	Zero order	First order	Higuchi
Col.1			
Col.2			
Col.3			

The equation showing r-value very close to unity represents the mode of the *in vitro* release pattern.

In conclusion, with this programme one can rapidly decide about the release kinetic pattern of the selected formulation. The listing of the computer program is available from authors on request.

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Spectrophotometric Determination of Dopamine Hydrochloride

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A simple and sensitive spectrophotometric method for the determination of Dopamine HCl is described. The method involves the formation of a nitroso derivative followed by the formation of an azo red compound with sulphamic acid in the presence of alkali. The method described is precise, accurate and reproducible and is extended to the analysis of an injectionable formulation.

DOPAMINE is a naturally occurring organic amine and its hydrochloride salt is being used in the treatment of acute congestive failure and renal failure.[1] Apart from the fluorometric, HPLC and TLC methods,[2,3] a few spectrophotometric methods have been reported for the determination of dopamine HCl. In the present communication, the development of a visible spectrophotometric method and its application for routine analysis of dopamine hydrochloride injection is described.

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The required quantities of standard and its injection were weighed or measured separately and dissolved in distilled water to get a solution of final concentration of 10 mcg/ml. Aliquots of the standard drug solution representing 5-50 mcg of dopamine hydrochloride, 5 ml each of 1 N HCl and 10% Na NO_2 solution were successively added to a series of 50 ml volumetric flask. The contents of each flask were mixed well. After two minutes, 5 ml of 10% sulphamic acid solution was added and the resultant solution was again mixed and kept for 2 minutes before adding 6 ml of 20% NaOH. The reaction was carried out in an ice cold water bath. The volume of the resulting red coloured solution was made upto 50 ml with distilled water. The absorbance of the solution was measured, after 30 minutes, against a reagent blank at 540 nm, using a Lambda 3B (Perkin Elmer) spectrophotometer.

A calibration curve was plotted between the concentration of the drug and absorbance. Aliquots of sample solutions were also prepared in a similar manner and the exact amount of the drug present in the sample solution was deduced from calibration curve.

Beer's law limits, molar extinction coefficient, Sandell's sensitivity, correlation coefficient, slope and intercept of the regression analysis using least square method, precision and accuracy of the analysis of eight separate samples containing 1/2 of the amount of upper Beer's law limit were summarized in **Table 1.**

Table 1: Optical Characteristics and Precision of Dopamine HCl in the Proposed Method

Optical Character	Value
Beer's law range (mcg / ml)	10-50
Wave length of max. absorbance (max)	540 nm
Molar extinction coefficient (1 $mole^{-1}cm^{-1}$)	4293
Sandell's sensitivity	0.044
Regression equation (A*)	
1. Slope (a)	0.0244
2. Intercept (I)	0.0044
Correlation coefficient	0.99

A = I + aC, where C is concentration in mcg/ml.

The values obtained by the proposed and United States Pharmacopoeal method (HPLC) for the estimation of dopamine hydrochloride in pharmaceutical formulations were compared in **Table 2.**

In order to justify the reliability and suitability of the proposed method, known quantities (40 mg) of pure dopamine hydrochloride were added to one of the pre-analysed dosage form and the mixtures were analysed by the proposed method. The results of

Table 2: Analysis of Pharmaceutical Preparations using proposed and USP method

Formulation	Label Claim per ml	Amount found (mg/ml)		%Recovery*
		Proposed method	USP method	
Injection I	40 mg	40.05	39.74	100.78
Injection II	40 mg	40.15	40.08	100.17
Injection III	40 mg	40.15	40.08	100.29

* 40 mg of Dopamine hydrochloride was added and recovered.

the recovery experiments of the proposed method are between 100.6 to 101.5%.

Dopamine hydrochloride is converted into a nitroso derivative under the specified experimental conditions, and is converted to an azo red compound with the addition of sulphamic acid in presence of alkali. In the proposed method, the azo red dye is quantitatively estimated by a spectrophotometer. An antioxidant, sodium metabisulphate, and sodium chloride that is usually present in the dopamine HCl injection did not interfere in the proposed method. The results indicate that the proposed method is sensitive, accurate, precise and reproducible and can be employed as an alternative to the existing methods.

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Studies on lipids from two medicinal plant seed oils of Vidarbha region

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Physico-chemical characteristics and fatty acid composition of oils, phospholipids and glycolipids of Jatropha curcas and Solanum sisymbrifoliam seeds of Vidarbha region has been investigated. The fatty acid composition, as determined by GLC, revealed the major fatty acids to be palmitic, stearic, oleic and linoleic acids. The fatty acids showed variation quantitatively but not qualitatively.

VIDARBHA region (Maharashtra) is a rich source for plants such as **Jatropha curcas** and **Solanum sisymbrifoliam** which grow wildly. The seeds and oils have pharmaceutical applications in the treatment of skin diseases, paralysis, dropsy, rheumatism and stomach disorders.

Some work on the seed oils from this region earlier has been reported.[1-6] In the present investigation, the physical and chemical characteristics of seed oils such as acid value, iodine value, saponification value and unsaponifiable matter content along with the oil content of the seeds and fatty acid and phospholipid composition of the oils have been studied.

The seeds, collected from nearby forests, were decorticated, powdered and extracted with chloroform-methanol (2:1,v/v) by the method of Folch *et al*[7]. The characteristics were determined by standard procedures.[8,9]

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