



Validated RP –HPLC Method for Determination of Magaldrate and Simethicone in Tablet Dosage Form

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ABSTRACT:

A RP-HPLC method was developed for the estimation of Magaldrate and Simethicone in tablet dosage form which is simple, less time consuming using an economical column. The assay of the sample has been carried out with assay. Percentage of 99.56% and 101.97% Magaldrate and Simethicone respectively. The developed method has been validated for different parameters like, precision, ID precision, Linearity, Accuracy, Robustness, LOD and LOQ and it is simple, specific accurate and economical.

Keywords: Magaldrate, Simethicone.

Introduction

Simethicone decreases the gas bubbles' surface pressure and stops the GI gadget from shaping gas pockets and Magaldrates could be a complex of hydroxyl magnesium aluminate which is promptly changed into Mg(OH)₂ and Al(OH)₃ by gastric acid, which is ineffectively ingested and thus features an enduring effect on stomach settling agent.

Preparation of Standard Solution

Weigh 10 mg of all narcotics reliably and extract in a 100ml volumetric container in 10ml cell stages. The required volume is then calculated.

Diluting 1ml to 10ml with mobile step from the above solution 10 micromethical and magaldrate and simethicone is formed. This method is used for chromatogram imaging.

Calculation

You can measure the sum of Magaldrate and simethicone present in the mixture with the following formula and the above-mentioned findings.

$$\% \text{ Assay} = \frac{\text{AT} \times \text{WS} \times \text{DT} \times \text{P} \times \text{AW}}{\text{WS} \times \text{DT} \times \text{P} \times \text{AW}} \times 100$$

Table -1

Mobile phase	Triethylamine buffer+CAN(50:50)
PH	3.5
Column	Inertsil ODS 3V column,C18(150x4.6 ID) 5µm
Flow rate	1.0 ml/min
Column temperature	Room temperature(20-25°C)
Sample temperature	Room temperature(20-25°C)
Wavelength	227
Injection volume	20 µl
Run time	6 min
Retention time	About 2.483 min for Magaldrate and 3.710 min for Simethicone.

