

Introduction: Clarithromycin is a macrolide antibiotic that is active against a variety of microorganisms, it is widely used in the local and international market in different pharmaceutical dosage forms. However, its chemical structure lacks a chromophore and hence it has a low absorption and this makes it more difficult to be detected at low concentrations. In this research project we will chemically derivatize clarithromycin and introduce a chromophore to increase its absorptivity and develop a simple reverse phase HPLC analytical method.

Methodology: Chemical derivatization for clarithromycin involved introduction of a chromophore (benzoyl group) through esterification. UV scan was performed on the clarithromycin and derivatized clarithromycin. An analytical HPLC was developed using reverse phase chromatography in order to quantify clarithromycin utilizing the derivatized clarithromycin.

Results: Clarithromycin was successfully derivatized and a hyperchromic and bathochromic UV absorption was achieved. The product UV absorption was increased by four folds compared to the original clarithromycin. A successful chromatographic separation was achieved using a reverse phase HPLC chromatography.

Conclusion and future work: We successfully derivatized clarithromycin into a more detectable derivative under UV due to addition of chromophore. The future work requires validation of the developed method to quantify clarithromycin in biological samples as well as different pharmaceutical dosage forms.