

Supplementary figure 5. The sequence of the components of the BphP1-QPAS1 system in combination with the *As*LOV2-signal protein inserted into the plasmid construct carrying components of the BphP1-QPAS1 system in combination with the VVD protein at the *Pme*I/*Hind*III restriction sites.

*Pme*I  
**gtttaaacAGTTAATTAA**TGAGACTTTTCAACAAAGGGTAATATCCGGAACCTCCTCGGATTCCATTGCCAGCTATCTGTCACTTT  
 ATTTGTGAAGATAGTGAAAAGGAAGGTGGCTCCTACAAATGCCATCATTGCGATAAAGGAAAGGCCATCGTTGAAGATGCCTCTGCCG  
 CaMV35S ACAGTGGTCCCAAAGATGGACCCCCACCCACGAGGAGCATCGTGAAAAAGAAGACGTTCCAACCACGTCTTCAAAGCAAGTGGATTG  
 ATGTGATATCTCCACTGACGTAAGGGATGACGCACAATCCCACTATCCTTCGCAAGACCCCTCCTCTATATAAGGAAGTTCATTTCAT  
 TTGGAGAGAACA**GGCGCGCC**ATGGTGGCAGGTCATGCCCTTGGCAGCCCCGCATTGGGACCGCCGATCTTTGAATTGCGAACGTGA  
 AGAGATCCACCTCGCCGGCTCGATCCAGCCGCATGGCGCGCTTCTGGTCGTGAGCGAGCCGGATCATCGCATCATCCAGGCCAGCGCC  
 AACGCCGCGGAATTTCTGAATCTCGGAAGCGTGCTCGGCGTTCCGCTCGCCGAGATCGACGGCGATCTGTTGATCAAGATCCTGCCGC  
 ATCTCGATCCACCGCCGAAGGCATGCCGGTGGCGGTGCGCTGCCGGATCGGCAATCCCTCCACGGAGTACGACGGTCTGATGCATCG  
 GCCTCCGGAAGGCGGGCTGATCATCGAGCTCGAACGTGCCGGCCCGCGATCGATCTGTCCGGCAGCTGGCGCCGGCGCTGGAGCGG  
 ATCCGCACGGCGGGCTCGCTGCGCGCGCTGTGCGATGACACCGCGCTGCTGTTTCAGCAGTGCACCGGCTACGACCGGGTGATGGTGT  
 ATCGCTTCGACGAGCAGGGCCACGGCGAAGTGTCTCCGAGCGCCACGTGCCGGGGCTCGAATCCTATTTTCGCAACCGCTATCCGTC  
 GTCGGACATTCGCGAGATGGCGCGGGCTGTACGAGCGGCAGCGCTCCGCGTGCTGGTCGACGTGAGCTATCAGCCGGTGCCGCTG  
 BphP1 GAGCCGCGGCTGTGCGCGCTGACCGGGCGCGATCTCGACATGTGCGGCTGCTTCTGCGCTCGATGTGCGCGATCCATCTGCAGTACC  
 TGAAGAACATGGGCGTGCGCGCCACCCTGGTGGTGTGCTGGTGGTGGCGGCAAGCTGTGGGGCTGGTTGCCTGTATCATTATCT  
