RESULTS: The serum total cholesterol and triglycerides were significantly decreased in ambrex treated hyperlipidemic animals when compared to untreated animals. The activities of catalase, superoxide dismutase and reduced glutathione were significantly augmented in the serum, liver, and heart of hyperlipidemic rats treated with ambrex when compared to control. Ambrex treated rats had significant reductions in malondialdehyde levels in the serum, liver and heart compared to untreated rats. In addition, we observed that treatment with ambrex resulted in a major inhibition of pre-adipocyte differentiation of 3T3-L1 cells in vitro by suppression of peroxisome proliferator activated receptor gamma, sterol regulatory binding proteins, tumor necrosis factor-alpha, inducible nitricoxide synthase, leptin, and upregulation of thioredoxin 1 (TRX1) and TRX2 mRNA expression. CONCLUSION: Therefore, ambrex may be a potential drug for treatment of hyperlipidemia and related disorders.

Dutta, S. and M. L. Gupta (2014). "Alleviation of radiation-induced genomic damage in human peripheral blood lymphocytes by active principles of *Podophyllum hexandrum*: An in vitro study using chromosomal and CBMN assay." *Mutagenesis* 29(2):139–147.

This study was aimed to evaluate the protection against radiation of human peripheral blood lymphocytic DNA by a formulation of three isolated active principles of *Podophyllum hexandrum* (G-002M). G-002M in various concentrations was administered 1 hour prior to irradiation in culture media containing blood. Radioprotective efficacy of G-002M to lymphocytic DNA was estimated using various parameters such as dicentrics, micronuclei (MN), nucleoplasmic bridges (NPB) and nuclear buds (NuB) in binucleated cells. Certain experiments to ascertain the G2/M arrest potential of G-002M were also conducted. It was effective in arresting the cells even at half of the concentration of colchicine used. Observations demonstrated a radiation-dose-dependent increase in dicentric chromosomes (DC), acentric fragments, MN, NPB and NuB upto 5Gy. These changes were found significantly decreased by pre-administration of G-002M. A highly significant dose modifying factor (DMF) 1.43 and 1.39 based on dicentric assay and cytokinesis block micronuclei assay, respectively, was observed against 5 Gy exposure in the current experiments. G-002M alone in its effective dose did not induct any change in any of the parameters mentioned above. Observations on cell cycle arrest by G-002M showed that the formulation has potential in arresting cells at G2/M, compared with colchicine. Based on significant DMF at highest radiation dose (5Gy) studied currently and meaningful reduction in radiation-induced chromosomal aberrations, we express that G-002M has a potential of minimizing radiation-induced DNA (cytogenetic) damage.

Enioutina, E. Y. et al. (2017). "Phytotherapy as an alternative to conventional antimicrobials: Combating microbial resistance." *Expert Rev Clin Pharmacol* 10(11):1203–1214.

INTRODUCTION: In the modern antimicrobial era, the rapid spread of resistance to antibiotics and introduction of new and mutating viruses is a global concern. Combating antimicrobial resistant microbes (AMR) requires coordinated international efforts that incorporate new conventional antibiotic development as well as development of alternative drugs with antimicrobial activity, management of existing antimicrobials, and rapid detection of AMR pathogens. Areas covered: This manuscript discusses some conventional strategies to control microbial resistance.