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## 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

### 1. 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)<sub>2</sub> and Al(OH)<sub>3</sub> by gastric acid, which is ineffectively ingested and thus features an enduring effect on stomach settling agent.

### 2. 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.

### 3. CALCULATION

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

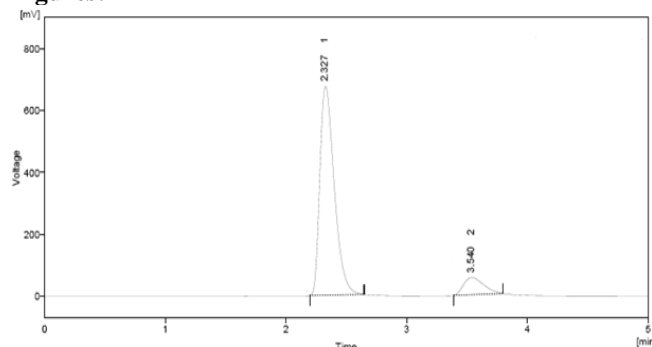
$$\% \text{ Assay} = \frac{AT}{AS} \times \frac{WS}{DS} \times \frac{DT}{WT} \times \frac{P}{100} \times \frac{AW}{LC} \times 100$$

**Table**

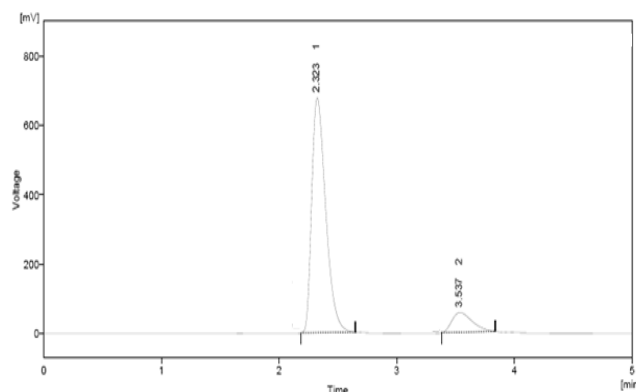
|              |  |
|--------------|--|
| Mobile phase | Triethylamine buffer + CAN (50:50)             |
| PH           | 3.5  |
| Column       | Inertsil ODS 3V column,<br>C18(150x4.6 ID) 5µm |

|                    |   |
|--------------------|---|
| 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**

