METHOD DEVELOPMENT AND QUANTITATIVE ESTIMATION OF PRUSSAIN BLUE IN BULK DRUG AND RADIOGARDASE-Cs BY UV SPECTROSCOPY

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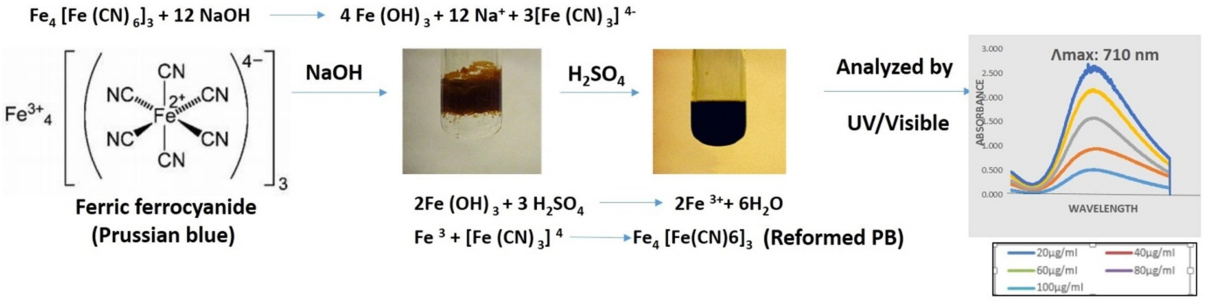

Abstract

Insoluble Prussian blue (PB) is a well established antidote for removal of cesium & thallium and its radioisotopes. Radiogardase-Cs is the only commercially available, capsules formulation of PB. Although PB is an intense blue colored powder but being an insoluble drug, quantitative estimation of PB is a challenge for researchers. Therefore, present research article is focused on the development of a new, simple and sensitive spectrophotometric method for determination of PB in bulk drug samples as well as formulations like Radiogardase. The method is based on two-step dissolution process. PB reacts with dilute base to form iron (III) hydroxide which reforms ferric hexacyanoferrate on reacting with acid. The resulting solution forms nanosuspension of PB which do not aggregate, and remain suspended in the aqueous solution and shows an absorption maxima at 710 nm. The reformed PB was characterized by infrared spectroscopy and particle size distribution analysis. Based on the UV-Visible spectral studies, analytical method for the determination of PB was developed and requisite validation parameters were performed. A linear response was observed in the range of 0.1-100µg/ml with a regression coefficient of 0.9997. The LOD and LOQ were found to be 0.099 and 0.330 µg/mL, respectively.

Keywords: **PB; spectrophotometry; method development; method validation; decorporatingagent**