



## Spectrophotometric Determination of Captopril Through Charge Transfer Complex Formation Using Fractional Factorial and Central Composite Design

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**SUMMARY.** A new spectrophotometric method was developed for the determination of captopril (*n* donor) through charge transfer complex formation with *p*-chloranil ( $\pi$  acceptor). The different experimental parameters that affect the absorbance intensity were carefully studied. Thus, these parameters were optimized using chemometric methods of fractional factorial and central composite design. At the optimum reaction conditions, the rectilinear calibration graphs were obtained in the concentration range  $1.86 \times 10^{-4}$  to  $7.38 \times 10^{-4}$  mol/L captopril with an excellent correlation coefficient ( $r = 0.9996$ ). The proposed procedure could be applied successfully for the determination of the investigated drug in their pharmaceutical dosage forms with a good precision and accuracy compared to official and reported method as revealed by *F*- and *t*-tests at 95 % confidence level. No interference was observed from common excipients in formulations.

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**KEY WORDS:** Captopril, Charge transfer complex, Chemometric methods, Pharmaceuticals formulations.

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