggggtactccctgcccccacactgcagccgtggggagcggcgcgccgtcgagaagctgtccgtggaagccctgaacagcctggagggggagttcaagggccgctattaccctctgaaggccatgacggagcaggagcagcagcagctgatcgacgaccacttcctgttcgataaacccgtctccccactgctgctcgcatccgggatggcccgagattggcccgacgccaggggcatctggcacaacgacaacaagacgttcctggtgtgggtgaatgaggaggaccacctgagggtcatctccatggagaagggaggaaatatgaaggaggtcttccggcgcttctgcgtcggcctcaagaagatcgaggagatcttcaagaaggccgggcaccccttcatgtggacggagcacctgggttacatcctgacgtgcccctccaatttgggcacggggctgcgggggggggtccacgtgaagctccccaaactcagccagcaccccaaattcgaggagatcctccataggctgcgcctgcagaaacggggcaccggcggggtggatacggcggcggtgggcgccgtctttgacatctccaacgccgaccggctgggcttctcggaggtggagcaggtgcagatggtggtggacggcgtcaagctcatggtggagatggagaagaagctggagcagaaccagcccatagacgacatgatcccggcccagaagtaaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| MK | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgtcgacagaaaaactgaagcaccacaagatcatctttgtggtgggtggccccggctcagggaaggggacgcaatgcgagaagattgtgcacaagtatgggtacactcacctctccactggggacctgctccgggcagaggtcagctcgggctcagagcggggcaagaagctgcaagccatcatggagaagggcgagctggttcccctggacacggtgctggacatgctgcgggacgccatgttggctaaggcagacacctccaagggtttcctcattgacggctaccctcgcgaggtgaagcagggagaggagtttgaaaagaagattgcccccccgacgctgctgctctacgtggatgcggggaaggagacgatggtgaagcggctgctgaagcggggagagaccagcgggcgggtggacgacaacgaggagaccatcaagaagcgcttggagacgtactacaaggctaccgaacccgtcatcgccttctacaagggccggggcatcgtccgccagctgaatgccgagggcaccgtggatgaggttttccagcaggtctgctcctacctcgacaagctgctcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| NDK | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgagaggatcgcatcaccatcaccatcacggatccgatgacgatgacaaagctattgaacgtactttttccatcatcaaaccgaacgcggtagcaaaaaacgtcattggtaatatctttgcgcgctttgaagctgcagggttcaaaattgttggcaccaaaatgctgcacctgaccgttgaacaggcacgtggcttttatgctgaacacgatggaaaaccgttctttgatggtctggttgaattcatgacctctggcccgatcgtggtttccgtgctggaaggtgaaaacgccgttcagcgtcaccgcgatctgctgggcgcgaccaatccggcaaacgcactggctggtactctgcgcgctgattacgctgacagcctgaccgaaaacggtacccacggttctgattccgtcgaatctgccgctcgcgaaatcgcttatttctttggcgaaggcgaagtgtgcccgcgcacccgttaaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| PPiase | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgacctacactaccagacaaattggtgccaagaacaccttggaatacaaagtttatatcgaaaaggatggtaagccagtttctgccttccacgacattcccttgtacgctgacaaggaaaacaacattttcaacatggttgttgaaattccacgttggaccaacgccaagttagaaatcaccaaggaagaaactttgaacccaatcatccaagacaccaagaagggcaagttgagatttgttagaaactgtttccctcaccatggttacattcacaactatggtgctttcccacaaacttgggaagacccaaacgtaagccacccagaaactaaggcagttggtgacaacgatccaattgatgtgttggaaattggtgaaactattgcttacactggtcaagtcaagcaagttaaggctctaggtatcatggctttattggatgaaggtgagaccgattggaaagttattgccattgatattaacgatccattagccccaaaattgaacgacattgaggatgttgagaaatacttcccaggtctgttgagggctactaacgaatggttcagaatttacaaaatcccagatggtaagccagaaaaccaatttgccttctccggtgaagctaagaacaagaagtacgctttggatatcatcaaggaaacacatgactcctggaaacaattaattgctggtaagtcttctgacagcaagggtattgatttgaccaatgttactttgcctgacaccccaacctactccaaggctgcctctgatgccatcccaccagcttctccaaaggcagatgctccaattgacaagtctattgacaagtggttcttcatctccggttctgttctcgagcaccaccaccaccaccactgaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |
