Supplementary material

Enhanced antifungal activity of *Bacillus velezensis* R22 against Botrytis cinerea through medium and process optimization

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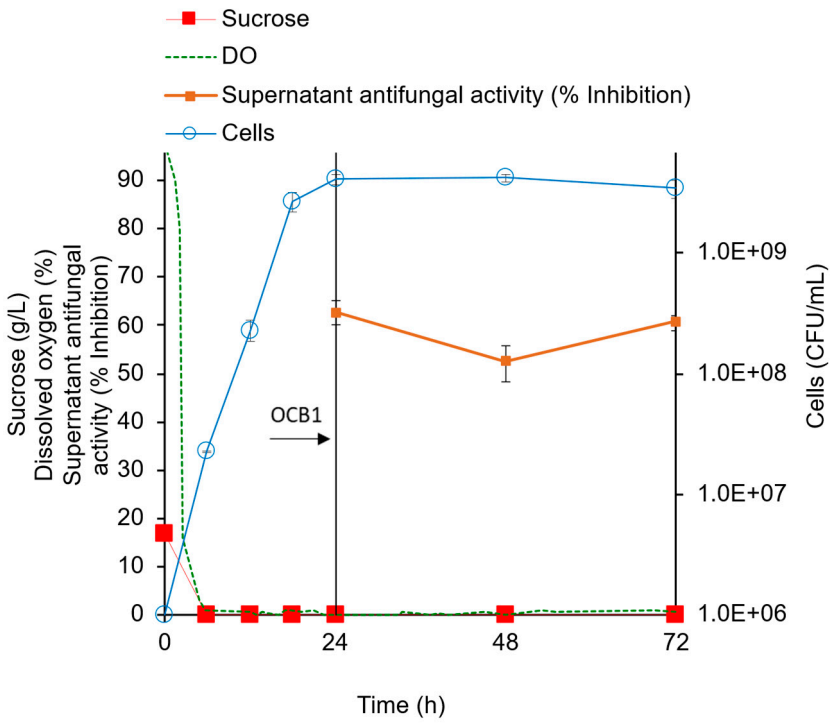


Figure S1. Time course of sucrose consumption, viable cell counts, dissolved oxygen availability, and antifungal activity presented as % inhibition of *B. cinerea* by twice-diluted supernatant during validation experiment for maximum antifungal activity at 24th hour (OCB1).

