Abstract

In modern healthcare, antimicrobials are used to fight infection against attackers usually of bacterial, fungal, or viral origin. Some microbes develop resistance to antimicrobials due to random genetic mutations; as these mutated cells spread their genetic material to the population, the antimicrobial can be rendered ineffective. To fight antimicrobial resistance, the healthcare community advocates for stewardship of these medications. However, new antimicrobials are also much-needed weapons in the arsenal against antimicrobial resistance. One such novel drug is SK-03-92, a stilbene drug derived from *C. peregrina*, commonly known as the sweet fern. The plant was originally used by indigenous people as a medication to fight pain and infection by bacteria, fungi, and helminths. SK causes rapid cell death in baker's yeast, *Saccharomyces cerevisiae*, but the drug's mechanism of action is unknown. However, previous research has suggested that reactive oxygen species (ROS) are produced during cell death. The objective of our research is to determine the role of ROS and copper cofactors in cell death through application of SK to yeast knockout mutants for proteins involved in processing ROS. Methods for comparison between wildtype and mutant yeast will include spot assays, fluorescent microscopy, and polymerase chain reaction (PCR).