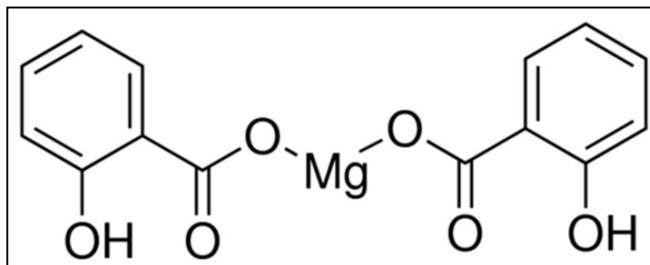


**Magnesium Salicylate**  
**467.2 mg Tablet**

**Structure:**



**Molecular Formula and Mass:** C<sub>14</sub>H<sub>10</sub>MgO<sub>6</sub> – 298.533

**Category:** Analgesic – Nonsteroidal Anti-inflammatory (NSAID)

**Sample:**

Grind one tablet and dissolve in 100 mL of ethanol. Shake at least 10 min and filter. 467 mg/100 mL = 4.67 mg/mL. Further dilute 1.00 mL with an additional 2.00 mL of ethanol, for a total volume of 3.00 mL. Final concentration of sample solution = 4.67 mg/3.00 mL = 1.56 mg/mL, which is the required concentration representing 100%.

**Standards:**

High Standard:

The high limit is 115%; therefore the concentration of the high standard = (1.56 mg/mL X 1.15 = 1.79 mg/mL. Weigh approximately 17.9 mg of standard. If you weighed 18.0 mg of standard, dissolve it in: (18.0 mg)/(1.79 mg/mL) = 10.1 mL of ethanol. This makes the high standard solution concentration equal to 1.79 mg/mL. [If magnesium salicylate standard is not available, salicylic acid standard can be used. Weigh approximately 16.6 mg of salicylic acid standard. If you weighed 16.7 mg of standard, dissolve it in: (16.7 mg)/(1.66 mg/mL) = 10.1 mL of ethanol. This makes the high standard solution concentration to 1.66 mg salicylic acid/mL, which is equivalent to 1.79 mg magnesium salicylate/mL.]

Low Standard:

The low limit is 85%; therefore the concentration of the low standard = (1.56 mg/mL X 0.85 = 1.33 mg/mL. Dilute 1.00 mL of high standard to 1.35 mL by adding 0.35 mL of methanol (1.15/0.85 = 1.35).

**Spotting:**

Spot on the 5 X 10 cm silica gel TLC aluminium plate with 3.00 µL aliquots as follows:

Left spot	low standard (85%) = 3.98 µg
Center Spot	100% sample = 4.68 µg
Right Spot	high standard (115%) = 5.38 µg

**Development:**

Mix 95.0 mL of ethyl acetate and 5.00 mL of glacial acetic acid. Develop the plate in a small glass chamber with approximately 20.0 mL of this solution until the solvent front reaches within 1 cm of the top of the TLC plate. Both magnesium salicylate and salicylic acid migrate with the same R<sub>f</sub> = 0.56.

**Detection:**

UV:

Dry the plate and observe under ultraviolet light at 254 nm. Observe the intensities and the sizes of the spots.

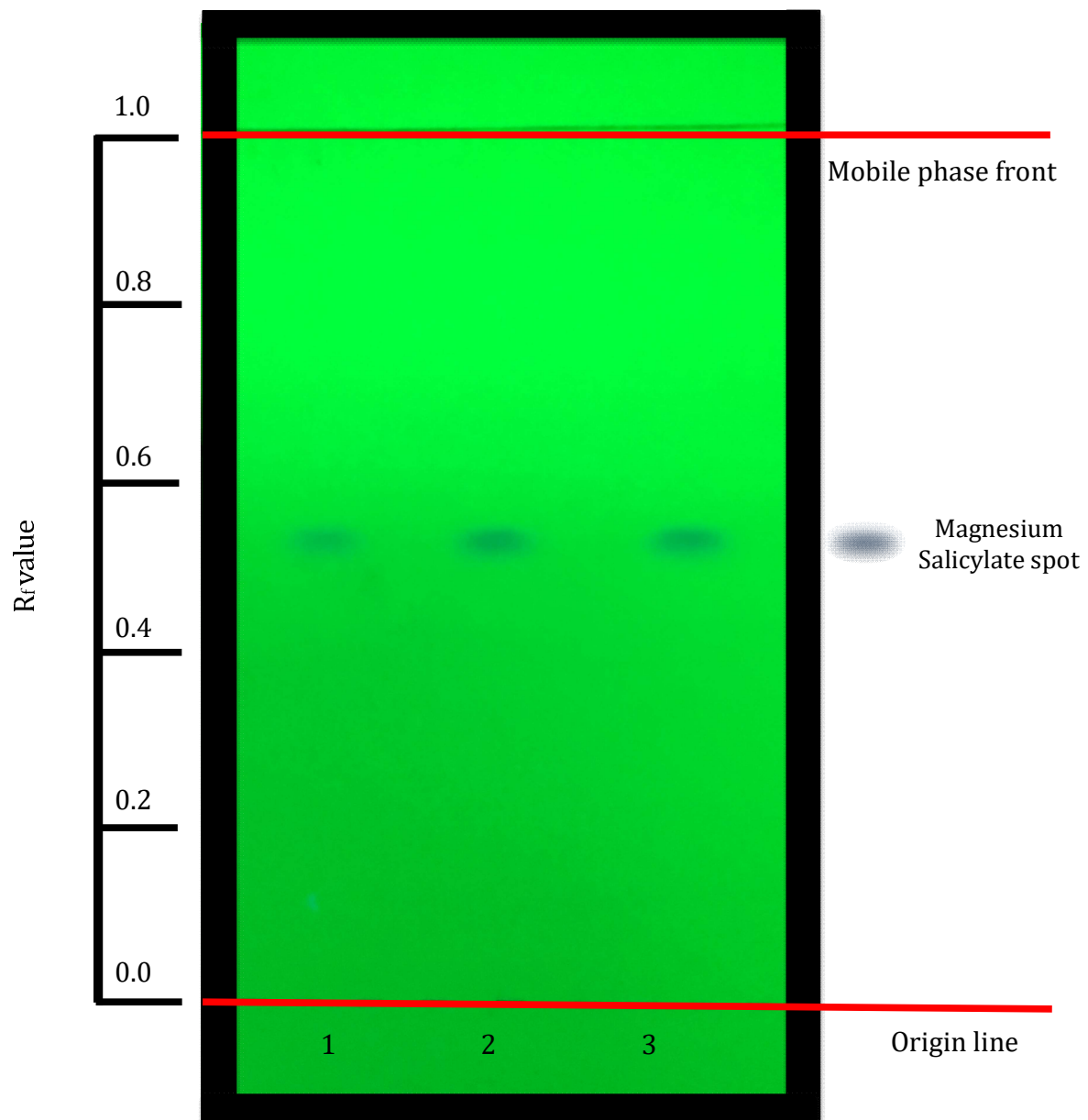


Plate observed under ultraviolet light at 254 nm

Lane 1: Low standard (85%) = 3.98  $\mu\text{g}$

Lane 2: 100% sample = 4.68  $\mu\text{g}$

Lane 3: High standard (115%) = 5.38  $\mu\text{g}$

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