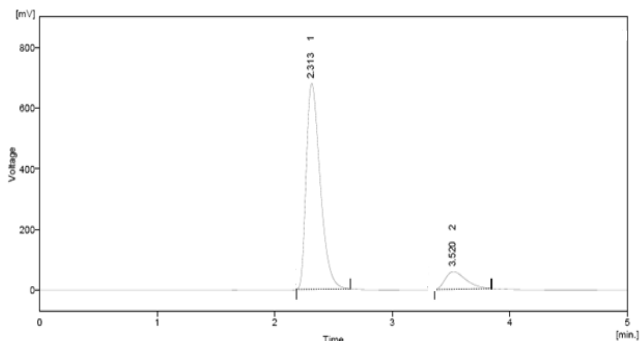


Fig. 3. Chromatogram of Assay Standard-03

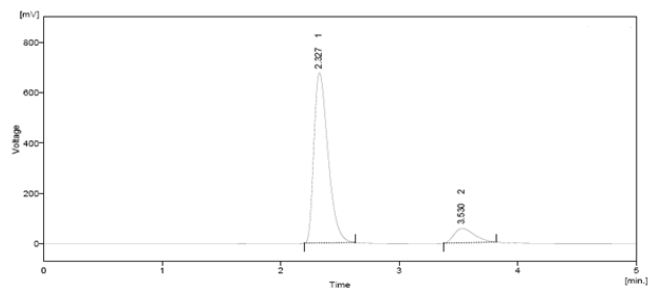


Fig. 4. Chromatogram of Assay Standard-04

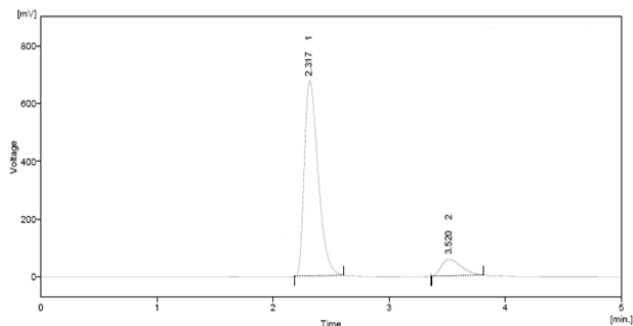


Fig. 5. Chromatogram of Assay Standard-05

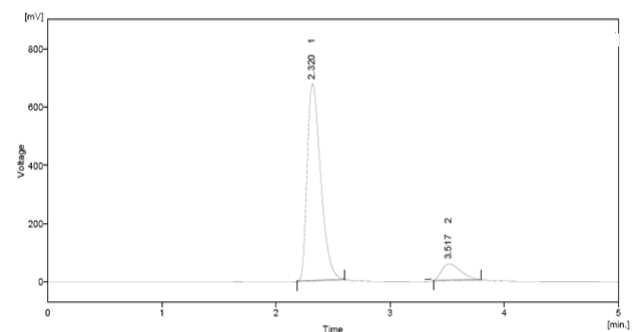


Fig. 6. Chromatogram of Assay Sample-01

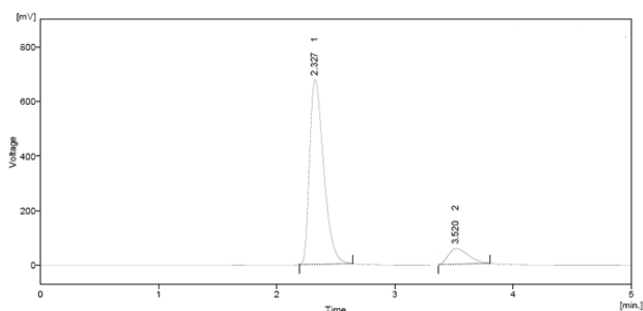


Fig. 7. Chromatogram of Assay Sample-02

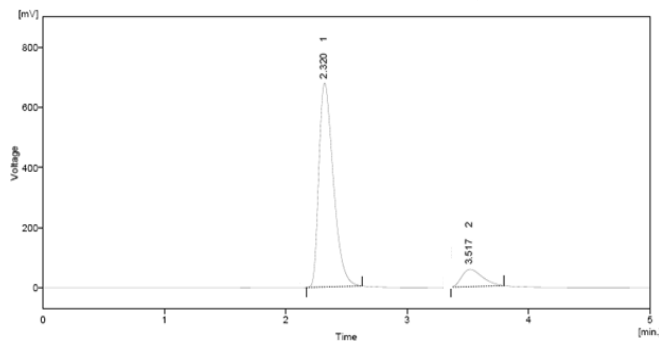


Fig. 8. Chromatogram of Assay Sample-03

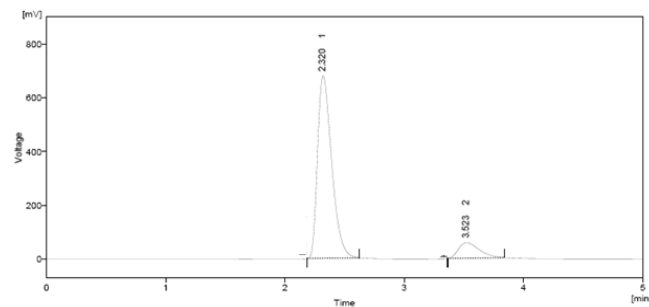


Fig. 9. Chromatogram of Assay Sample-04

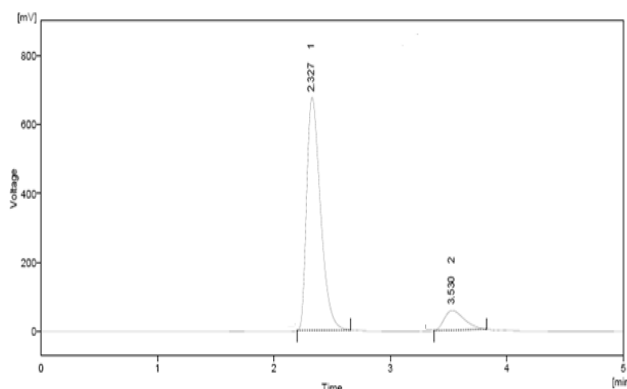


Fig. 10. Chromatogram of Assay Sample-05

4. 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    |             |

5. OBSERVATION

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

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