 GCCGCGTTTCATGCATTTTCGAGCTGCGGGCGATCTGCGAACTGCTCGCCGAAGCGATCGCGACGCGGATCACCGCGCTTGAGAGCTTC  
 GCGCAGAGCCAGTCGGAGCTGTTTCGTGACGCGGCTCGAACAGCGCATGATCGAAGCGATTACCCGTGAAGGCGATTGGCGCGCAGCGA  
 TTTTCGACACCAGCCAATCGATCCTGCAGCCGCTGCACGCCGCCGGTTGCGCGCTGGTGTACGAAGACCAGATCAGGACCATCGGCGA  
 CGTGCCTTCCACGCAGGATGTGCGCGAGATCGCCGGGTGGCTCGATCGCCAGCCGCGCGCGGGTGACCTCGACCGCGTCGCTCGGT  
 CTCGACGTGCCGAGCTCGCGCATCTGACGCGGATGGCGAGCGGCTGGTTCGCGGCGCCGATTTTCGGATCATCGCGGCGAGTTTCTGA  
 TGTGGTTCCGCCCCGAGCGCTCCACACCGTTACCTGGGGCGGCGATCCGAAGAAGCCGTTACGATGGGCGATACACCGGCGGATCT  
 GTCGCCGCGGCGCTCCTTCGCCAAATGGCATCAGGTTGTGCAAGGCACGTCCGATCCGTGGACGGCCGCCGATCTCGCCGCGGCTCGC  
 ACCATCGGTCAGACCGTCGCCGACATCGTGCTGCAATTCCGCGCGGTGCGGACACTGATCGCCCGCAACAGTACGAACAGTTTTCGT  
 CCCAGGTGCACGCTTCGATGCAGCCGGTGTGATCACCGACGCCGAAGGCCGCATCCTGCTGATGAACGACTCGTTCCGCGACATGTT  
 GCCGGCGGGTTCGCCATCCGCCGTCCATCTCGACGATCTCGCCGGGTTCCTCGTCAATCGAACGATTTCTGCGCAACGTGCGCGAA  
 CTGATCGATCACGGCCGCGGTGGCGCGCGAAGTTCTGCTGCGCGGCGCAGGCAACCGCCGTTGCCGCTGGCAGTGCGCGCCGATC  
 CGGTGACGCGCACGGAGGACAGTCGCTCGGCTTCGTGCTGATCTTCAGCGACGCTACCGATCGTCGACCGCAGATGCCGCACGCAC  
 GCGTTTCCAGGAAGGCATTTCTTGCAGCGCACGTCCCGGCGTGCGGCTCGACTCCAAGTCCGACCTGTTGCACGAGAAGCTGCTGTCC  
 GCGCTGGTTCGAGAACGCGCAGCTTGCCGATTGGAATCACTTACGGCGTCGAGACCGGACGCATCGCCGAGCTGCTCGAAGGCGTCC  
 GCCAGTCGATGCTGCGCACCGCCGAAGTGTCTCGGCATCTGGTGCAGCACGCGGCGCGCACGGCCGGCAGCGACAGCTCGAGCAATGG  
 CTCGCAACAAGAAGGAATTCGATAGTGCTGGTAGTGCTGGTAGTGCTGGTACTAGAGCGTACAGCCGCGCGGTACGAAAAACAAT  
 VP16 TACGGGTCTACCATCGAGGGCTGCTCGATCTCCCGGACGACGACGCCCCGAAGAGGCGGGGCTGGCGGCTCCGCGCCTGTCTTTTC  
 TCCCCGCGGGACACACGCGCAGACTGTGACGGCCCCCCCCGACCGATGTGACCTGGGGGACGAGCTCCACTTAGACGGCGAGGACGT

