**Figure S5.** Sequences of binary vector containing Cas9, sgRNA, nonfunctional *GFP* genes and hygromycin resistance gene from LB to RB.

TGGCAGGATATATTGTGGTGTAAACAAATTGACGCTTAGACAACTTAATAACACATTGCGGACGTTTTTAATGTACTGAATTAACGCCGAATTAATTCGGGGGATCTGGATTTTAGTACTGGATTTTGGTTTTAGGAATTAGAAATTTTATTGATAGAAGTATTTTACAAATACAAATACATACTAAGGGTTTCTTATATGCTCAACACATGAGCGAAACCCTATAGGAACCCTAATTCCCTTATCTGGGAACTACTCACACATTATTATGGAGAAACTCGAGCTTGTCGATCGACAGATCCGGTCGGCATCTACTCTATTTCTTTGCCCTCGGACGAGTGCTGGGGCGTCGGTTTCCACTATCGGCGAGTACTTCTACACAGCCATCGGTCCAGACGGCCGCGCTTCTGCGGGCGATTTGTGTACGCCCGACAGTCCCGGCTCCGGATCGGACGATTGCGTCGCATCGACCCTGCGCCCAAGCTGCATCATCGAAATTGCCGTCAACCAAGCTCTGATAGAGTTGGTCAAGACCAATGCGGAGCATATACGCCCGGAGTCGTGGCGATCCTGCAAGCTCCGGATGCCTCCGCTCGAAGTAGCGCGTCTGCTGCTCCATACAAGCCAACCACGGCCTCCAGAAGAAGATGTTGGCGACCTCGTATTGGGAATCCCCGAACATCGCCTCGCTCCAGTCAATGACCGCTGTTATGCGGCCATTGTCCGTCAGGACATTGTTGGAGCCGAAATCCGCGTGCACGAGGTGCCGGACTTCGGGGCAGTCCTCGGCCCAAAGCATCAGCTCATCGAGAGCCTGCGCGACGGACGCACTGACGGTGTCGTCCATCACAGTTTGCCAGTGATACACATGGGGATCAGCAATCGCGCATATGAAATCACGCCATGTAGTGTATTGACCGATTCCTTGCGGTCCGAATGGGCCGAACCCGCTCGTCTGGCTAAGATCGGCCGCAGCGATCGCATCCATAGCCTCCGCGACCGGTTGTAGAACAGCGGGCAGTTCGGTTTCAGGCAGGTCTTGCAACGTGACACCCTGTGCACGGCGGGAGATGCAATAGGTCAGGCTCTCGCTAAACTCCCCAATGTCAAGCACTTCCGGAATCGGGAGCGCGGCCGATGCAAAGTGCCGATAAACATAACGATCTTTGTAGAAACCATCGGCGCAGCTATTTACCCGCAGGACATATCCACGCCCTCCTACATCGAAGCTGAAAGCACGAGATTCTTCGCCCTCCGAGAGCTGCATCAGGTCGGAGACGCTGTCGAACTTTTCGATCAGAAACTTCTCGACAGACGTCGCGGTGAGTTCAGGCTTTTTCATATCTCATTGCCCCCCGGGATCTGCGAAAGCTCGAGAGAGATAGATTTGTAGAGAGAGACTGGTGATTTCAGCGTGTCCTCTCCAAATGAAATGAACTTCCTTATATAGAGGAAGGTCTTGCGAAGGATAGTGGGATTGTGCGTCATCCCTTACGTCAGTGGAGATATCACATCAATCCACTTGCTTTGAAGACGTGGTTGGAACGTCTTCTTTTTCCACGATGCTCCTCGTGGGTGGGGGTCCATCTTTGGGACCACTGTCGGCAGAGGCATCTTGAACGATAGCCTTTCCTTTATCGCAATGATGGCATTTGTAGGTGCCACCTTCCTTTTCTACTGTCCTTTTGATGAAGTGACAGATAGCTGGGCAATGGAATCCGAGGAGGTTTCCCGATATTACCCTTTGTTGAAAAGTCTCAATAGCCCTTTGGTCTTCTGAGACTGTATCTTTGATATTCTTGGAGTAGACGAGAGTGTCGTGCTCCACCATGTTATCACATCAATCCACTTGCTTTGAAGACGTGGTTGGAACGTCTTCTTTTTCCACGATGCTCCTCGTGGGTGGGGGTCCATCTTTGGGACCACTGTCGGCAGAGGCATCTTGAACGATAGCCTTTCCTTTATCGCAATGATGGCATTTGTAGGTGCCACCTTCCTTTTCTACTGTCCTTTTGATGAAGTGACAGATAGCTGGGCAATGGAATCCGAGGAGGTTTCCCGATATTACCCTTTGTTGAAAAGTCTCAATAGCCCTTTGGTCTTCTGAGACTGTATCTTTGATATTCTTGGAGTAGACGAGAGTGTCGTGCTCCACCATGTTGGCAAGCTGCTCTAGCCAATACGCAAACCGCCTCTCCCCGCGCGTTGGCCGATTCATTAATGCAGCTGGCACGACAGGTTTCCCGACTGGAAAGCGGGCAGTGAGCGCAACGCAATTAATGTGAGTTAGCTCACTCATTAGGCACCCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGTGGAATTGTGAGCGGATAACAATTTCACACAGGAAACAGCTATGACCATGATTACGAATTCGAGCTCGGTACCAAAAATTATATCCTGTGGTCGTATATTACGAACTTTGCTTAAGTGATGTTAATTATGAATCTTATACCCTTGATTCTAATTCAAAATTATTACCCAAAAAATGGCATCATTATTAAGAACCTTCCATCTCCATCAGAGGTGTAACGGAATGAATTAGATCTAAGCAAAGTTATTGGTTTATCTCATCGGAACTGCAAAACTCAACTAACTGAAAAGTACAAAACCACTGAATCATATTATTTGAGATTTTTTTTAGGTCAAATTTTAGGTTTCAGTTACAGAAAACGAAGAGAAAAACCCAGAAATTGAACGCCGAAGAACAGAGGAAGAAGAAATCGATCTGGAAAATTTTGCAAAAAAAAAAAGCACCGACTCGGTGCCACTTTTTCAAGTTGATAACGGACTAGCCTTATTTTAACTTGCTATTTCTAGCTCTAAAACCCATGTGCACCTTGAAGCGCAATCACTACTTCGACTCTAGCTGTATATAAACTCAGCTTCGTTTTCTTATCTAAGCGATGTGGGACTTTTGAAGATTGTTTTCAACTTAAATGGGCCTATATAAGAAATACTATTGTTCTTTCCCATATAAATGGGCCTGCTTCTCTTCTTTCAGATTCCCAGGGGCCTTTTGAAGATTATCTTCATATCTTAAGAATGAAGATGTTTTATTCAATCAAATTCTTGAAGGTTCGATGCCTAATCATTCTAATCCTGGGACAAACTATGAAACAAGATACAAAAACTCCGAATGGAAAGTTAAAAAGAAGAAAACGAAAGCTACGGTTCAAGAAAATGTAAGCTGATAAACAAAAAAAAACTGTATGAACGAAGAAGAAGAAAAAAAGCTAAGAAGAAATGATGTATTGTGCGGAAGGCAAGTCGAGTTTCCGTTGTTCAACGAAGCTTCATGAGGCTCAAACTCGTGTCGTTCGCTAGAAACCTCTTCTACAGGCTTTACGTCGACCCATGGGAATTCGAGCTCCCCGATCTAGTAACATAGATGACACCGCGCGCGATAATTTATCCTAGTTTGCGCGCTATATTTTGTTTTCTATCGCGTATTAAATGTATAATTGCGGGACTCTAATCATAAAAACCCATCTCATAAATAACGTCATGCATTACATGTTAATTATTACATGCTTAACGTAATTCAACAGAAATTATATGATAATCATCGCAAGACCGGCAACAGGATTCAATCTTAAGAAACTTTATTGCCAAATGTTTGAACGATCGGGGAAATTCGAGCTGGTCACCAATGGATCCGAATTAATTCTTACACCTTGCGCTTCTTCTTCGGGTCCGCGCGGGAGTCGCCGCCCAGCTGGCTCAGGTCGATGCGCGTCTCGTACAGGCCGGTGATGCTCTGGTGGATCAGGGTCGCGTCCAGCACCTCTTTCGTGGAGGTGTAGCGCTTGCGGTCGATCGTGGTGTCGAAGTACTTGAACGCGGCCGGGGCGCCCAGGTTCGTCAGGGTGAACAGGTGGATGATGTTCTCCGCCTGCTCGCGGATGGGCTTGTCGCGGTGCTTGTTGTAGGCGCTCAGCACCTTGTCCAGGTTCGCGTCGGCCAGGATCACGCGCTTGGAGAACTCCGAGATCTGCTCGATGATCTCGTCCAGGTAGTGCTTGTGCTGCTCCACGAACAGCTGCTTCTGCTCGTTGTCCTCCGGCGAGCCCTTCAGCTTCTCGTAGTGGGACGCCAGGTACAGGAAGTTCACGTACTTGCTGGGCAGGGCCAGCTCGTTGCCCTTCTGCAGCTCGCCCGCGGAGGCCAGCATGCGCTTGCGGCCGTTCTCCAGCTCGAACAGCGAGTACTTCGGCAGCTTGATGATCAGGTCCTTCTTCACCTCTTTGTAGCCCTTGGCCTCCAGGAAGTCGATGGGGTTCTTCTCGAACGAGCTGCGCTCCATGATGGTGATGCCCAGCAGCTCCTTCACGCTCTTCAGCTTCTTGGACTTGCCCTTCTCCACCTTCGCCACCACCAGCACGCTGTAGGCCACGGTCGGGGAGTCGAAGCCGCCGTACTTCTTGGGGTCCCAGTCCTTCTTGCGGGCGATCAGCTTGTCCGAGTTGCGCTTCGGCAGGATGCTCTCCTTGGAGAAGCCGCCCGTCTGCACCTCGGTCTTCTTCACGATGTTCACCTGGGGCATGCTCAGCACCTTGCGCACGGTCGCGAAGTCGCGGCCCTTGTCCCACACGATCTCGCCCGTCTCGCCGTTGGTCTCGATCAGCGGGCGCTTGCGGATCTCGCCGTTGGCCAGCGTGATCTCGGTCTTGAAGAAGTTCATGATGTTGGAGTAGAAGAAGTACTTCGCGGTGGCCTTGCCGATCTCCTGCTCCGACTTGGCGATCATCTTGCGCACGTCGTACACCTTGTAGTCGCCGTACACGAACTCGCTCTCCAGCTTGGGGTACTTCTTGATCAGCGCGGTGCCCACCACGGCGTTCAGGTACGCGTCGTGGGCGTGGTGGTAGTTGTTGATCTCGCGCACCTTGTAGAACTGGAAGTCCTTGCGGAAGTCGCTGACCAGCTTGGACTTCAGGGTGATCACCTTCACCTCGCGGATCAGCTTGTCGTTCTCGTCGTACTTCGTGTTCATGCGGGAGTCCAGGATCTGCGCCACGTGCTTCGTGATCTGGCGGGTCTCCACCAGCTGGCGCTTGATGAAGCCCGCCTTGTCCAGCTCCGACAGGCCACCGCGCTCGGCCTTGGTCAGGTTGTCGAACTTGCGCTGCGTGATCAGCTTGGCGTTCAGCAGCTGGCGCCAGTAGTTCTTCATCTTCTTCACCACTTCCTCCGACGGCACGTTGTCGCTCTTGCCGCGGTTCTTGTCGCTGCGGGTCAGCACCTTGTTGTCGATCGAGTCGTCCTTCAGGAAGCTCTGGGGCACGATGTGGTCCACGTCGTAGTCGGACAGGCGGTTGATGTCCAGCTCCTGGTCCACGTACATGTCGCGGCCGTTCTGCAGGTAGTACAGGTACAGCTTCTCGTTCTGCAGCTGGGTGTTCTCCACGGGGTGCTCCTTCAGGATCTGCGAGCCCAGCTCCTTGATGCCTTCCTCGATGCGCTTCATGCGCTCGCGGCTGTTCTTCTGGCCCTTCTGCGTGGTCTGGTTCTCGCGGGCCATCTCGATCACGATGTTCTCCGGCTTGTGGCGGCCCATCACCTTCACCAGCTCGTCCACCACCTTCACGGTCTGCAGGATGCCCTTCTTGATCGCGGGGGAGCCCGCCAGGTTGGCGATGTGCTCGTGCAGGGAGTCGCCCTGGCCCGACACCTGGGCCTTCTGGATGTCCTCTTTGAAGGTCAGCGAGTCGTCGTGGATCAGCTGCATGAAGTTGCGGTTCGCGAAGCCGTCGCTCTTCAGGAAGTCCAGGATGGTCTTGCCGGACTGCTTGTCGCGGATGCCGTTGATCAGCTTGCGGCTCAGGCGGCCCCAGCCGGTGTAGCGGCGACGCTTCAGCTGCTTCATCACCTTGTCGTCGAACAGGTGGGCGTACGTCTTCAGGCGCTCCTCGATCATCTCGCGGTCCTCGAACAGCGTCAGGGTCAGCACGATGTCCTCCAGGATGTCCTCGTTCTCCTCGTTGTCCAGGAAGTCCTTGTCCTTGATGATCTTCAGCAGGTCGTGGTAGGTGCCCAGGCTGGCGTTGAAGCGGTCCTCCACGCCCGAGATCTCCACGCTGTCGAAGCACTCGATCTTCTTGAAGTAGTCCTCTTTCAGCTGCTTCACCGTCACCTTGCGGTTGGTCTTGAACAGCAGGTCCACGATCGCCTTCTTCTGCTCGCCGCTCAGGAAGGCGGGCTTGCGCATGCCCTCGGTCACGTACTTCACCTTCGTCAGCTCGTTGTACACGGTGAAGTACTCGTACAGCAGGGAGTGCTTCGGCAGCACCTTCTCGTTGGGCAGGTTCTTGTCGAAGTTGGTCATGCGCTCGATGAACGACTGCGCGCTGGCGCCCTTGTCCACCACTTCCTCGAAGTTCCAGGGCGTGATGGTCTCCTCCGACTTGCGGGTCATCCACGCGAAGCGGCTGTTGCCGCGGGCCAGCGGGCCCACGTAGTAGGGGATGCGGAACGTCAGGATCTTCTCGATCTTCTCGCGGTTGTCCTTCAGGAACGGGTAGAAGTCCTCTTGGCGACGCAGGATGGCGTGCAGCTCGCCCAGGTGGATCTGGTGGGGGATGCTGCCGTTGTCGAAGGTGCGCTGCTTGCGCAGCAGGTCCTCGCGGTTCAGCTTCACCAGCAGCTCCTCCGTGCCGTCCATCTTCTCCAGGATGGGCTTGATGAACTTGTAGAACTCCTCTTGCGACGCGCCGCCGTCGATGTAGCCGGCGTAGCCGTTCTTGCTCTGGTCGAAGAAGATCTCCTTGTACTTCTCCGGCAGCTGCTGGCGCACCAGCGCCTTCAGCAGGGTCAGGTCCTGGTGGTGCTCGTCGTAGCGCTTGATCATGGACGCCGACAGGGGGGCCTTCGTGATCTCGGTGTTCACGCGCAGGATGTCGGACAGCAGGATGGCGTCCGACAGGTTCTTCGCGGCCAGGAACAGGTCCGCGTACTGGTCGCCGATCTGGGCCAGCAGGTTGTCCAGGTCGTCGTCGTAGGTGTCCTTGCTCAGCTGCAGCTTCGCGTCCTCGGCCAGGTCGAAGTTGGACTTGAAGTTCGGCGTCAGGCCCAGCGACAGCGCGATCAGGTTGCCGAACAGGCCGTTCTTCTTCTCGCCGGGCAGCTGGGCGATCAGGTTCTCCAGGCGACGGCTCTTGGACAGGCGCGCGCTCAGGATCGCCTTGGCGTCCACGCCGGAGGCGTTGATCGGGTTCTCCTCGAACAGCTGGTTGTAGGTCTGCACCAGCTGGATGAACAGCTTGTCCACGTCCGAGTTGTCGGGGTTCAGGTCGCCCTCGATCAGGAAGTGGCCGCGGAACTTGATCATGTGCGCCAGGGCCAGGTAGATCAGGCGCAGGTCCGCCTTGTCGGTGCTGTCCACCAGCTTCTTGCGCAGGTGGTAGATCGTCGGGTACTTCTCGTGGTAGGCCACCTCGTCCACGATGTTGCCGAAGATGGGGTGGCGCTCGTGCTTCTTGTCTTCCTCCACCAGGAAGGACTCCTCCAGGCGGTGGAAGAACGAGTCGTCCACCTTGGCCATCTCGTTGCTGAAGATCTCCTGCAGGTAGCAGATGCGGTTCTTGCGACGCGTGTAGCGGCGACGCGCGGTGCGCTTCAGGCGCGTCGCCTCGGCGGTCTCGCCGGAGTCGAACAGCAGGGCGCCGATCAGGTTCTTCTTGATCGAGTGGCGGTCGGTGTTGCCCAGCACCTTGAACTTCTTGGAGGGCACCTTGTACTCGTCCGTGATCACCGCCCAGCCCACCGAGTTCGTGCCGATGTCCAGGCCGATGCTGTACTTCTTGTCCATATGCTTATCATCGTCATCTTTATAGTCTTTCTTGTCATCATCGTCCTTGTAATCACTAGTCAGATCTACCATGGTCAAGAGTCCCCCGTGTTCTCTCCAAATGAAATGAACTTCCTTATATAGAGGAAGGGTCTTGCGAAGGATAGTGGGATTGTGCGTCATCCCTTACGTCAGTGGAGATATCACATCAATCCACTTGCTTTGAAGACGTGGTTGGAACGTCTTCTTTTTCCACGATGCTCCTCGTGGGTGGGGGTCCATCTTTGGGACCACTGTCGGCAGAGGCATCTTCAACGATGGCCTTTCCTTTATCGCAATGATGGCATTTGTAGGAGCCACCTTCCTTTTCCACTATCTTCACAATAAAGTGACAGATAGCTGGGCAATGGAATCCGAGGAGGTTTCCGGATATTACCCTTTGTTGAAAAGTCTCAATTGCCCTTTGGTCTTCTGAGACTGTATCTTTGATATTTTTGGAGTAGACAAGTGTGTCGTGCTCCACCATGTTGACGAAGATTTTCTTCTTGTCATTGAGTCGTAAGAGACTCTGTATGAACTGTTCGCCAGTCTTTACGGCGAGTTCTGTTAGGTCCTCTATTTGAATCTTTGACTCCATGTCTAGAGTCGACCTGCAGGCATGCAAGCTTGGCACTGGCCGTCGTTTTACAACGTCGTGACTGGGAAAACCCTGGCGTTACCCAACTTAATCGCCTTGCAGCACATCCCCCTTTCGCCAGCTGGCGTAATAGCGAAGAGGCCCGCACCGATCGCCCTTCCCAACAGTTGCGCAGCCTGAATGGCGAATGCTAGAGCAGCTTGAGCTTGGATCAGATTGTCGTTTCCCGCCTTCAGTTTAGCTTCATGGAGTCAAAGATTCAAATAGAGGACCTAACAGAACTCGCCGTAAAGACTGGCGAACAGTTCATACAGAGTCTCTTACGACTCAATGACAAGAAGAAAATCTTCGTCAACATGGTGGAGCACGACACACTTGTCTACTCCAAAAATATCAAAGATACAGTCTCAGAAGACCAAAGGGCAATTGAGACTTTTCAACAAAGGGTAATATCCGGAAACCTCCTCGGATTCCATTGCCCAGCTATCTGTCACTTTATTGTGAAGATAGTGGAAAAGGAAGGTGGCTCCTACAAATGCCATCATTGCGATAAAGGAAAGGCCATCGTTGAAGATGCCTCTGCCGACAGTGGTCCCAAAGATGGACCCCCACCCACGAGGAGCATCGTGGAAAAAGAAGACGTTCCAACCACGTCTTCAAAGCAAGTGGATTGATGTGATATCTCCACTGACGTAAGGGATGACGCACAATCCCACTATCCTTCGCAAGACCCTTCCTCTATATAAGGAAGTTCATTTCATTTGGAGAGAACACGGGGGACTCTTGAC