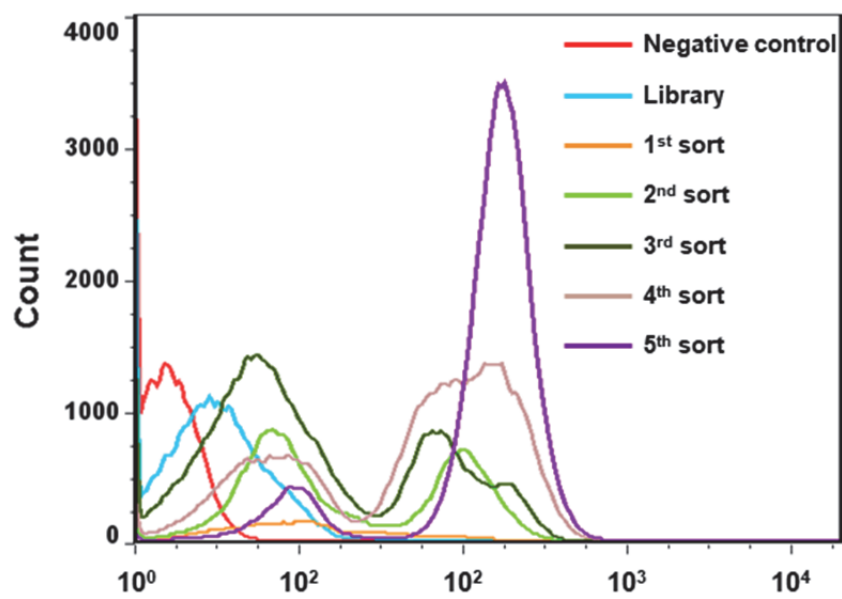


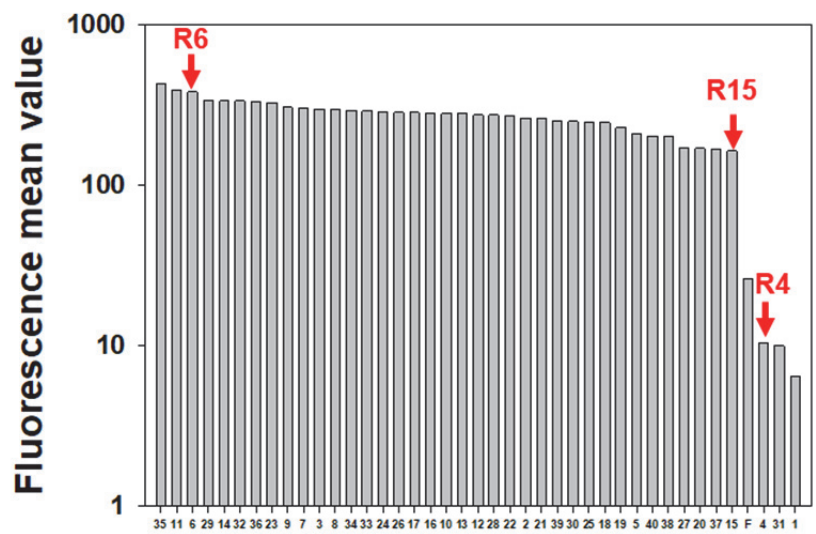
**Supplementary Table S1.** List of PCR primers used in this study.