VP16 GGCGATGGCGCATGCCGACGCGCTAGACGATTTGATCTGGACATGTTGGGGACGGGGATTCCCCGGGTCCGGGATTTACCCCCAC  
GACTCCGCCCTTACGGCGCTCTGGATATGGCCGACTTCGAGTTTGAGCAGATGTTTACCGATGCCCTTGGAATTGACGAGTACGGTG

T2A GGAGCGGCCCGCAGGGCAGAGGAAGTCTGCTAACATGCGGTGACGTCGAGGAGAATCCTGGCCCAATGATTGAACAAGATGGATTGCA  
CGCAGGTTCTCCGGCCGCTTGGGTGGAGAGGCTATTCCGGCTATGACTGGGCACAACAGACAATCGGCTGCTCTGATGCCGCCGTGTTT  
CGGCTGTCAGCGCAGGGGCGCCCGTTCTTTTGTCAAGACCGACCTGTCCGGTGCCCTGAATGAACTGCAGGACGAGGCAGCGCGGC  
TATCGTGGCTGGCCACGACGGGCGTTCTTTCGCGCAGCTGTGCTCGACGTTGTCACTGAAGCGGGAAGGGACTGGCTGCTATTGGGCGA  
AGTGCCGGGGCAGGATCTCCTGTCTATCTCACCTTGCTCCTGCCGAGAAAGTATCCATCATGGCTGATGCAATCGCGCGGCTGCATACG  
KanR CTTGATCCGGCTACCTGCCCATTTCGACCACCAAGCGAAACATCGCATCGAGCGAGCAGTACTCGGATGGAAGCCGGTCTTGTCGATC  
AGGATGATCTGGACGAAGAGCATCAGGGGCTCGCGCCAGCCGAACTGTTCCGCCAGGCTCAAGGCGCGCATGCCGACGGCGATGATCT  
CGTCGTGACCCATGGCGATGCCTGCTTGCCGAATATCATGGTGGAAAATGGCCGCTTTTCTGGATTTCATCGACTGTGGCCGGCTGGGT  
GTGGCGGACCGCTATCAGGACATAGCGTTGGCTACCCGTGATATTGCTGAAGAGCTTGGCGGCGAATGGGCTGACCGCTTCTCGTGC  
TTTACGGTATCGCCGCTCCCGATTTCGAGCGCATCGCCTTCTATCGCCTTCTTGACGAGTTCTTCTGAGATCTGTCGATCGACAAGCT  
CaMV \*  
poly(A) CGACGGATCTTCGAGTTTCTCCATAATAATGTGTGAGTAGTTCAGATAAGGGAATTAGGGTTCCTATAGGGTTTCGCTCATGTGTT  
signal GAGCATATAAGAAACCCCTTAGTATGTATTTGTATTTGTAAAATACTTCTATCAATAAAATTTCTAATTCTTAAACCAAATCCAGTA  
NOS CTAAATCCAGATCCCCGAATTATGAACCGCAACGTTGAAGGAGCCACTCAGCCGCGGGTTCTGGAGTTTAAATGAGCTAAGCACAT  
promoter ACGTGAGAAACCATTATTGCGCGTTCAAAGTTCGCTTAAAGTCACTATCAGCTAGCAAATATTTCTTGTCAAAAATGCTCCACTGACG  
NES TTCCATAAATTCCCCTCGGTATCCAATTAGAGTCCCAATGGGAATTGATCTCTCAGGATTAACACTGCAGGGAGGTGGTGAAGCAAG  
CTACTGTCTTCTATCGAACAAGCATGCGATATTTGCCGACTTAAAAGCTCAAGTGCTCCAAAGAAAACCGAAGTGCGCCAAGTGTC  
TGAAGAACAACCTGGGAGTGTCGCTACTCTCCCAAACCAAAGGTCTCCGCTGACTAGGGCACATCTGACAGAAGTGGAATCAAGGCT  
Gal4 AGAAAGACTGGAACAGCTATTTCTACTGATTTTCTCTGAGAAGACCTTGACATGATTTTGAAAATGGATTCTTTACAGGATATAAAA  
GCATTGTTAACAGGATTATTTGTACAAGATAATGTGAATAAAGATGCCGTACAGATAGATTGGCTTCAGTGGAGACTGATATGCCTC  
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AAGCCAACCGGGCGGCGGTGAATGCGATCAGCCGCGTCGAGCGCGGCAATGACGACCTTGCGGGGCGTGATTTCTCGCCGAAGTGGC  
QPAS1 GGCTGCCGATCGCGATGCGGTGCGCGACATGCTGGCCAGGTGCGTCAGCGCGGCACCGCACTCAGCGTCCCTCGTTTCATCTCGGCCGT  
TACGACCGCGCCTGGATGCTGCGCGGTTTCGCTGATGTCTGCCGAGCGTCGTCAGGTTTTCTCTGCTGCACTTCACCCCGGTGACCACGA  
CTCCCGCATCGACGAATTCCCGGCTAGCGCGCGCGGCGCCTTTTTGGCTACTTCACTTGAACGTATTGAGAAGAACTTTGTCATTAC  
TGACCCAAGGTTGCCAGATAATCCATTATATTCGCGTCCGATAGTTTCTTGCAGTTGACAGAATATAGCCGTGAAGAAATTTGGGA  
AsLOV2 AGAAACTGCAGGTTTCTACAAGGTCTGAACTGATCGCGCGACAGTGAGAAAAATTAGAGATGCCATAGATAACCAAACAGAGGTCA  
CTGTTTCAGCTGATTAATTATACAAAGAGTGGTAAAAAGTTCTGGAACCTTTTCACTTGCAGCCTATGCGAGATCAGAAGGGAGATGT  
CCAGTACTTTATTGGGGTTCAGTTGGATGGAAGTGCAGCATGTCCGAGATGTGCCGAGAGAGAGGGGCGTGATGCTGGCCAAGAAGACC  
SV40 \*  
poly(A) GCCGAGAACATC NNNNNNNNNNNN . . . NNNNNNNNNNNN T GACTCCCCCTGAACCTGAAACATAAAATGAATGCAATTGTTGTTGTTA  
signal ACTTGTTTATTGCAGCTTATAATGGTTACAAATAAAGCAATAGCATCACAAATTCACAAATAAAGCATTTTTTTCACTGCATTCTAG

