

1 **SUPPLEMENTARY DATA 1.** Sequence of plasmids constructed in this study.

2 pAEQ(I)

3 In red the half sequence of the PmeI site after the cloning

4 PmeI

5 CAGACATCACCGTTTATGACCTCCAAGCAGTACTCCGTCAAGCTTACCTCCGACTTCGACAA
6 CCCCCGCTGGATCGGCCGCCACAAGCACATGTTCAACTTCCTCGACGTCAACCACAACGGCA
7 AGATTTCCTCGACGAGATGGTCTACAAGGCCTCCGACATCGTCATCAACAACCTCGGCGCT
8 ACCCCCGAGCAGGCCAAGCGCCACAAGGACGCCGTGAGGCCTTCTTCGGCGGTGCCGGCAT
9 GAAGTACGGCGTCGAGACCGACTGGCCCCGCTACATCGAGGGCTGGAAGAAGCTCGCCACCG
10 ACGAGCTCGAGAAGTACGCCAAGAACGAGCCCACCCTCATCCGCATCTGGGGCGACGCCCTC
11 TTCGACATCGTCGACAAGGACCAGAACGGTGCCATCACCTCGACGAGTGGAAGGCCTACAC
12 CAAGGCCGCCGGCATCATTTCAGTCCAGCGAGGACTGCGAAGAGACCTTCCGCGTCTGCGACA
13 TCGACGAGTCCGGCCAGCTCGATGTCGATGAGATGACCCGCCAGCACCTCGGCTTCTGGTAC
14 ACCATGGACCCCGCCTGCGAGAAGCTCTACGGCGGTGCCGTCCCCTAAAAACGCCATGTCTA

15 PmeI

16

17 pAEQ(II)

18 In red the half sequence of the SfiI restriction site

19 SfiI

ku80^{5'}

20 TCGAGCTCGGTACGGCCATATAGGCCCATGAAGGCGCATCTGCACGATGCGCGACTCCATCT
21 CACAAGACGGGACCAGGAAACGACGCCGCAAAGCAGCATGAGAGCTCTGCGCGGGCGAAGA
22 GCAGTCTTGTACGAGCTGGAAGTCTGATCGGGGCGCTGGAGGACGGCCTGAAGAATCTTGGG
23 GATGCCAATGCGGATGCGAGGTCCACTGCGTCTGGGAAGAGGGGTGCTTGGGGGAGCGGAAA
24 TGGGCTGGGCGACGGGGAGATTTCGACGAAGAAAGGACTTGCTGGTTAATGCGAAGAAGGAGA
25 AGAATGGATTGGAGGATTTGTAAACGCCATGGCTGCTAAGAGCAGGATTGATAATGCGGTT
26 GCGTCGATAACAAGACAAGGAGGCGTTGGTTGGGTCTGCGAGCCGGAAGCCACCTCGTTTCGGG

27 GAGGGTGCTGGGCAAGGAGACGGAGCGGACTCGCGAGCTAGATAACCAAGGCGTTTTGCAGT
28 TACAGAAGCGGACGATGGAGGATCAAGATATGAGCATTGAAGAGTTGAGGAAGATTGTACAA
29 CGCCAGAAGGAACTGGGGATTGCTATCAATGCTGAGTTGGAGATTCAGAATGAGCTTCTGAA
30 GCTCACGGATGAAGATACGGACAGGTATGTGTGGACCCAGGCTTCGGCTCTAATAACCCATT
31 CTAACATCTGTGCGCTAAAGGTTAGGGAAGAAGATCGAAATCGGGAACAAGAGGGTTGGCAA
32 AATATCTTAGCTTGGCATCTCACGGGCACTTCTGCTTCTACACAGCTTATTCATTGTTTCTG

