Supplementary Information

In vitro efficacy of lipopeptide biosurfactant surfactin-C₁₅ and its complexes with divalent counterions to inhibit *Candida albicans* biofilm and hyphal formation

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Figure S1. Chemical structure of surfactin- C_{15} .



Figure S2. Chemical structure of metal-SF complexes (Janek et al. 2019).



Figure S3. Growth of *C. albicans* SC5314 (A) and *C. albicans* ATCC 10231 (B) strains in the presence of 1 mM (960 μ g/mL) SF and metal(II)-SF complexes, compared to control (100% growth).



Figure S4. Effects of SF and metal(II)-SF complexes on *C. albicans* SC5314 biofilm formation.

All images are shown at the same magnification. Scale bar – 50 $\mu m.$

| Table S1. List of primers used for qRT-PCR exp | periments. |
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| Primer | Sequence (5'-3') |
|--------|---------------------------|
| ACT1-f | GGTTTGGAAGCTGCTGGTATTGACC |
| ACT1-r | ACGTTCAGCAATACCTGGGAACATG |
| ALS1-f | AGCTGTTGCCAGTGCTTC |
| ALS1-r | AATGTGTTGGTTGAAGGTGAG |
| ALS3-f | CAACATCAACCAACCAATCTC |
| ALS3-r | TGAATAACAGAACCAGATCCG |
| ECE1-f | CTTCTTCAAAGACTCCCACAAC |
| ECE1-r | TTCAATACCGACAGTTTCAATG |
| HWP1-f | CAAGTGGTGCTATTACTATTCCG |
| HWP1-r | GCGACACTTGAGTAATTGGC |
| SAP4-f | GGTACCGTTGATTTCCAATTC |
| SAP4-r | ATCTTCACTTTCACGAACACG |

References

Janek T, Rodrigues LR, Gudiña EJ, Czyżnikowska Ż. 2019. Metal-Biosurfactant Complexes Characterization: Binding, Self-Assembly and Interaction with Bovine Serum Albumin. Int J Mol Sci. 20(12):2864.