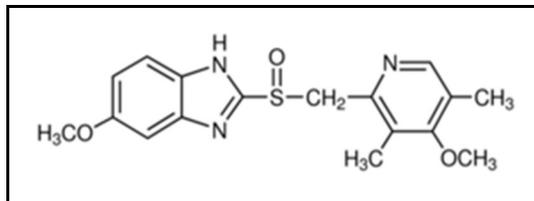


Omeprazole 40 mg capsule

Structure:



Molecular Formula and Mass: C₁₇H₁₉N₃O₃S - 345.42

Category: Proton-pump inhibitor, antimicrobial

Sample:

Dissolve the content of 1 capsule in 120 mL methanol. Shake at least 10 min and filter the solution. Concentration of solution = 40.0 mg/120 mL = 0.333 mg/mL, which is the required concentration representing 100%.

Standards:

High Standard:

The high limit is 115%; therefore the concentration of the high standard = (0.333 mg/mL X 1.15 = 0.383 mg/mL. Weigh approximately 19.1 mg of standard. If you weighed 19.0 mg of standard, dissolve it in: (19.0 mg)/(0.383 mg/mL) = 49.6 mL of methanol. This makes the high standard solution concentration equal to 0.383 mg/mL.

Low Standard:

The low limit is 85%; therefore the concentration of the low standard = (0.333 mg/mL) X 0.85 = 0.283 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 µL aliquots as follows:

Left spot low standard (85%) = 0.850 µg

Center Spot 100% sample = 1.00 µg

Right Spot high standard (115%) = 1.15 µg

Development:

Mix 35.0 mL of toluene, 7.50 mL of acetone, 5.00 mL of methanol with 0.500 mL of concentrated ammonium hydroxide. 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.

(R_f = 0.33)

Detection:

UV:

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

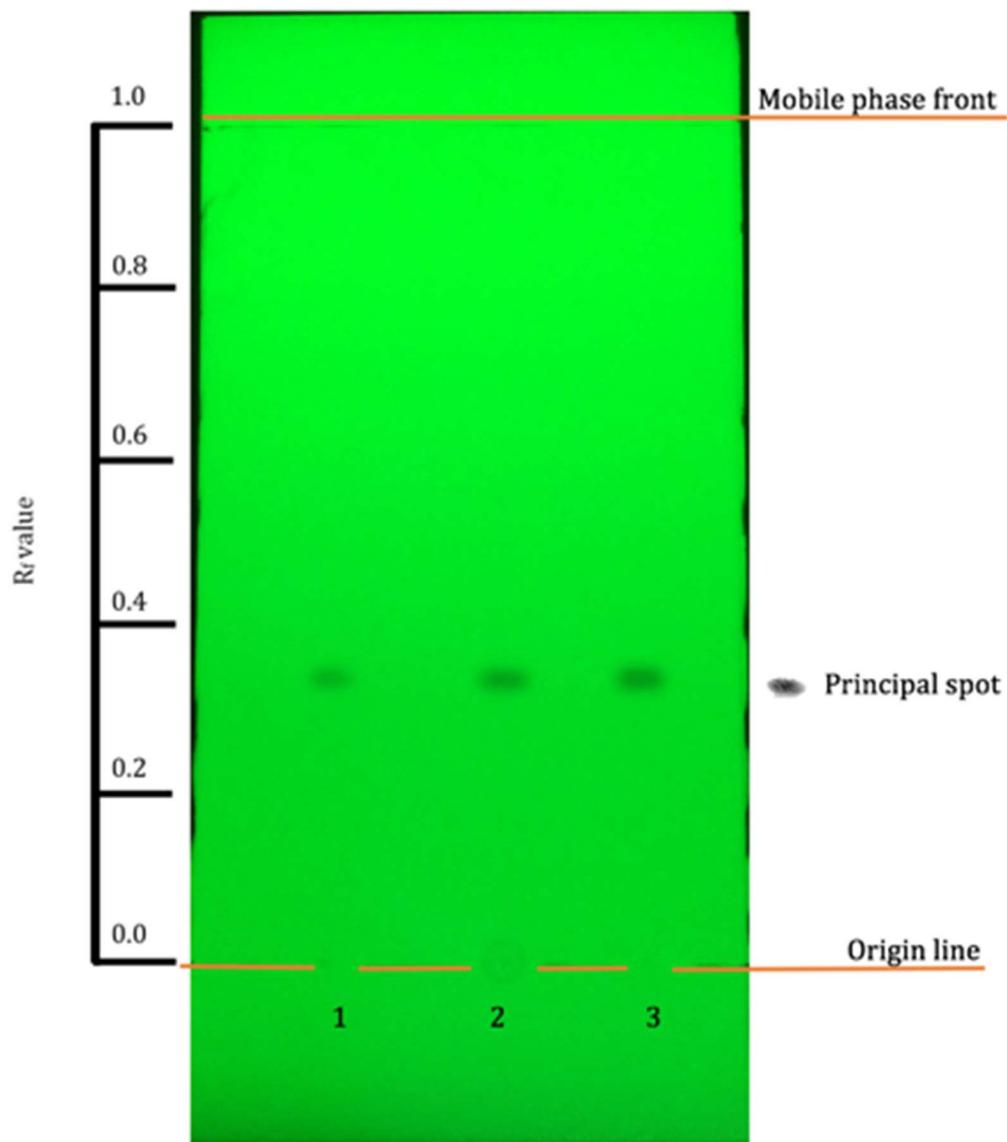


Plate observed under ultraviolet light at 254 nm

Lane 1: Low standard (85%) = 0.850 μg

Lane 2: 100% sample = 1.00 μg

Lane 3: High standard (115%) = 1.15 μg

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