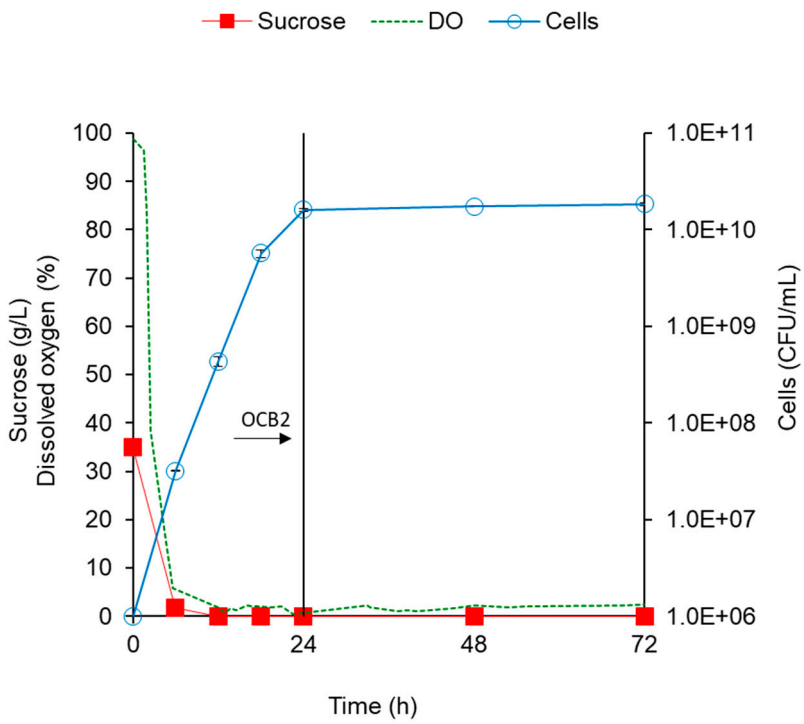
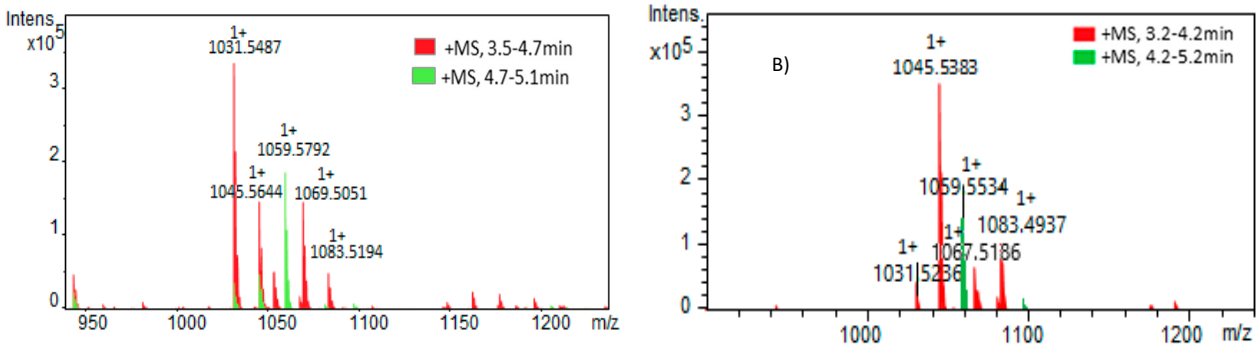


Figure S2. Time course of sucrose consumption, viable cell counts, and dissolved oxygen availability during the validation experiment for maximum cell density at the 24th hour (OCB2).



(a) **(b)**

Figure S3. ESI–MS spectra of bacillomycin D homologs (members of the iturin family) in lipopeptide extracts from *B. velezensis* R22 cultivated in: a) NCB; b) OCB1.

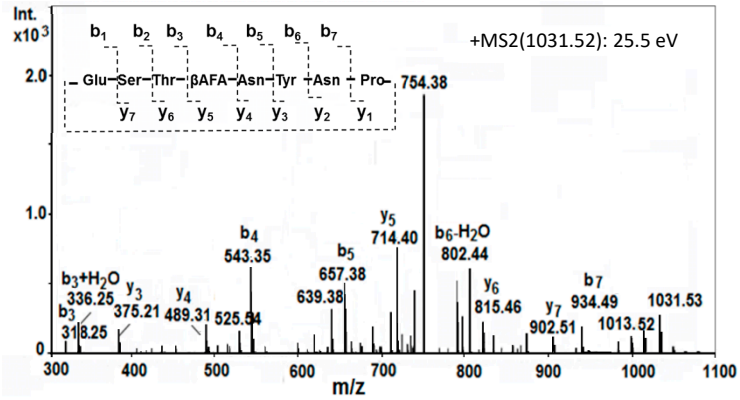


Figure S4. ESI-MS/MS spectrum with interpretation of fragment ions derived from precursor ion $[M+H]^+$ at 1031.55.

