Manipal Journal of Pharmaceutical Sciences

Volume 5 | Issue 2 Article 6

1-9-2019

Bioanalytical Method Development And Validation For The Simultaneous Estimation Of Zidovudine And Abacavir In Human Plasma By Rp-Hplc

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Research Article

Bioanalytical Method Development And Validation For The Simultaneous Estimation Of Zidovudine And Abacavir In Human Plasma By Rp-Hplc

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Abstract

Highly active antiretroviral therapy is a therapy used for the treatment of a HIV infected patient. To achieve effective concentrations of drug for viral suppression and to avoid drug toxicity, therapeutic drug monitoring is essential. Therefore, the present study was developed using a reverse phase HPLC method for the quantification of zidovudine and abacavir with nevirapine as an internal standard simultaneously in the human plasma. The analytes were extracted by liquid-liquid extraction technique, and the quantification was done by an optimized method consisting of methanol and 10 mM ammonium acetate buffer (pH 5.5) in the ratio of 40:60 % v/v as mobile phase using Genesis C_{18} (100 x 4.6 mm, 5 µm) column. The flow rate was 0.500mLmin and UV detection at 266nm and 287nm was employed. The retention time for zidovudine and abacavir and internal standard (Nevirapine) were 5.34, 9.63 min and 13.46 min, respectively. Linearity for Zidovudine and abacavir was found to be 0.040-2.600µg/ml and 0.075-5.00µg/ml, respectively. The developed method was validated by evaluating the limit of quantitation, accuracy, linearity, precision and stability as per US-FDA guidelines.

Key words: Abacavir, Human plasma, Liquid-Liquid Extraction, Nevirapine, RP-HPLC, Zidovudine

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Date of Submission: 25-June-2019, Date of Revision: 27-July-2019 Date of Acceptance: 27-07-2019

How to cite this article: Praveen, Shetty R, Jagadish PC. Development Of Novel Co-Processed Excipients By Spray Drying Method For The Design Of Fast Dissolving Tablets. *MJPS* 2019; 5(2): 38-46.