

**DEVELOPMENT AND VALIDATION OF SPECTROPHOTOMETRIC
SIMULTANEOUS ESTIMATION OF HYDROCHLOROTHIAZIDE
AND SPIRONOLACTONE FROM THE BINARY MIXTURE BY
SIMULTANEOUS EQUATION METHOD.**

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Hydrochlorothiazide is a thiazide diuretic that is useful in the treatment of hypertension and it may be used alone or as an adjunct to other antihypertensive drugs. Spironolactone is a potassium-sparing diuretic that prevents body from absorbing too much salt and keeps potassium levels from getting too low and it can be combined with other diuretics to increase efficacy, most often in combination with a thiazide. The combination of hydrochlorothiazide and spironolactone is used to treat fluid retention (edema) in people with congestive heart failure, cirrhosis of the liver, or a kidney disorder called nephrotic syndrome. This medication also treats high blood pressure (hypertension). The present work deals with the development of a simple, accurate, rapid, reliable and an economical method for the simultaneous estimation of hydrochlorothiazide and spironolactone from a binary mixture by Vierodt's simultaneous equation method. The method involved solving simultaneous equation based on the measurement of absorbance at two wavelengths, 224.5nm and 238nm, which is λ_{\max} of hydrochlorothiazide and spironolactone respectively in methanol. Both the drugs followed Beer's law in concentration range of 1-10 $\mu\text{g}/\text{mL}$. Validity of the method was checked according to official guide line of *British pharmacopoeia* & *United states pharmacopoeia* for the validation of analytical procedure in terms of accuracy (98.83-99.38% for hydrochlorothiazide & 98.58~99.21% for spironolactone), linearity (within 1-10 $\mu\text{g}/\text{mL}$), precision (inter-day & intra-day), and reproducibility (UV model-1240 & UV model-1700). Therefore, the proposed method is suitable and can be adopted for the simultaneous determination of Hydrochlorothiazide and Spironolactone from combined pharmaceutical dosage form in routine quality control analysis.