

Table S1. Primers used in this study. The guide RNAs (gRNA) for gene deletion are marked in red and the linkers are shown in blue.

| Primers | Sequences | Description |
|------------------------|--|---|
| P1 | CAACCTCCAATCCAATTTGACTCCGCCGAACGT ACTG | For constructing gRNA |
| P2 | ACTACTCTACCACTATTTGAAAAGCAAAAAAG GAAGGTACAAAAAAGC | For constructing gRNA |
| P3- <i>latA</i> | ATGGGCTGTCCGACGCGAAAGACGAGCTTACT CGTTTCG | For constructing gRNA of <i>latA</i> |
| P4- <i>latA</i> | TTTCGCGTCGGACAGCCCATGTTTATAGAGCTA GAAATAGCAAG | For constructing gRNA of <i>latA</i> |
| <i>latA</i> 5' Fw | CCTAATCCGCTATCCCAAC | For amplifying <i>latA</i> 5' flank and identifying correct deletion mutation |
| <i>latA</i> 5' Rv | CGATAGCGAATCCTAGCAGTGGTGACTACGCT AGGGTAG | For amplifying <i>latA</i> 5' flank |
| <i>latA</i> 3' Fw | ACTGCTAGGATTCGCTATCGGCACCTTTCTAAT GACTG | For amplifying <i>latA</i> 3' flank |
| <i>latA</i> 3' Rv | CAGATCACCGTACCAGCG | For amplifying <i>latA</i> 3' flank and identifying correct deletion mutation |
| <i>latA</i> 5' NEST Fw | CTGTACCACCGCTCCAG | For fusion of <i>latA</i> 5' and 3' flanks |
| <i>latA</i> 3' NEST Rv | CTAATTCACAGTCTACATTC | For fusion of <i>latA</i> 5' and 3' flanks |
| P3-NRRL3_05659 | CCGTGCAACTCTTGCTTCTGACGAGCTTACTC GTTTCG | For constructing gRNA of gene NRRL3_05659 |
| P4-NRRL3_05659 | AGGAAGCAAGAGTTGCACGGGTTTATAGAGCT AGAAATAGCAAG | For constructing gRNA of gene NRRL3_05659 |
| NRRL3_05659 5' Fw | CTTTCACCTTCAGTCTATCTGG | For amplifying gene NRRL3_05659 5' flank and identifying correct deletion mutation |
| NRRL3_05659 5' Rv | CGATAGCGAATCCTAGCAGTCCAGGCTTAGGA CGACAG | For amplifying gene NRRL3_05659 5' flank |
| NRRL3_05659 3' Fw | ACTGCTAGGATTCGCTATCGGTCTATGAGCAC TTCAAG | For amplifying gene NRRL3_05659 3' flank |
| NRRL3_05659 3' Rv | GGGATTGTAAGAGTGTGC | For amplifying gene NRRL3_05659 3' flank and identifying correct deletion mutation |
| NRRL3_05659 5' NEST Fw | GGCAAATGCTTACCATCG | For fusion of gene NRRL3_05659 5' and 3' flanks |
| NRRL3_05659 3' NEST Rv | GGGTCTTTTGTAGATAC | For fusion of gene NRRL3_05659 5' and 3' flanks |

Table S2. Composition of wheat bran and sugar beet pulp (mol%).

| | Rha | Ara | Xyl | Man | Gal | Glc | GalUA | Total | polysaccharides |
|-----------------|-----|-------------|-------------|-----|-----|------|-------|-------|-------------------------------|
| Wheat bran | 0.0 | 16.5 | 34.6 | 1.4 | 1.7 | 42.5 | 3.3 | 53.7 | cellulose, arabinoxylan |
| Sugar beet pulp | 1.5 | 29.0 | 2.4 | 2.1 | 6.5 | 32.0 | 27.0 | 56.0 | cellulose, pectin, xyloglucan |

Figure S1. The polyol consumption of the *A. niger* reference strain N593 $\Delta ku70$ and the mutant $\Delta latA$ in the liquid culture containing a mixture of L-arabitol and xylitol as the substrate. The error bars indicate the standard deviation between biological triplicates.

