**LS-8-P-2246 Effects of kojic acid on the cell wall of filamentous fungal Curvularia pallescens**

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*Curvularia pallescens* is an endophytic fungi and melanin producer that occasionally causes a variety of human infections (Figure 1). Currently, there are some studies about antifungi effects of bioproducts which have low toxicity. The hydroxy-2-hydroxymethyl-γ-pyrone (Kojic acid) is a secondary metabolite synthesized by some species of fungi from *Aspergillus*, *Penicillium* and *Acetobacter* genera. The kojic acid has several applications mainly as tyrosinase inhibitor, enzyme that works in biosynthetic pathway for melanin formation in mammalian and fungi cells. Thus, this study evaluated the kojic acid effect in *Curvularia pallescens* morphology cultivated and treated with 50, 100 e 200 μg/ml of kojic acid. The morphological analysis by scanning electron microscopy (Figure 2), performed at Zeiss Leo 1400, transmission electron microscopy (Figure 3), analyzed at Zeiss Leo EM 900 and confocal microscopy (Figure 4), observed at Zeiss LSM 5 Pascal. After incubation, treated cells showed accumulation of many cytoplasmic vesicles like lipid droplets as well external vesicles. In addition, it was showed an accumulation of lipid vesicles in the cytoplasm and cell wall. Furthermore, severe disruption of this wall and subsequent release of these retained vesicles were observed (Figure 3). These results suggested that kojic acid disturbs the structure of the cell wall that could be causing the death of fungus. Further studies are needed to identify the mechanisms that induce these alterations and cell death.

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Fig. 1: Curvularia pallescens growth on GPY medium. (A) forward side of culture plate (B) backward side of culture plate (C) conidiation process.

Fig. 2: Scanning electron microscopy of the Curvularia pallescens. (A) untreated culture; (B, C and D) treated with 50, 100 and 200 µg/mL of KA respectively; Observe intense externalization of vesicles in hyphae (brown) and wilted conidia (green). Scale bars (B-D) 10 µm and (A-C) 15 µm.

Fig. 3: Transmission electron microscopy of Curvularia pallescens using osmium-imidazole method. (A) untreated control; (B, C and D) treated with 50, 100 and 200 µg/mL of KA respectively. Note the presence of lipid bodies (*) and lipid vesicles with strong electrodense stain (arrows). Scale bars: 2 µm.

Fig. 4: Confocal microscopy of Curvularia pallescens incubated with BODIPY®. (A) untreated control; (B, C and D) treated with 50, 100 and 200 µg/mL of KA respectively. Observe the presence of lipid bodies extra and intracytoplasmic, marked in green. Scale bars: 10µm.