

Electronic Supplementary Information

Glucose monitoring in living cells with single fluorescent protein-based sensors

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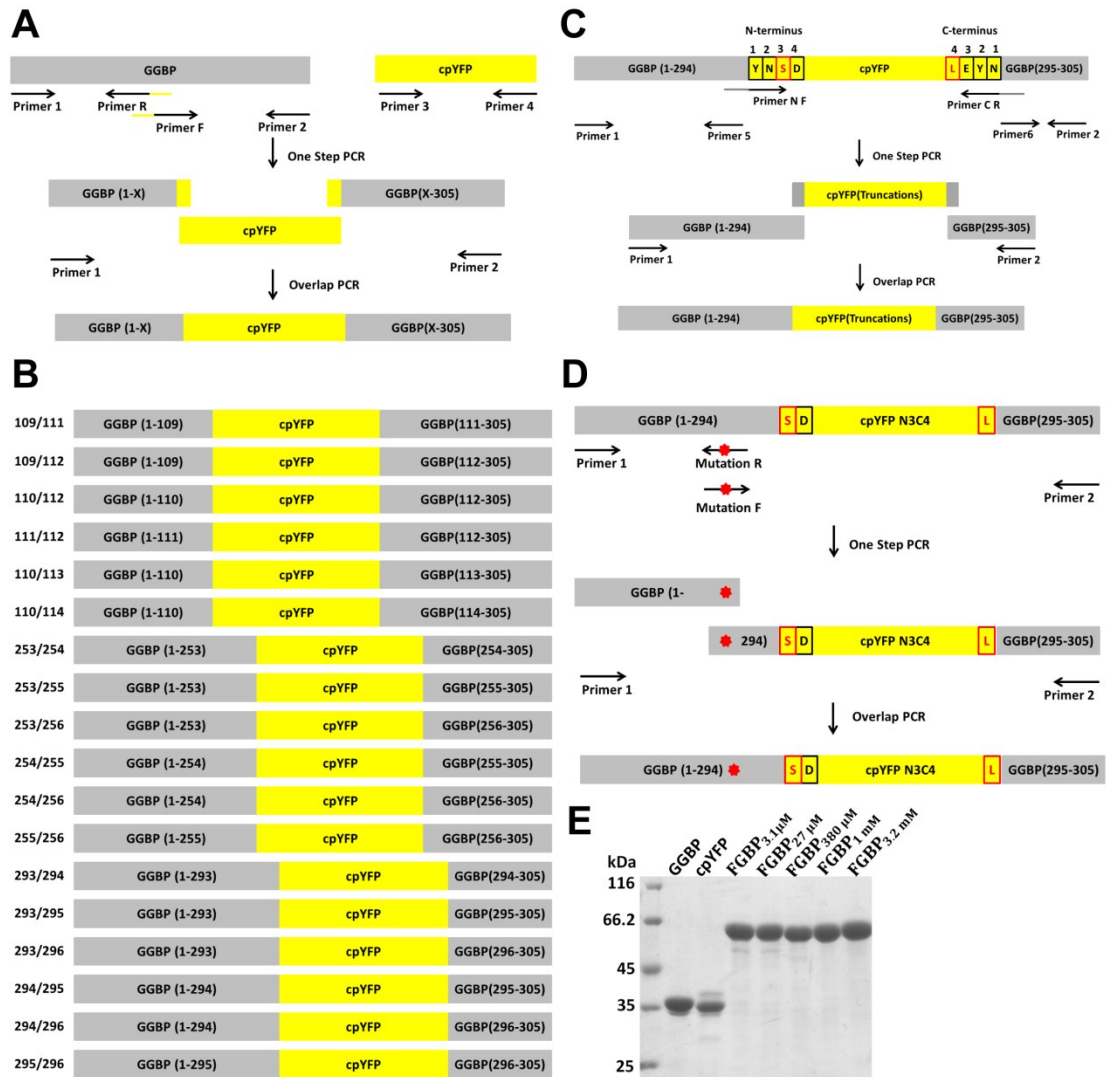


Fig. S1 (A) GGBP and cpYFP chimeras were obtained by overlap PCR. **(B)** Schematic model for eighteen GGBP and cpYFP chimeras. **(C)** GGBP and truncated cpYFP chimeras were obtained by overlap PCR. **(D)** FGFP₂₇ μM variants were obtained by overlap PCR. **(E)** Purified sensor proteins were resolved with 10% SDS-PAGE.

