

## Simultaneous Estimation of Salbutamol and Theophylline in Bulk Drugs and Marketed Formulation using Simultaneous Equation Method

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**Abstract:** Salbutamol and Theophylline used for the treatment of respiratory diseases. A Simple, specific, accurate and precise Ultra-Violet spectroscopy method has been developed and validated for simultaneous determination of Salbutamol and Theophylline in bulk drugs and marketed formulation (tablets). The developed method involves solving of simultaneous equations using 0.1N NaOH as solvent where an absorbance maximum for Salbutamol and Theophylline was found to be at 242nm and 268nm respectively. Both the drugs obeyed Beer's law in the concentration range of 5- 25 µg/ ml & 3-19 µg/ ml. The developed method was validated as per ICH guidelines. The method showed good correlation coefficients ( $r^2$ ) 0.999, indicated good linearity of calibration curve for both the drugs. The recovery of Salbutamol and Theophylline was found to be 100.16% and 98.72% respectively. The developed method was found to be sensitive showing LOD 0.3 µg/ml for Salbutamol and 0.25 µg/ml for Theophylline and LOQ 0.9 µg/ml for Salbutamol and 0.75 µg/ml for Theophylline. The %RSD values for Robustness and Ruggedness was found to be within the acceptable limits indicating the method was robust. The methods were found to be better than previously reported methods because of lack of any extraction procedure, use of cheap solvent, no interferences during method development and time consuming and can be successfully applied for estimation of Salbutamol and Theophylline in Pharmaceutical dosage forms without any interference in Quality control.

**Keywords :** Simultaneous Estimation method, UV spectroscopy, Salbutamol, Theophylline, ICH Guidelines, Method development and Validation.