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Development and Validation of Spectrophotometric and RP-HPLC Method for Determination of Metoprolol Succinate

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Abstract: In this study, a simple, sensitive and highly accurate ultraviolet spectrophotometric and RP-HPLC method has been developed and validated for determination of metoprolol succinate in bulk and pharmaceutical formulations. The method is based on the measurement of the absorbance of metoprolol succinate solution in 0.1N HCL at 222 nm. Beer's law was obeyed in the concentration range of 2-10µg/ml. The slope, intercept and correlation coefficient were also calculated. For HPLC method validation the analyte was resolved by using a mobile phase [Phosphate buffer: acetonitrile in the ratio of (80:20, v/v)] at a flow rate 1 ml/minute, with a column of Agilent, eclipse XDB-C18, 150 mm× 4.6 mm, 5µm at a wavelength of 223 nm. The linear dynamic range for Metoprolol Succinate was 5ng/ml-100ng/ml. The limit of detection [LOD] and Limit of quantification [LOQ] for Metoprolol Succinate was found to be 25.5 ng.mL-1 and 96.22 ng.mL-1 respectively.
Keywords: Metoprolol succinate, Spectrophotometry, HPLC, linearity, validation.

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