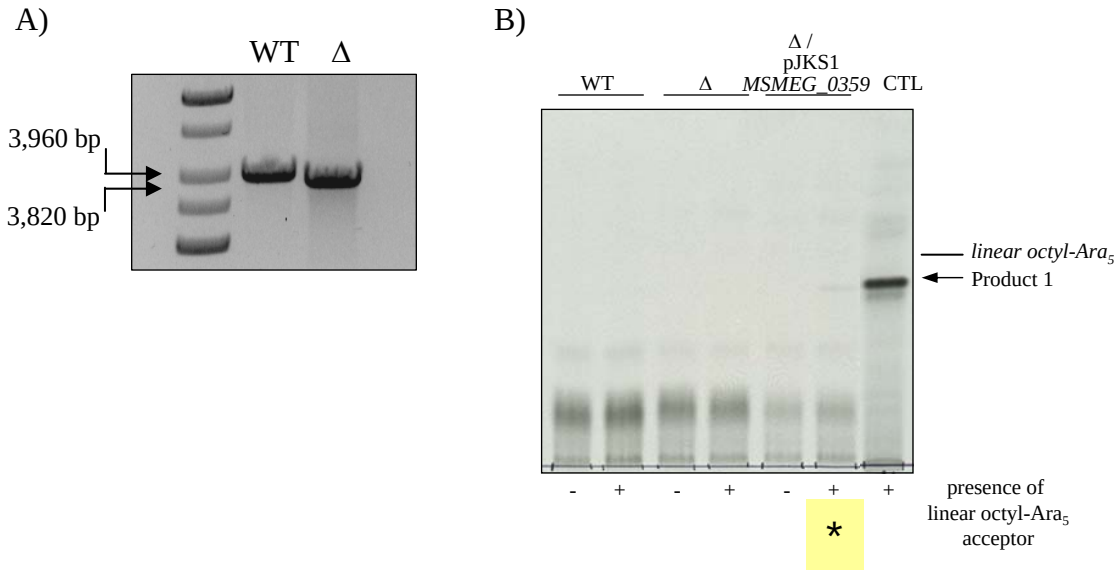
Supplementary Material 1:

A) Allelic replacement at the *aftD* locus of *C. glutamicum*.
Allelic replacement was confirmed by PCR using primers NCgl2757fw and NCgl2757rev (see Materials and Methods). The WT 3,960-bp amplification signal is replaced by a 3,820-bp fragment in the mutant (Δ) due to a 1,340-bp AgeI deletion in the *aftD* gene and insertion of a 1,200 bp- kanamycin resistance cassette.
B) Arabinofuranosyltransferase assays using cell-free extracts from WT *C. glutamicum*, *C. glutamicum* Δ*NCgl2757* and *C. glutamicum* Δ*NCgl2757* expressing *aftD* gene from pJKS1*MSMEG_0359*. The same assays as presented in Fig. 6 were run.
p[^{14}C]Rpp and synthetic linear Ara_5 served as the donor and acceptor substrates, respectively. "+" indicates the presence of acceptor substrate in the reaction mixture; "-" indicates that no synthetic acceptor was added.



Supplementary Material 2: GC/MS analysis of cell walls from *M. smegmatis* WT and the *aftD* single cross-over strain SCO1.
Sugar composition (A) and glycosidic linkage analyses (B) are shown (see Materials and Methods).