Table S1 Primers Used for FGBP Construction, Truncation, and Mutation

Primer	Sequence 5` to 3`
1	CCCGGATCCGGCTGATACTCGCATTGGT
2	CCCAAGCTTTTATTTCTTGCTGAATTCAGC
3	TACAACAGCGACAACGTC
4	GTTGTA CTCCAGCTTG TG
109 R	GACGTTGTCGCTGTTGTAGCCAACGTAGTAGGCTTT
110 R	GACGTTGTCGCTGTTGTAAGTGCCAACGTAGTAGGC
111 R	GACGTTGTCGCTGTTGTAGTCAGTGCCAACGTAGTA
111 F	CACAAGCTGGAGTACAACGACTCCAAAGAGTCCGGC
112 F	CACAAGCTGGAGTACAACCTCAAAGAGTCCGGCATT
113 F	CACAAGCTGGAGTACAACAAGAGTCCGGCATTATT
114 F	CACAAGCTGGAGTACAACGAGTCCGGCATTATTCAA
253 R	GACGTTGTCGCTGTTGTAGGTGCCCGCCAGTGACC
254 R	GACGTTGTCGCTGTTGTATACGGTGCCCGCCAGTGC
255 R	GACGTTGTCGCTGTTGTACAGTACGGTGCCCGCCAG
254 F	CACAAGCTGGAGTACAACGTA CTGAACGATGCTAAC
255 F	CACAAGCTGGAGTACAACCTGAACGATGCTAACAAAC
256 F	CACAAGCTGGAGTACAACAACGATGCTAACAAACCA
293 R	GACGTTGTCGCTGTTGTATACGCGGACCACTTTGTT
294 R	GACGTTGTCGCTGTTGTAAGGTACGCGGACCACTTT
295 R	GACGTTGTCGCTGTTGTAATAAGGTACGCGGACCAC
294 F	CACAAGCTGGAGTACAACCTTATGTTGGCGTAGAT
295 F	CACAAGCTGGAGTACAACCTATGTTGGCGTAGATAAA
296 F	CACAAGCTGGAGTACAACGTTGGCGTAGATAAAGAC
5	AGGTACGCGGACCACTTT
6	TATGTTGGCGTAGATAAA
cpYFP N1 F	AAAGTGGTCCGCGTACCTAACAGCGACAACGTCTAT
cpYFP N2 F	AAAGTGGTCCGCGTACCTAGCGACAACGTCTATATC
cpYFP N3 F	AAAGTGGTCCGCGTACCTGACAACGTCTATATCATG
cpYFP N4 F	AAAGTGGTCCGCGTACCTAACGTCTATATCATGGCC
cpYFP C1 R	TTTATCTACGCCAACATAGTACTCCAGCTTGTGCCC
cpYFP C2 R	TTTATCTACGCCAACATACTCCAGCTTGTGCCCCAG
cpYFP C3 R	TTTATCTACGCCAACATACAGCTTGTGCCCCAGGAT
cpYFP C4 R	TTTATCTACGCCAACATACTTGTGCCCCAGGATGTT
A213R F	CGCCAACAACGATCGTATGGCAAT
A213R R	ATTGCCATACGATCGTTGTTGGCG
L238S F	TGGCGTCGATGCGTCTCCAGAAGC
L238S R	GCTTCTGGAGACGCATCGACGCCA
N256S F	GGGCACCGTACTGTCTGATGCTAA
N256S R	TTAGCATCAGACAGTACGGTGCCC

