

Figure S1. Confirmation of the genes deletion of *adhP3* (a) and *alkR* (b) in BFDE- $\Delta adhP3\Delta alkR::Kan$. The PCR products were analyzed by 1% agarose gel electrophoresis. Lane M, DNA marker. (a) *adhP3*-UP-F and *adhP3*-DOWN-R were used as primers, BFDE (lane 1, 1011 bp) and BFDE- $\Delta adhP3\Delta alkR::Kan$ (lane 2, 502 bp) were used as templates. (b) *alkR*-UP-F and *alkR*-DOWN-R were used as primers, BFDE (lane 3, 1098 bp) and BFDE- $\Delta adhP3\Delta alkR::Kan$ (lane 4, 1724 bp) were used as templates.

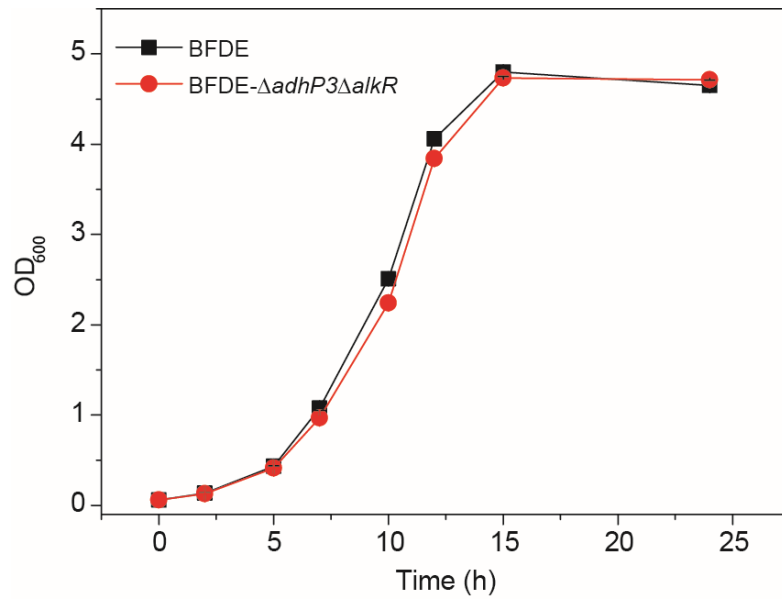


Figure S2. OD₆₀₀ measurements of BFDE and BFDE- Δ adhP3 Δ alkR strains when grown in LB medium.

