

# Cr(vi) reduction by natural product

[Literature](#), [Russian Literature](#)



Program March Cr(VI) reduction by natural product Chromium, a common element in the earth's crust exist in different oxidations with hexavalent and trivalent chromium being the most significant states. Trivalent chromium has health benefits but the hexavalent, a major component of industrial waste, is considered carcinogenic and a significant percentage of people live under risk of exposure to it. Redox reaction can however convert the hexavalent form to the trivalent form. Strategies that exist for reducing hexavalent chromium cause secondary contamination due to improper use of reducing chemicals and chemical remnants that result in the remediated regions. A new strategy to reducing hexavalent chromium, which is safer and more efficient, is therefore necessary and this study seeks to investigate potential use of ascorbic acid as a better reducing agent for toxic hexavalent chromium. Experiments will be used to collect data on reduction kinetics. Different concentrations of ascorbic acid will be reacted with a controlled solution of hexavalent chromium, at room temperature and changes in hexavalent chromium concentration observed, for each concentration of ascorbic acid, over time. The modified diphenylcarbazone colorimeter method will be used determine concentration of the hexavalent chromium and the project will be completed by June 2015. Regional and national forums will be used for immediate dissemination of research findings while peer reviewed journals will be used for dissemination in the future. The proposed research will improve scientific understanding of hexavalent chromium reduction and reduce environmental effects of the chemical element besides supporting other research interests at GGG CCC science faculty.