Supplementary Note

The DNA sequence of FGBP_{1mM}

ATGGCTGATACTCGCATTGGTGTAAACAATCTATAAGTATGATGATAACTTTATGTCTGTAGTGCGCAAGGC
TATTGAGCAAGATGCGAAAGCCGCGCCAGATGTTTCTGCTGATGAATGATTCTCAGAATGACCAAGTCC
AAGCAGAACGATCAGATCGACGTATTGCTGGCGAAAGGGTGAAGGCACTGGCAATCAACCTGGTTGAC
CCGGCAGCTGCGGGTACGGTGATTGAGAAAGCGCGTGGGCAAACGTGCCGGTGGTTTTCTTCAACAAA
GAACCGTCTCGTAAGGCGCTGGATAGCTACGACAAAGCCTACTACGTTGGCACTGACTCCAAAGAGTCCG
GCATTATTCAAGGCGATTTGATTGCTAAACTGGGCGGCGAATCAGGGTTGGGATCTGAACAAAGACG
GTCAGATTGAGTTCGACTGCTGAAAGGTGAACCGGGCCATCCGGATGCAGAAGCACGTACCACTTACGT
GATTAAGAATTGAACGATAAAGGCATCAAACTGAACAGTTACAGTTAGATACCGCAATGTGGGACACC
GCTCAGGCGAAAGATAAGATGGACGCCTGGCTGTCTGGCCCGAACGCCAACAAAATCGAAGTGGTTATC
GCCAACAAACGATGCGATGGCAATGGGCGCGGTTGAAGCGCTGAAAGCACACAACAAGTCCAGCATTCCG
GTGTTTGGCGTCGATGCGTCTCCAGAAGCGCTGGCGCTGGTGAATCCGGTGCCTGGCGGGCACCGTA
CTGAACGATGCTAACAACCAGGCGAAAGCGACCTTTGATCTGGCGAAAACCTGGCCGATGGTAAAGGT
GCGGCTGATGGCACCAACTGGAAAATCGACAACAAAGTGGTCCGCGTACCTGACAACGTCTATATCATGG
CCGACAAGCAGAAGAACGGCATCAAGGCCTACTTCAAGATCCGCCACAACGTGAGGACGGCAGCGTGC
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CCTGAGCTTCCAGTCCGTCCTGAGCAAAGACCCCAACGAGAAGCGCGATCACATGGTCCTGCTGGAGTTC
GTGACCGCCGCGGGATCACTCTCGGCATGGACGAGCTGTACAACGTGGATGGCGGTAGCGGTGGCACC
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CGGCCACAAGTTCAGCGTGTCCGGCGAGGGCGAGGGCGATGCCACCTACGGCAAGCTGACCCTGAAGCT
GATCTGCACCACCGCAAGCTGCCCGTGCCTGGCCACCCTCGTGACCACCCTCGGCTACGGCCTGAAG
TGCTTCGCCCCTACCCGACCACATGAAGCAGCAGACTTCTTCAAGTCCGCCATGCCCGAAGGCTACGT
CCAGGAGCGCACCATCTTCTTCAAGGACGACGGCAACTACAAGACCCGCGCCGAGGTGAAGTTCGAGGG
CGACACCCTGGTGAACCGCATCGAGCTGAAGGGCATCGGCTTCAAGGAGGACGGCAACATCCTGGGGCA
CAAGTATGTTGGCGTAGATAAAGACAACCTGGCTGAATTCAGCAAGAAATAA

The amino acid sequence of FGBP_{1mM}

MADTRIGVTIYKYDDNFMSVVRKAIEQDAKAAPDVQLLMNDSQNDQSKQNDQIDVLLAKGVKALAINLVDP
AAAGTVIEKARGQNPVFFNKEPSRKALDSYDKAYVVGTDSESGIIGDLIAKHWAANQGWDLNKDGGIQ
FVLLKGEPGHPDAEARTTYVIKELNDKGIKTEQLQLDTAMWDTAQAKDKMDAWLSGPNANKIEVVIANND
MAMGAVEALKAHNKSSIPVFGVDASPEALALVKSGALAGTVLNDANNQAKATFDLAKNLADGKGAADGTN
WKIDNKVVRVDPNVYIMADKQKNGIKAYFKIRHNVEDGSVQLADHYQQNTPIGDGPVLLPDNHYLSFQSVLS
KDPNEKRDMVLLFVTAAGITLGMDELYNVDGSGGTGSKGEELFTGVVPILVELDGDVNGHKFSVSGE
GDATYGLTLKLICTTGKLPVPWPTLVTTLGYGLKCFARYPDHMKQHDFFKSAMPEGYVQERTIFFKDDGNYK
TRAEVKFEGDTLVNRIELKIGIFKEDGNILGHKYVGVDKDNLAEFSK