SV40  
poly(A)  
signal

NOS  
terminator  
(rev)

pEGFP  
(rev)

TTGTGGTTTGTCCAAACTCATCAATGTATCTTAAGGCGGATCTAGTAACATAGATGACACCGCGCGGATAATTTATCCTAGTTTGCG  
 CGCTATATTTTGTCTTCTATCGCGTATTAAATGTATAATTGCGGGACTCTAATCATAAAAACCCATCTCATAAATAACGTCATGCATT  
 ACATGTTAATTATTACATGCTTAACGTAATTCAACAGAAATTATATGATAATCATCGCAAGACCGGCAACAGGATTCAATTTTAAGAA  
 ACTTTATTGCCAAATGTTTGAACGATCTGCAGCCGGGCGGCCGCTTTACTTGTACAGCTCGTCCATGCCGTGAGTGATCCCGGCGGGCG  
 GTCACGAACTCCAGCAGGACCATGTGATCGCGCTTCTCGTTGGGGTCTTTGCTCAGGGCGGACTGGGTGCTCAGGTAGTGGTTGTCGG  
 GCAGCAGCACGGGGCCGTCGCCGATGGGGGTGTTCTGCTGGTAGTGGTGCGCGAGCTGCACGCTGCCGTCTCGATGTTGTGGCGGAT  
 CTTGAAGTTCACCTTGATGCCGTTCTTCTGCTTGTGCGCCATGATATAGACGTTGTGGCTGTTGTAGTTGTACTCCAGCTTGTGCCCC  
 AGGATGTTGCCGTCTCCTTGAAGTCGATGCCCTTCAGCTCGATGCGGTTACCAGGGTGTCGCCCTCGAACTTCACCTCGGCGCGGG  
 TCTTGAGTTGCGCGTCGTCCTTGAAGAAGATGGTGCGCTCCTGGACGTAGCCTTCGGGCATGGCGGACTTGAAGAAGTCGTGCTGCTT  
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 GTGCAGATGAACTTCAGGGTCAGCTTGCCGTAGGTGGCATCGCCCTCGCCCTCGCCGGACACGCTGAACTTGTGGCCGTTTACGTGCG  
 CGTCCAGCTCGACCAGGATGGGCACCACCCCGGTGAACAGCTCCTCGCCCTTGCTCACCATTGGATCCaagctt

← *HindIII*  
GGATCCaagctt

|        |   |
|--------|---|
| NES21  | GACGAGCTGCTGAAGGAGCTGGCCGACCTGAACCTGGAC |
| NES27  | GAGGAGCTGGCCAAGGAGCTGGCCGACCTGAACCTGGAC |
| Degron | GACGAGGCCGCCCCGACGCCGCGGC               |