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| **Simultaneous Assessment of Alogliptin Benzoate and Pioglitazone Hydrochloride in Combined Tablet Dosage Form by UV Spectrophotometric Methods**  |
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| Abstract:  | Two simple, sensitive, accurate and precise UV-Spectrophotometric methods are proposed for the assay of alogliptin benzoate and pioglitazone hydrochloride in Bulk and Combined Tablet Dosage Form. The first method (Method A) involves simultaneous equation method, in which absorbance of both the drugs are measured at 224 and 268 nm, whereas in the second method (Method B) which is absorption ratio method, absorbance was measured at two wavelengths, 224 nm which is the?max of alogliptin benzoate and 279 nm i.e. isobestic point of alogliptin benzoate and pioglitazone hydrochloride. For both the methods, alogliptin benzoate and pioglitazone hydrochloride follows Beer’s law in the concentration range of 0.5-12 & 1.8-43.2 µg/ml, respectively. Correlation coefficients were found to be 0.9997 & 0.9998 for alogliptin benzoate and 0.9995 & 0.9999 for pioglitazone hydrochloride at 224 and 268 nm, respectively for Method A. For method B, correlation coefficients were 0.9997 & 0.9999 for alogliptin benzoate and 0.9995 & 0.9999 for pioglitazone hydrochloride at 224 and 279 nm, respectively. The % RSD of repeatability of measurement, intra-day and inter-day precision of the methods were found to be less than 2 for both the method A and B. LOD & LOQ of both the drugs for method A and B was calculated which proved the sensitivity of the method. The accuracy ranged between 97-102 for method A and B. No interference was observed from pharmaceutical excipients used in the formulation. Both methods are simple, sensitive, accurate and precise and have been applied to the simultaneous estimation of alogliptin benzoate and pioglitazone hydrochloride in combined tablet formulation and also suitable for routine quality control applications.  |
| Keyword:  | UV Spectrophotometry, Alogliptin benzoate, Pioglitazone hydrochloride, Tablet dosage form, Simultaneous equation method, Absorbance ratio method  |
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