| T7 RNAP | 5’GATCTTAAGGCTAGAGTACTAATACGACTCACTATAGGGGAATTGTGAGCGGATAACAATTCCCCTCTAGAAATAATTTTGTTTAACTTTAAGAAGGAGATATACATatgagaggatcgcatcaccatcaccatcacggatccatgaacacgattaacatcgctaagaacgacttctctgacatcgaactggctgctatcccgttcaacactctggctgaccattacggtgagcgtttagctcgcgaacagttggcccttgagcatgagtcttacgagatgggtgaagcacgcttccgcaagatgtttgagcgtcaacttaaagctggtgaggttgcggataacgctgccgccaagcctctcatcactaccctactccctaagatgattgcacgcatcaacgactggtttgaggaagtgaaagctaagcgcggcaagcgcccgacagccttccagttcctgcaagaaatcaagccggaagccgtagcgtacatcaccattaagaccactctggcttgcctaaccagtgctgacaatacaaccgttcaggctgtagcaagcgcaatcggtcgggccattgaggacgaggctcgcttcggtcgtatccgtgaccttgaagctaagcacttcaagaaaaacgttgaggaacaactcaacaagcgcgtagggcacgtctacaagaaagcatttatgcaagttgtcgaggctgacatgctctctaagggtctactcggtggcgaggcgtggtcttcgtggcataaggaagactctattcatgtaggagtacgctgcatcgagatgctcattgagtcaaccggaatggttagcttacaccgccaaaatgctggcgtagtaggtcaagactctgagactatcgaactcgcacctgaatacgctgaggctatcgcaacccgtgcaggtgcgctggctggcatctctccgatgttccaaccttgcgtagttcctcctaagccgtggactggcattactggtggtggctattgggctaacggtcgtcgtcctctggcgctggtgcgtactcacagtaagaaagcactgatgcgctacgaagacgtttacatgcctgaggtgtacaaagcgattaacattgcgcaaaacaccgcatggaaaatcaacaagaaagtcctagcggtcgccaacgtaatcaccaagtggaagcattgtccggtcgaggacatccctgcgattgagcgtgaagaactcccgatgaaaccggaagacatcgacatgaatcctgaggctctcaccgcgtggaaacgtgctgccgctgctgtgtaccgcaaggacaaggctcgcaagtctcgccgtatcagccttgagttcatgcttgagcaagccaataagtttgctaaccataaggccatctggttcccttacaacatggactggcgcggtcgtgtttacgctgtgtcaatgttcaacccgcaaggtaacgatatgaccaaaggactgcttacgctggcgaaaggtaaaccaatcggtaaggaaggttactactggctgaaaatccacggtgcaaactgtgcgggtgtcgataaggttccgttccctgagcgcatcaagttcattgaggaaaaccacgagaacatcatggcttgcgctaagtctccactggagaacacttggtgggctgagcaagattctccgttctgcttccttgcgttctgctttgagtacgctggggtacagcaccacggcctgagctataactgctcccttccgctggcgtttgacgggtcttgctctggcatccagcacttctccgcgatgctccgagatgaggtaggtggtcgcgcggttaacttgcttcctagtgaaaccgttcaggacatctacgggattgttgctaagaaagtcaacgagattctacaagcagacgcaatcaatgggaccgataacgaagtagttaccgtgaccgatgagaacactggtgaaatctctgagaaagtcaagctgggcactaaggcactggctggtcaatggctggcttacggtgttactcgcagtgtgactaagcgttcagtcatgacgctggcttacgggtccaaagagttcggcttccgtcaacaagtgctggaagataccattcagccagctattgattccggcaagggtctgatgttcactcagccgaatcaggctgctggatacatggctaagctgatttgggaatctgtgagcgtgacggtggtagctgcggttgaagcaatgaactggcttaagtctgctgctaagctgctggctgctgaggtcaaagataagaagactggagagattcttcgcaagcgttgcgctgtgcattgggtaactcctgatggtttccctgtgtggcaggaatacaagaagcctattcagacgcgcttgaacctgatgttcctcggtcagttccgcttacagcctaccattaacaccaacaaagatagcgagattgatgcacacaaacaggagtctggtatcgctcctaactttgtacacagccaagacggtagccaccttcgtaagactgtagtgtgggcacacgagaagtacggaatcgaatcttttgcactgattcacgactccttcggtaccattccggctgacgctgcgaacctgttcaaagcagtgcgcgaaactatggttgacacatatgagtcttgtgatgtactggctgatttctacgaccagttcgctgaccagttgcacgagtctcaattggacaaaatgccagcacttccggctaaaggtaacttgaacctccgtgacatcttagagtcggacttcgcgttcgcgtaaGATCCGGCTGCTAACAAAGCCCGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATAACTAGCATAACCCCTTGGGGCCTCTAAACGGGTCTTGAGGGGTTTTTT3’ |