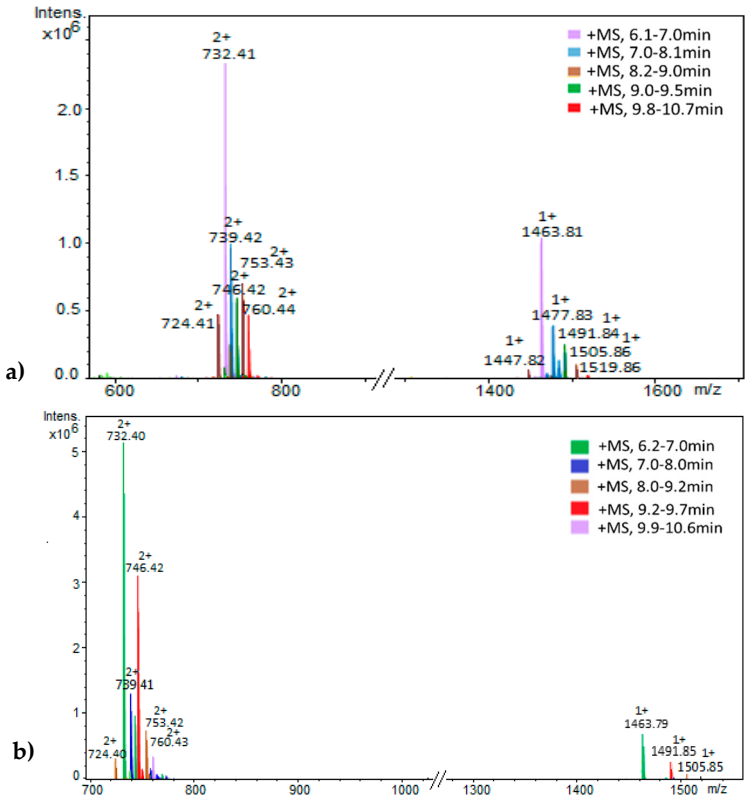


Figure S5. ESI–MS spectra of homologs of fengycin A and fengycin B in lipopeptide extracts from *B. velezensis R22* cultivated in: a) NCB; b) OCB1.

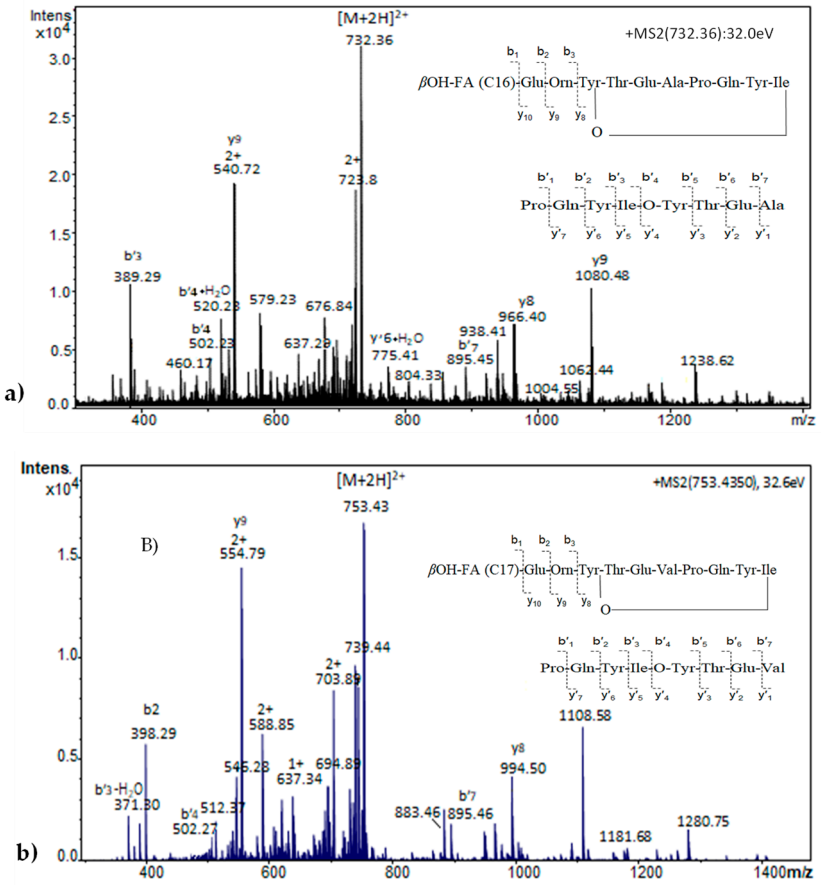
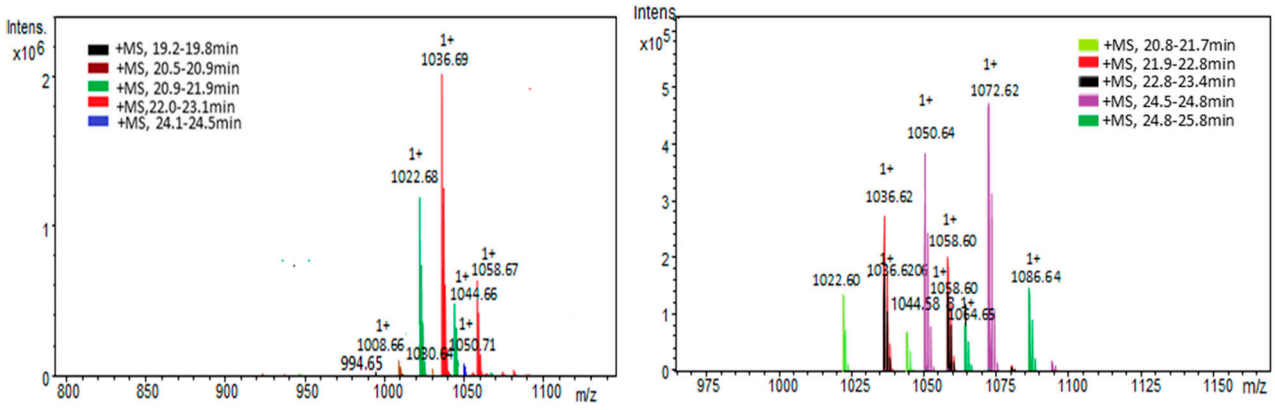