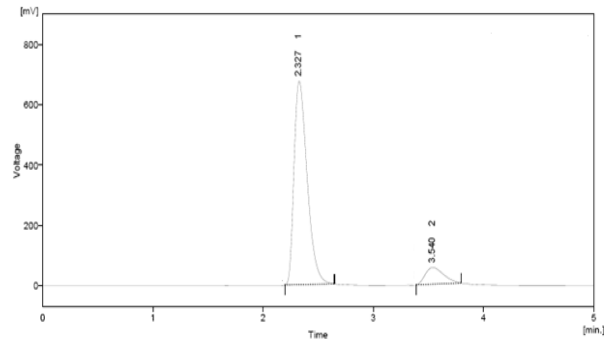
Figures

Fig. 1. Chromatogram of Assay Standard-01

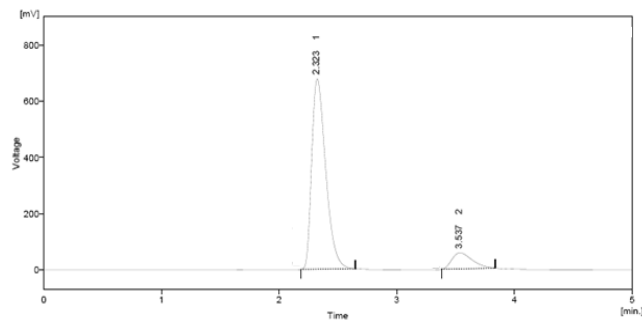


Fig. 2. Chromatogram of Assay Standard-02

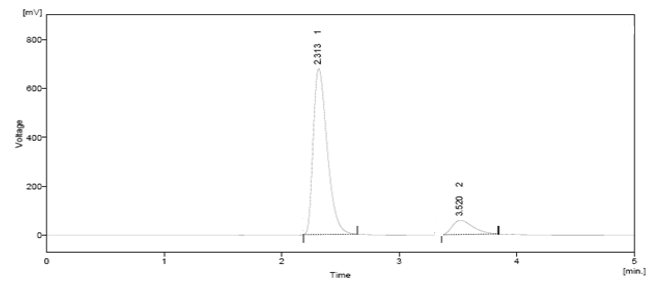


Fig. 3. Chromatogram of Assay Standard-03

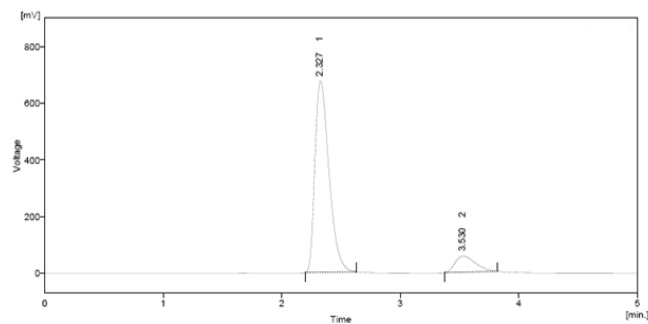


Fig. 4. Chromatogram of Assay Standard-04

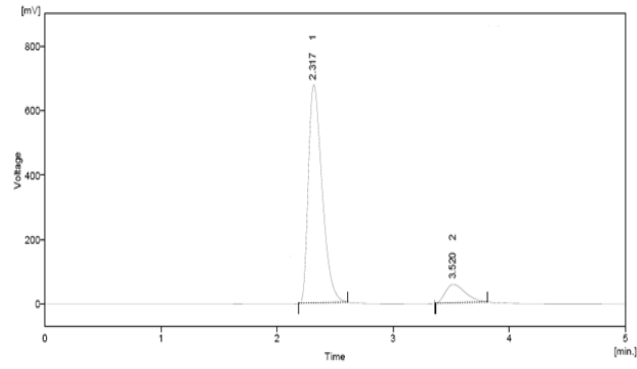


Fig. 5. Chromatogram of Assay Standard-05

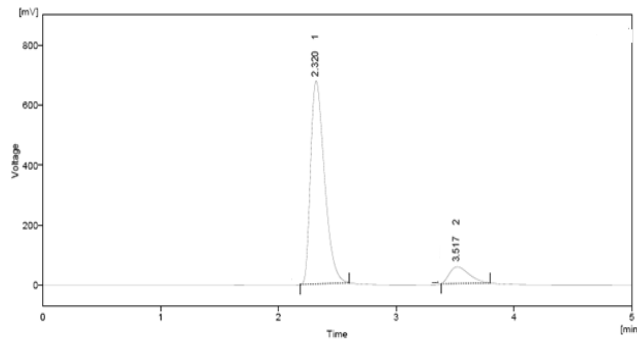


Fig. 1. Chromatogram of Assay Sample-01

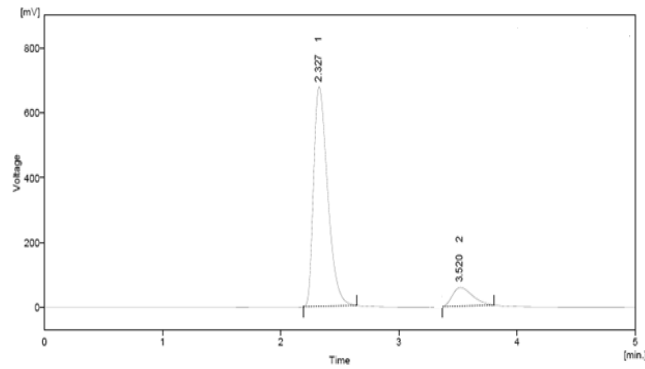


Fig. 2. Chromatogram of Assay Sample-02

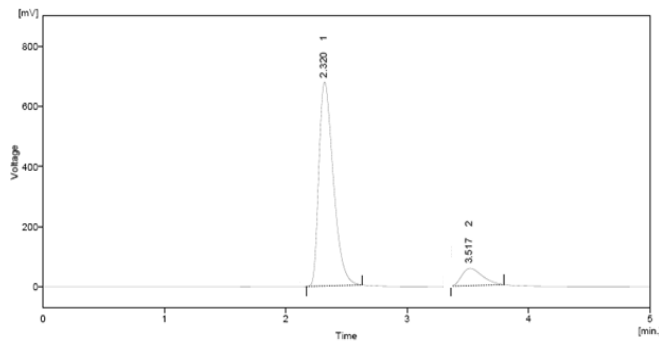


Fig. 3. Chromatogram of Assay Sample-03

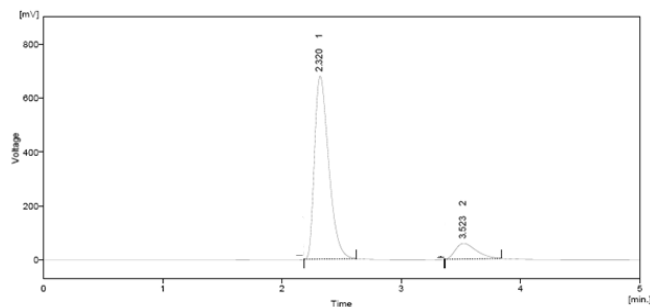


Fig. 4. Chromatogram of Assay Sample-04

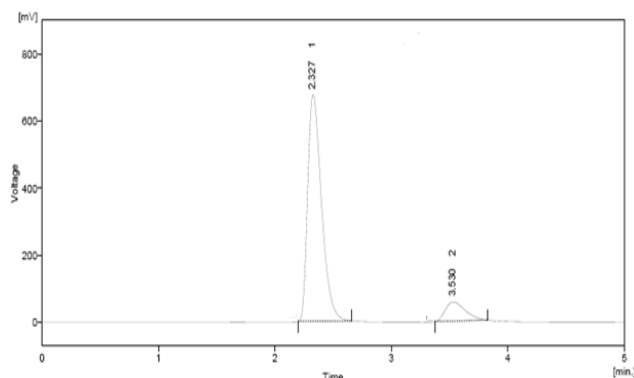


Fig. 5. Chromatogram of Assay Sample-05

Results for magaldrate and simethicone

Magaldrate		Simethicone		
	Standard Area	Sample Area	Standard Area	Sample Area
Injection-1	9610.218	9618.037	929.107	933.278
Injection-2	9596.321	9610.218	898.86	902.356
Injection-3	9610.218	9545.801	909.64	928.769
Injection-4	9596.321	9394.586	898.86	934.043
Injection-5	9578.389	9612.063	891.613	918.958
Average Area	9598.293	9556.141	578.6002	923.4808
Assay(%purity)	99.5608344		101.972668	

Observation:

It was observed that 99.56 percent and 101.97 percent were Magaldrate and Simethicone present in the dosage type.

References

[1] B Madhavi Latha:With certified Magaldrate and Simethicone, both in their purest frame and in tablet measurement frame, a straightforward and dependable invert stage high-performance

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- [2] Firdous Hassanuddin: For approved magaldrate and simethicone in its unadulterated shape and tablet sort a quick and exactness invert stage with high-performance chromatographic fluid strategy