<b>Primer name</b>	<b>Primer sequences (5' to 3')</b>
Fw_sfGFP	TGCTAGCTACTAGTGAAAGAGGAGAAATACCATATGCA TCACCATCACCATCACATGAGCAAAGGAGAAGAACTTT
Rv_sfGFP-	ATGACTCTGCAGAACGCATGAGAAAGCCCCCGGAAGAT
ECK120033736	CACCTTCCGGGGGCTTTTTTATTGCCTCGAGTTATTATTT
Fw_Lib	CTAGCTACTAGTNNNNNNNNNNNTACCATATGCATCA CCATCACC
Rv_sfGFP	AGCGCTCGAGTTATTATTTGTAGAGCTCATCCATGCC
Fw_Seq_pDHJC	AGGCCAGTCTTTTCGACTG
Rv_Seq_pDHJC	TATCAACGGTGGTATATCCAGTGA
Fw_pgm	ACACACGAAGACCATATGCCAGCGTAAGCCCTTT
Rv_pgm	GTGTCTCGAGTTATCAATGGTGATGGTGATGGTGCTTCT GCGCAGCCTTGGCAA
Fw_galU	ACACGGTCTCATATGATTAAGCCCCTTAAAAAAGCCGTA TTG
Rv_galU	GTGTGGTCTCCTCGAGTTATCAATGGTGATGGTGATGGT GTTTATACTTTTTGAGGAATTCCCGCACG
Fw_ndp	ACACGGTCTCATATGGCAGTCGAACGTACCCTCTCCATC
Rv_ndp	GTGTGGTCTCCTCGAGTTATCAATGGTGATGGTGATGGT GGGGCAGGATCTCGGTGCCGG
Fw_GibV_pDHJCR1	CTCGAGGCAATAAAAAAGCCCCCG
Rv_GibV_pDHJCR15	CTATCGTCCTAGTCCCTACTGCTAGCACAAATACCTAGGA CTGAGCTAG
Fw_Gib1_R15_pgm	AGTAGGGACTAGGACGATAGTACTAGTTAATGAGAGGC CTACCATATGCCAG
Rv_Gib1_pgm	TGACGTGTAACCTCGATTGATCTCGAGTTATCAATGGTGA TGGTGATGGTGC
Fw_Gib2_R15_galU	ATCAATCGAGTTACACGTCATACTAGTTAATGAGAGGCC TACCATATGATTAAGCCCC
Rw_Gib2_galU	CACTAGTTCCGAGACTGTACCTCGAGTTATCAATGGTGA TGGTGATGGTGTTTATACTTT
Fw_Gib3_R15_ndp	GTACAGTCTCGGAACTAGTGTACTAGTTAATGAGAGGCC TACCATATGGCAGTCG
Rv_Gib3_ndp	ACCTTCCGGGGGCTTTTTTATTGCCTCGAG

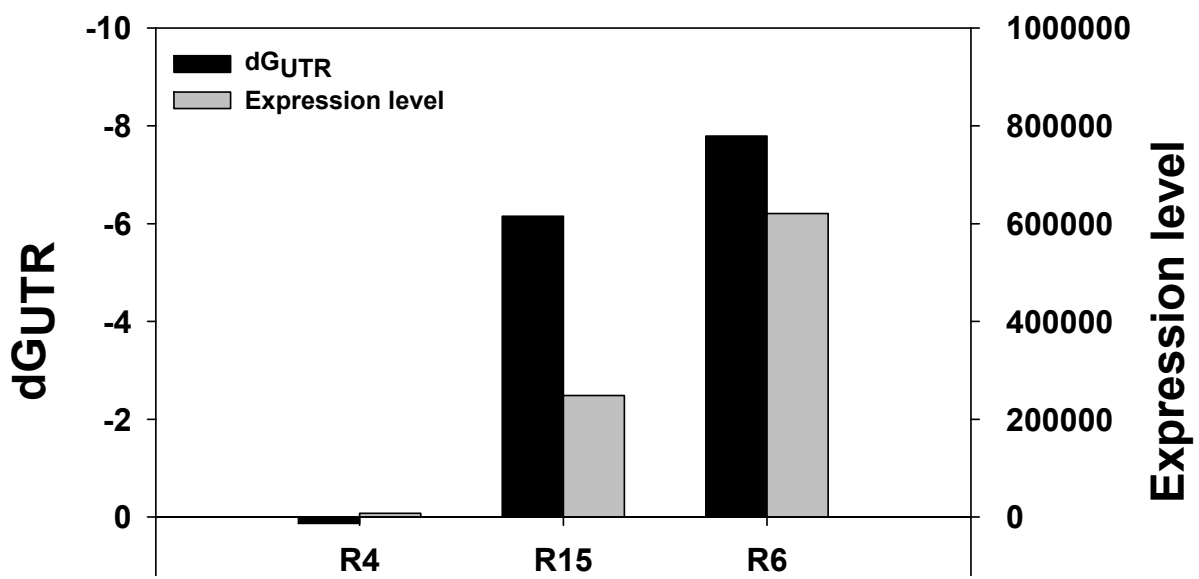


**Supplementary Figure S1.** FACS analysis of recombinant *K. xylinus* harboring RBS library.

Totally 50,000 cells were counted for the analysis of negative control, library, 1<sup>st</sup> sort and 2<sup>nd</sup> sort, and 100,000 cells were counted for the analysis of 3<sup>rd</sup> sort, 4<sup>th</sup> sort and 5<sup>th</sup> sort.



**Supplementary Figure S2.** Fluorescence mean values of single recombinant *K. xylinus* clones harboring RBS library from the FACS analysis



**Supplementary Figure S3.** Thermodynamic analysis of newly isolated RBSes and sfGFP gene