S4 Table. LC-MS analysis of SA culture supernatants from wt *S. clavuligerus* and *Δcpe-INF* mutant strains for detecting clavulanic acid and pathway intermediates.

Strain (plasmid)[a]	Metabolite[b,c]						
	Clavaminic acid (*m/z*=223/155)	*N*- acetyl clavaminic acid (*m/z*=265/197)	*N*-glycyl clavaminic acid (*m/z*=280/212)	*N*- acetyl glycyl clavaminic acid (*m/z*=322/254)	*C*-glycyl clavaminic acid (*m/z*=324/256)	Clavaldehyde (*m/z*=222/154)	Clavulanic acid (*m/z*=224/156)
wt	-	-	-	-	-	-	+
Δ*cpe-INF*	-	-	-	-	-	-	-
***Δcpe-INF* (pSET:*cpe*^{Sc})**	-	-	-	-	-	-	+
***Δcpe-INF* (p*SET:cpe*$^{Sc\text{-}Trp91Ala}$)**	-	-	-	-	-	-	+
***Δcpe-INF* (pSET:*cpe*$^{Sc\text{-}Ser173Ala}$)**	-	-	-	-	-	-	-
***Δcpe-INF* (pSET:*cpe*$^{Sc\text{-}Lys176Ala}$)**	-	-	-	-	-	-	-
***Δcpe-INF* (p*SET:cpe*$^{Sc\text{-}Ser234Ala}$)**	-	-	-	-	-	-	-
***Δcpe-INF* (p*SET:cpe*$^{Sc\text{-}Gln321Ala}$)**	-	-	-	-	-	-	+
***Δcpe-INF* (pSET:*cpe*$^{Sc\text{-}Tyr359Ala}$)**	-	-	-	-	-	-	-
***Δcpe-INF* (pSET:*cpe*$^{Sc\text{-}Lys375Ala}$)**	-	-	-	-	-	-	-
***Δcpe-INF*(pHM:*cpe*^{Cl})**	-	-	-	-	-	-	-

[a] Select strains were fermented for 96 hours and culture supernatants were subjected to LC-MS analysis after imidazole derivatization.

[b] Metabolites and respective *m/z* values of corresponding imidazole derivatives/fragmentation products/ions are indicated. Some clavaminic acid derived 5*S* metabolites reported to accumulate in certain *S. clavuligerus* mutant strains were also included in the analysis.

[c] (+) and (-) indicates that ions corresponding the metabolite were either detected or not detected in culture supernatants during analysis, respectively.