

Comparative analyses of stilbene compounds on growth, morphology and gene dysregulation in *S. cerevisiae*

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Antifungal resistance is an emerging threat, exasperated by a lack of knowledge, novel treatments and the misuse of antifungal drugs. Stilbenes may provide relief of antifungal resistance. The stilbene SK-03-92 shows promise as an antifungal due to its effectiveness on fungi while remaining safe in a mouse model. First, I have shown synergistic effects between SK-03-92, curcumin and pterostilbene using spot assays. Like other stilbenes, SK-03-92's exact mechanism is not well understood, and this work is designed to extend what is known about SK-03-92 and compare that to other stilbenes. Second, RNA-seq performed on SK-03-92 treated yeast (*S. cerevisiae*) showed dysregulated genes related to copper homeostasis and the cell cycle, these were confirmed by qPCR. I will be using qPCR to determine if the same genes are dysregulated in yeast cells treated with other stilbenes. Finally, morphological changes were previously characterized by microscopy. These microscopy studies will be repeated to determine if these same morphological changes are observed in yeast treated with other stilbenes. Yeast cells treated with stilbenes will help us understand the mechanism of action of this class of compounds leading to potential treatments for fungi-infected patients, potentially saving lives.