



Improvements in an Ion-Exchange Chromatography Procedure to Increase Recovery and Biological Activity of Erythropoietin Preparations for Pharmaceutical Use

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SUMMARY. The human erythropoietin (hEpo) is a protein which regulates body red cell mass and one of the most demanded protein for pharmaceutical use worldwide. Regarding to this, as chromatographic operations are an important part in the purification of proteins, this study sought to improve recovery and biological activity of recombinant hEpo (rec-hEpo) preparations, modifying an established ion-exchange chromatography procedure. As conclusions, buffer pH value did not have significant influence on rec-hEpo adsorption efficiency. The best rec-hEpo adsorption condition was achieved at a conductivity of 4 mS/cm, while best elution condition was achieved at a conductivity of 30 mS/cm. The rec-hEpo recovery and biological activity estimated in the ion-exchange chromatography using the modified chromatography procedure were 1.9 and 1.5 fold higher than those estimated in the established chromatography procedure, respectively. Others rec-hEpo biological properties assessed such as sialic acid content and isoform number were also different between both rec-hEpo preparations.

KEY WORDS: Erythropoietin, Ion-exchange chromatography.

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