Figure S6. ESI–MS/MS spectra of: (a) precursor ion at m/z 732.36, corresponding to C16 fengycin A containing Ala of position 6 and a C16 β-hydroxy fatty acid chain; (b) precursor ion at m/z 753.435, corresponding to C17 fengycin B with Val of position 6 and a C17 β-hydroxy fatty acid chain.



a) **b)**

Figure S7. ESI–MS spectra of surfactin homologs detected in lipopeptide extracts from *B. velezensis* R22 cultivated in: (a) NCB; (b) OCB1.

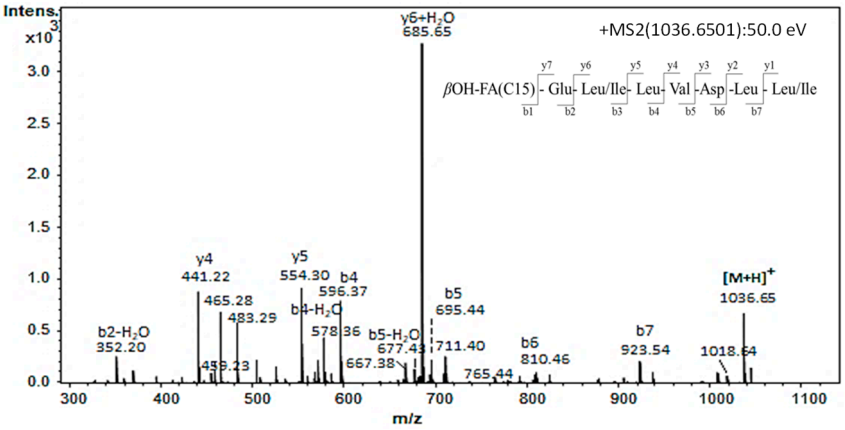


Figure S8. ESI–MS/MS spectrum of the precursor $[M+H]^+$ ion at m/z 1036.65 corresponding to C15 surfactin A containing Leu/Ile at position 7.