Table S1. Primers used for gene deletion

Primers	Sequence (5'-3')
adhP3-UP-F	ATGAAAGCTGCCGTTGTCACTC
adhP3-UP-R	CTGCAGGTCCACGGAGAATTCACCTGCAGAACCACGCCG
adhP3-FRT-F	CGGCGTGGTTCTGCAGGTGAATTCTCCGTGGACCTGCAG
adhP3-FRT-R	ATGCCGTCCAGCACCACTCGGTACCGAGCTCGGATCCG
adhP3-DOWN-F	CGGATCCGAGCTCGGTACCGACTGGTGCTGGACGGCAT
adhP3-DOWN-R	CTAGCGGCGGAAGTCGATAAC
adhP4-UP-F	ATGAAAGCAATCGCCATTACCC
adhP4-UP-R	CTGCAGGTCCACGGAGAATTCACCGCATCCCAGCCCAG
adhP4-FRT-F	CTGGGCTGGGATGCGGTGAATTCTCCGTGGACCTGCAG
adhP4-FRT-R	CGTTTTCAAACATCGAGCGGGGTACCGAGCTCGGATCCG
adhP4-DOWN-F	CGGATCCGAGCTCGGTACCCCGCTCGATGTTTGAAACG
adhP4-DOWN-R	TAAAAACCCCTCCAGCACGAT
alkR-UP-F	ATGTCCGAATCAAATGTTTACCC
alkR-UP-R	CTGCAGGTCCACGGAGAATTCCTAGCCTGGGCGGAGATC
alkR-FRT-F	GATCTCCGCCAGGCTAAGAATTCCTCCGTGGACCTGCAG
alkR-FRT-R	CGTATAGGCACCCGCGCGGTACCGAGCTCGGATCCG
alkR-DOWN-F	CGGATCCGAGCTCGGTACCGCGCGGGTGCCTATACG
alkR-DOWN-R	TTACAGCGTAGGGTAGTCGGTATAG
dkgB-UP-F	ATGGCAATCCCCGATTTG
dkgB-UP-R	CTGCAGGTCCACGGAGAATTCATCCAGATCTTGGTGGTGATAAAC
dkgB-FRT-F	GTTTATCACCAAGATCTGGATGAATTCTCCGTGGACCTGCAG
dkgB-FRT-R	CAGTATCACCTGTGCAGGCGGGTACCGAGCTCGGATCCG
dkgB-DOWN-F	CGGATCCGAGCTCGGTACCCCGCTGCACAGGTGATACTG
dkgB-DOWN-R	TTAATCCCACTCGGGGGC
akR2-UP-F	ATGCAATATATACCCCCACAAGC
akR2-UP-R	CTGCAGGTCCACGGAGAATTCCTCGCTGCTGCCTTCGGAG
akR2-FRT-F	CTCCGAAGGCAGCAGCGAGAATTCCTCCGTGGACCTGCAG
akR2-FRT-R	CGTCCGACACCCAACTCCTGGTACCGAGCTCGGATCCG
akR2-DOWN-F	CGGATCCGAGCTCGGTACCGAGGATTGGGTGTCGGACG
akR2-DOWN-R	CTATTTAAATCCGACCACCGG
aldH-UP-F	ATGCGTTATGCTCATCCTGGC
aldH-UP-R	CTGCAGGTCCACGGAGAATTCGGCATCGAGGGCAAATCG
aldH-FRT-F	CGATTTTGCCCTCGATGCCGAATTCTCCGTGGACCTGCAG
aldH-FRT-R	CCCCATGCGATAGGCCAGGTACCGAGCTCGGATCCG
aldH-DOWN-F	CGGATCCGAGCTCGGTACCTGGCCTATCGCATGGGG
aldH-DOWN-R	TAAAAACAGTCCTAACGGCGC
astD-UP-F	ATGAGTCTATGGATTAACGGCGAC
astD-UP-R	CTGCAGGTCCACGGAGAATTCCTTTTCGACGATCGCCTGG
astD-FRT-F	CCAGGCGATCGTCGAAAAGAATTCTCCGTGGACCTGCAG
astD-FRT-R	CAGCGGTTTGTTCAGTTCAGGTACCGAGCTCGGATCCG
astD-DOWN-F	CGGATCCGAGCTCGGTACCTGAACTGGAACAAACCGCTG
astD-DOWN-R	TCATCGGGCCGATCCTTG
28a-AldH-F	CATG <u>CCATGGG</u> CCGTTATGCTCATCCTGGCACC
28a-AldH-R	CCCA <u>AGCTTT</u> CAGTGGTGATGATGGTGATGAAACAGTCCTAACGGCGCG
ACYC-AldH-F	TAAGAAGGAGATATA <u>CATATG</u> CGTTATGCTCATCCTGGCAC
ACYC-AldH-R	GGTTTCTTACCAGACT <u>CGAGT</u> AAAAACAGTCCTAACGGCGCG

Table S2. Primers used for qRT-PCR

Primers	Sequence (5'-3')
RT-16S-F	GAGGAAGGCGATAAGGTTA
RT-16S-R	CACATCCGACTTGACAGA
RT-adhP3-F	ATCATCAGGTCAATGTAA
RT-adhP3-R	GTCTTATCACCAAAATCG
RT-adhP4-F	CTGGGAGTTTATGTTTAC
RT-adhP4-R	GTGGTTTTAATCGTTTTATC
RT-alkR-F	AGTTCCGTCAGAAAGTTC
RT-alkR-R	ATCAGCCCTTGCTAATC
RT-dkgB-F	CATTGCTACCAATCAGAT
RT-dkgB-R	TTCAGTGCCTTACCATAT
RT-akR2-F	CATGGAGTATGTTGACCTG
RT-akR2-R	CTTACCCGCCTTAACCAC
RT-aldH-F	TGGATAACGGTTACTATATTCA
RT-aldH-R	GCTTCCGCTTCATCTTTA
RT-astD-F	GTATTCGGTCCGTACAATT
RT-astD-R	TCAGCTCGCTCGGTTTA

