

Supplementary material

Development of an activity-directed selection system enabled significant improvement of the carboxylation efficiency of Rubisco

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Table S1. Primers used in this study. The underlined nucleotides indicate the restriction sites as marked in parentheses at the end. The boxed nucleotides represent site mutations.

Name	Sequence
rbc-Nde-for	5'-AAGGTCTCATATGGTTCAGACCAA ATCTGCTGGG-3' (NdeI)
rbc-Xho-rev	5'-GTGGTGCCTCGAGACCAACAAAACCTTAGTAAC-3' (XhoI)
2ndT7-for	5'-TAAGCTCCTGATCCCGCGAAATTAATACGACTCA-3'
2ndT7-rev	5'-TTTAAACTCCATCTGTATATCTCCTTCTTAAAGTT-3'
3rdT7-for	5'-ATAAACTTTGATCCCGCGAAATTAATACGACTCA-3'
3rdT7-rev	5'-TAAAGTTTTCATCTGTATATCTCCTTCTTAAAGTT-3'
trc-for	5'-CTAGATGTTGACAATTAATCATCCGGCTCGTATAATGTGTGGA ATTGTGAGCGGATAACAATT-3' (XbaI)
trc-rev	5'-CTAGAAATTGTTATCCGCTCACAATTCCACACATTATACGAGC CGGATGATTAATTGTCAACA-3' (XbaI)
prk-for	5'-ATAACTAAGCCATGCCGGCTATGAGCAAGCCAGATCGTGTTG- 3' (BglI)
prk-rev	5'-AATATTTGACTATCGTCACCAGGCTTGAGTATAGCCTGGCTAG ACGCTAGCGGCGACGGG-3' (PshAI)
trpR-for	5'-CTGAGACTTGCGCATGAAATTACGGGTATTTGTAGGAC-3' (FspI)
trpR-rev	5'-AAATTCACGTTCCGGCTTATGACGCTTACTACCGCTATT-3'
Ptp-for	5'-AGTAAGCGTCATAAGCCGAACGTGAAATTCCTCTCTTG-3'
Ptp-rev	5'-CGAAGATTGCCGGCATGGCCATTGTGCGATACCCTTTTACGTG- 3' (BglI)

rbcl197-for	5'-TCTTGACTTCACCATG	GATGACGAAAACATCAACTCTCAGC-3'
rbcl197-rev	5'-ATGTTTTTCGTCATC	CATGGTGAAGTCAAGACCACCACGGAGACATT-3'
rbcl341-for	5'-CCGCCACCCTCGGT	ATCGTAGACCTGATGCGTGAAGACT-3'
rbcl341-rev	5'-CATCAGGTCTACGA	TACCGAGGGTGGCGGCGCGATCGCCTTCG-3'
prk2021-for	5'-CCGGTTGCGGCA	TGGCAACCTTCCTAAATCGCCTTGCCGACTTG-3'
prk2021-rev	5'-CGATTTAGGAAGGTTG	CCATGCCGCAACCGGAGTCACC-3'
EP-rbcL-for	5'-AAGGAGATATACATATGGTTCAGACCAAAT-3'	(NdeI)
EP-rbcL-rev	5'-ATCAGGAGCTTAGAGAGTGTCAA-3'	
EP-rbcS-for	5'-TCCGATAAAGAGGACATAAATCAATGA-3'	
EP-rbcS-rev	5'-GGTGGTGGTGCTCGAGACCAACAAAACCTTA-3'	(XhoI)
T7-rbcX-for	5'-TTGACACTCTCT	AAGCTCCTGAT-3'
T7-rbcX-rev	5'-GATTTATGTCCTCTTTATCGGA-3'	
rbcl-his-rev	5'-ATCTTTACCTAGGAGCTTAGTGGTGGTGGTGGTGGTGACCAG	AAGAGAGAGTGTCAACGGTATCGAA-3'
rbcl-his-for	5'-CTTCTGGTCACCACCACCACCACCTAAGCTCCTAGGCCCG	CGAAATTAA-3'