33

gpdA^P

34 AACCATTTAGAGGAGCGACTATCTTTGCCCGGTGTATGAAACCGGAAAGGCCGCTCAGGAGC
35 TGGCCAGCGGCGCAGACCGGGAACACAAGCTGGCAGTCGACCCATCCGGTGCTCTGCACTCG
36 ACCTGCTGAGGTCCCTCAGTCCCTGGTAGGCAGCTTTGCCCGTCTGTCCGCCCGGTGTGTC
37 GCGGGGTTGACAAGGTCGTTGCGTCAGTCCAACATTTGTTGCCATATTTTCTGCTCTCCC
38 CACCAGCTGCTCTTTTCTTTTCTTTTCTTTTCCCATCTTCAGTATATTCATCTTCCCATCC
39 AAGAACC³TTTATTTCCCCTAAGTAAGTACTTTGCTACATCCATACTCCATCCTTCCCATCCC
40 TTATTCCTTTGAACCTTTCAGTTCGAGCTTCCCAC³TTTCATCGCAGCTTGACTAACAGCTAC

41

aeqS

42 CCCGCTTGAGCAGACATCACCGTTTATGACCTCCAAGCAGTACTCCGTCAAGCTTACCTCCG
43 ACTTCGACAACCCCCGCTGGATCGGCCGCCACAAGCACATGTTCAACTTCCTCGACGTCAAC
44 CACAACGGCAAGATTTCCCTCGACGAGATGGTCTACAAGGCCTCCGACATCGTCATCAACAA
45 CCTCGGCGCTACCCCCGAGCAGGCCAAGCGCCACAAGGACGCCGTCGAGGCCTTCTTCGGCG
46 GTGCCGGCATGAAGTACGGCGTCGAGACCGACTGGCCCGCTACATCGAGGGCTGGAAGAAG
47 CTCGCCACCGACGAGCTCGAGAAGTACGCCAAGAACGAGCCACCCTCATCCGCATCTGGGG
48 CGACGCCCTTTCGACATCGTCGACAAGGACCAGAACGGTGCCATCACCTTCGACGAGTGGA
49 AGGCCTACACCAAGGCCGCGGCATCATTTCAGTCCAGCGAGGACTGCGAAGAGACCTTCCGC
50 GTCTGCGACATCGACGAGTCCGGCCAGCTCGATGTCGATGAGATGACCCGCCAGCACCTCGG

51

ku80^{3'}

52 CTTCTGGTACACCATGGACCCCGCCTGCGAGAAGCTCTACGGCGGTGCCGTCCCCTAAGATC
53 AAGATGCTCTAGAATAGAAATTGAGTCAGGGCATGAGGGAAGGAAGAGCCAGATAAAGGTAG
54 CTCATTGATGCATGGACAAACACGACTCTCCAGGCAGACGCGCAATATTTCCCGATTGGGTG
55 TTAGGCAGAACGCGAAGGCACATGACATCATTAATGGAAGGTGCGTGGACATTGCACGTAGT
56 AAGTGTACATACTTCGGGTCCAATGAAAAGCCGTTGCACCTGTCATATTCCGCAGGACGGGT
57 GCGTCGAAATATGTTCCGGCATTCCCTAGCTCTTCATCTTCCAACAACCATCTGATCCCGTC
58 TTGTGCTCTTATCTGCATCCGAATATCCCAGACCCAGCAGTTGACAGATTATAAAGTGCATC
59 ATTAATTGCTGGACAGGCAATATGACTGATCCTCGCCCCTACCATCTTCTTAGGTACAGAAT
60 CCCTGGTTATCAGGATGTGAACATGTCGCTGACTTCGGGCGCAAGCTACGGTACCCTATTGG
61 GTGTGCAAGTGTCCCAGGTGAACTTCATTCTGCCAGCTAGATATCCACTACGCTGTAACTC
62 AAAGGCGCAACAGACATTTATTGGGGGCGTTATTGCTTTCCGAGTGCTCCCTCGTCCTCAGT
63 TCTCAGCGTTGCAAACCTTCGATATTCCCGGTGTACTTCACGCTTCAGTCCGCACTCCCCGTA
64 GTTATCGCCTTGACTTCCAGCAAAGGTGGCCAGCTCAATGGCATTTCGGGACTTCTCGCTCC
65 SfiI
66 TGAAAGTCGATTTGGGACACTCCTGCCTCTCGCAACTGTTGCAGTGTCTGGGGGCCTATATG
67 GCCGGCATGCAAGCTTG