Table S3. Sequences of the target genes for deletion in *R. ornithinolytica* BF60

Gene	Sequence (5'-3')
<i>adhP3</i>	<p>ATGAAAGCTGCGTTGTCACACTCACGATCATCAGGTCAATGTAACGGAAAAACGTCGTCCTCCGCAACATGGCGAAGCGCTGCTG AAAATGGACTGCTGTGGCGTCTGCCACACCGACCTGCACGTCAAAAACGGCGATTTTGGTGATAAGACCGGCGTCATCTCGGACAT GAGGGCGTCGGCGTGGTTCTGCAGGTGGCCCCGGCGTCAATTCGCTGAAACCGGCGATCGGCCAGCGTGGCATGGTTCTTTGA AGGCTGCGGCCACTGTGACTACTGTAACAGCGGAACGAAACGCTCTGCGCTCGGTAAAAACGCGCGCTATACCGTTGACGGCG GCATGGCGGAAGAGTGTATCGTCACCGCAACTATGCGGTAAAAAGTCCCGGATGGCCTCGACTCTGCGGGCCAGCAGCATCACCT GCGCCGGCGTCACAACCTACAAAGCGGTGAAGGTCTCCACGTCAAGCCGGGCCAGTGGATCGCGATTACGCGCTCGGCGGCCTG GGTAATCTGGCGCTGACAGTATGCGAAAAACGCTTCAATGCCAAAGTTATCGCCATCGACGTCAACGACGAGCAGCTGAAGCTGGCC GCAGAGATGGGGCCGACCTGACCATCAACTCCCGCAGCAAGATGCGGGCAAGGTGATTGAGGAGAAGACCGGCGGCGCCCATG CCGCGTGTGTCACCGCGTCCGAAAGGCCGCTTCAACTCCCGCTTGACGCAGTGCAGCGCGGCGGCGCGTGGTGGCCGTTGG CCTGCCCGGGAAGCCATGAGCCTCGACATTCCGCGACTGGTGTGGACGGCATCGAAGTGGTGGTTGCTGGTGGTACCCGTC AGGACCTGATTGAGGCCCTCCAGTTTGTGCGAAGGGAAAGTCGTGCCGAAAGTGACGCTGCGCCCGCTGGGCGATCAACGCC ATCTTTAAAGAGATGGAACAGGGGCGAGATCCGCGCGCGATGGTTATCGACTTCCGCGCTAG</p>
<i>adhP4</i>	<p>ATGAAAGCAATCGCCATTACCCGCGCAGCGGCAAGGCGCAATATCCCCTTTTAAAGCGCCATCGAGCTGCCGTTCTACCGCCG AGGGCCATGACCTGCTGGTTGAGGTAAAGGCCATTTCCGTTAACCCGGTGGACACCAAGGTACGCGCCGATTGATGCCGATACGC CGCGGGTGTGGGCTGGGATGCGGTTGGCAGGTCAAAGCCGTTGGCGATGCGGTACCCCTGTTCCGCGCGGCGATGAGGTCTG GTACGCCGCGCGCTGGGCCCGCGGAAGCAATCAGGAATTCAGCTGGTGACGAACGAATTGTCGCCCTCAAGCTCGCTCGC TGGATAACGCTTCCGCGCGCCCTGCCGCTACCCGCTATTACCGCTGGGAATTGTTATTCGATCGCTGGGCGTCCAGGAGGGCG GCAATACGGGCGACACGCTGCTGATCGTTGGCGCGGCGGCGGCTCGGCTCCATCTGACCCAGCTGGTCCGAGACTGACCGGG ATGACGGTGATCGGGACGCGCTCGCGCCGAGAGCCAGAATGGGTGCTGGACGCGCGCGCATCACGTAATTGACACAGTA AGCCGCTGAGCGAAGAGCTGGCTCGTATCGGAGTGAAGGCAGTGACCCACGTCGCCAGCCTGAACAACCGAACAGCACTATTCCG CAGCTGATTGATGCCCTCGCGCCGAGGGTAAACTGGCGCTGATCGACGATCCGCAAACCTCGACGCGCCGCGCTGAAGGCCAA AAGCATCTCGTGCCTGAGGAGTTTATGTTTACCCGCTCGATGTTTAAACGTCGGATATCATTGCCAGCATCGGCTGCTGACCCGCG TCGCCGCGTGATTGATGATAAACGATTAAAACACGCTCGGCGAACACTACGGCGGATCACCGCGGAGAATCTGCAGAAAGCCC ACGCTCAGCTCGAAACCGGACGCGCGTGGGCAAAATCGTCTGGAGGGGTTTTAA</p>
