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Summary:

In this study, *Saccharomyces cerevisiae* is used to examine hypothesis that inhibitors of redox active systems would inhibit the growth and viability of *S. cerevisiae*. Ebselen was selected as an inhibitor due its electrophilicity and glutathione peroxidase-like activity, therefore having the capability to disrupt redox-active systems. Mercaptosuccinic acid was also selected due to its inhibition of glutathione peroxidase. The results show that ebselen inhibits both the growth and viability of *S. cerevisiae*, while mercaptosuccinic acid only inhibits the viability of cells. The results also show addition of hydrogen peroxide slightly decreases the viability of *S. cerevisiae*. Growth curves and methylene blue assay were used to investigate the effect of redox inhibitors. A MTT assay was conducted on ebselen to verify the results of the methylene blue assay. This study shows the potential of redox therapies in treating cancer.