 - [3] Pradeep Kumar Pandey: In arrange to gauge Dicyclomine HCl and Simethicone quantitatively within the pharmaceutical verbal fluid drop definitions, a new, approved and selecting RP-HPLC strategy was created.
 - [4] Krishnasis Chakraborty: This investigate proposes a method for liquid chromatography (RP-HPLC) within the nearness of Metronidazole as an inner standard for calculating most regularly utilized combinations of the ranitidine, domperidone, and magaldrate within the shape of tablets.
 - [5] Boyalapalli Ratna Dayakar: For bulk simethicone estimation and pharmaceutical measurement sort, a straightforward, exact and strong RP-HPLC strategy has been created.
 - [6] Narottam Pal: This inquire about could be a handle creation and approval for concurrent assurance and steadiness testing of the bulk and the combined tablet definition of Dimethicone and Mosapride by invert stage High-performance liquid chromatography with isocratic illustration in which the BDS column (250 mm, 4.6 mm, 5 μ m) was utilized stationary stage, versatile stage buffer (Ortho-phosphoric and Ortho-phosphoric). The PDA wavelength of the PDA finder was measured at 274 nm at the chromatographic gadget pH held at 3.0, stream rate 1.2 ml / miniature.
 - [7] Roshni J. Hedpara :For the assurance of Paracetamol (PCM) and Dicyclomine Hydrochloride (Risky) in its bulk drugs and branded details, a reversed-phase fluid chromatographic strategy (RP-HPLC) has been built up.
 - [8] P. Satyanarayana: An unused RP-HPLC handle for the concurrent ranitidine, Domperidone and Simethicone gauges for bulk and pharmaceutical definitions, which is straightforward, quick, exact and replicable.