<i>alkR</i>	<p>ATGTCCAATCAAATGTTTACCCCGTTGAAAGTGGGTGCGGTACCCGTACCTAACCGCGTGTATGCTCCGTTGACCCGCTGC GCAGCATCGAACCCGCGATATCCGACTCCGCTGATGGCCGAGTACTACCGTCAACGCGCCAGCTCCGGGCTGATTATCTCCGAAGC AACGCAGATCTCCGCCAGGCTAAAGGCTATGCCGGCGCCCCGGTCTGCACAGCCCGAACAAATCGCGGCTGGCAGAAAATCA CCGCCGGCTTACGCGGAAGCGGGACATATTGCGGTACAGTGTGGCATAACCGTCTGATCTCACATAATAGCTGCAGCCGGGCG GCGCGCGCCGGTTGCGCGTCCGCAATCAGGCGCGCACCCGTACGTCGCTGCGCGATGAGAACGGCCACCGCTGCGCGCCGAT ACCTCGATGCCGCTGCGTGGAGCTCGATGAGATCCGGGGATCGTCAACGACTTCCGCCAGGCGGTAGCAACGCTCGGACGC CGGCTTCGATCTCGTTGAGCTGCACTCGGCCACGGTACTCTGTCACCAAGTCTAACCAAGCTAGCGATCAAA TACGGCGGACGCTTGAACCGCGCGCCTGGTGTGGAAGTGGTTGATGCGGTGAGTCAAGAGTGGAGCGCGATCGCATCG GTATCCGCTATCGCAATCGGACGCTTCCAGAACGTCGATAACGGCCGAAACGAAGAAGCCGACGCGCTGTATCTGATTGAAGAGC TGGCTAAACGCGGATCGCTACCTGACATGTCGAGCCGGACTGGGCCGGCGCCAGCCGTACAGCGACGAGTTCGCTCAGAAA GTTCCGCGACCGTTCCCGGGTCCATCATCGGCGCGGTGCCTATACGGTTGAAAAGGCTAACGATCTGATTAGCAAAGGCTGATT GACGCGGTGCTTCCGGCCGACTTATCGCAATCCGATCTGTTGCCCGTCTGAAGCACAAGGCGCGCTGAACCCGACGCG CCCGGAGAGCTTACGGCGGCGCGGGAAGGCTATACCGACTACCTACGCTGTAA</p>
<i>dkgB</i>	<p>ATGGCAATCCCGCATTTGGTCTTGGAACTTCCGCTGAAAGATGATGTGGTTATCGCATCGGTAAAAACGGCGTGGAACTGGGCT ACCGTACGATTGATACCGCTCAGATCTATGATAATGAAGCGCCGTTGGCCAGGCCATCGCCGAAAGCGGCGTGGCGCTGATGAGC TGTTTATCACCACCAAGATCTGGATCGAAAACCTGAGCAAAGACTCGCTTATTACCAGTCTGAAAGAGAGCCTGAAAAGCTGCGTAC TGATTATGTGATCTGACGCTGATCCACTGGCCCTCGCCGGTGTGCGCTGCGCGTTGAAAGATTTATGCCGGCGCTGCTGGAAGCT AAAAAGCTGGGGCTGACTCGCAGATCGGAATTTCAAATTCACGATTCCGCTGATGGAACGCGCAATTGCTGCCATCGGCGCTGAA</p>

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aldH

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