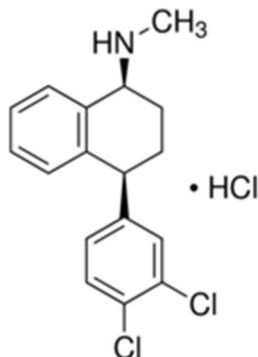


Sertraline HCl
50 mg Tablet

Structure:



Molecular Formula and Mass: C₁₇H₁₈Cl₃N – 342.688

Category: Selective Serotonin Reuptake Inhibitor

Sample:

Grind one tablet and dissolve in 15.0 mL of methanol. Shake for at least 10 min and filter. Final concentration of sample solutions = 3.33 mg/mL, which is the required concentration representing 100%.

Standards:

High Standard:

The high limit is 115%; therefore the concentration of the high standard = 3.33 mg/mL × 1.15 = 3.83 mg/mL. Weigh approximately 38.3 mg of standard and dissolve it in 10.0 mL of methanol. If you weighed 38.2 mg of standard, dissolve it in: 38.2 mg ÷ 3.83 mg/mL = 9.97 mL of methanol. This makes the high standard solution concentration equal to 3.83 mg/mL, which is 115%.

Low Standard:

The low limit is 85%; therefore the concentration of the low standard = 3.33 mg/mL × 0.85 = 2.83 mg/mL. Dilute 1.70 mL of high standard to 2.30 mL by adding 0.60 mL of methanol. This gives a concentration of 3.83 mg/mL × 1.70 mL ÷ 2.30 mL = 2.83 mg/mL, which is 85.0%.

Spotting:

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

Left spot	low standard (85%) = 8.49 µg
Center Spot	100% sample = 9.99 µg
Right Spot	high standard (115%) = 11.5 µg

Development:

Mix 32.0 mL of toluene, 8.00 mL of ethyl acetate, 0.400 mL of ammonia, and 3.60 mL of ethanol. 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 = 0.40)

Detection:

UV:

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

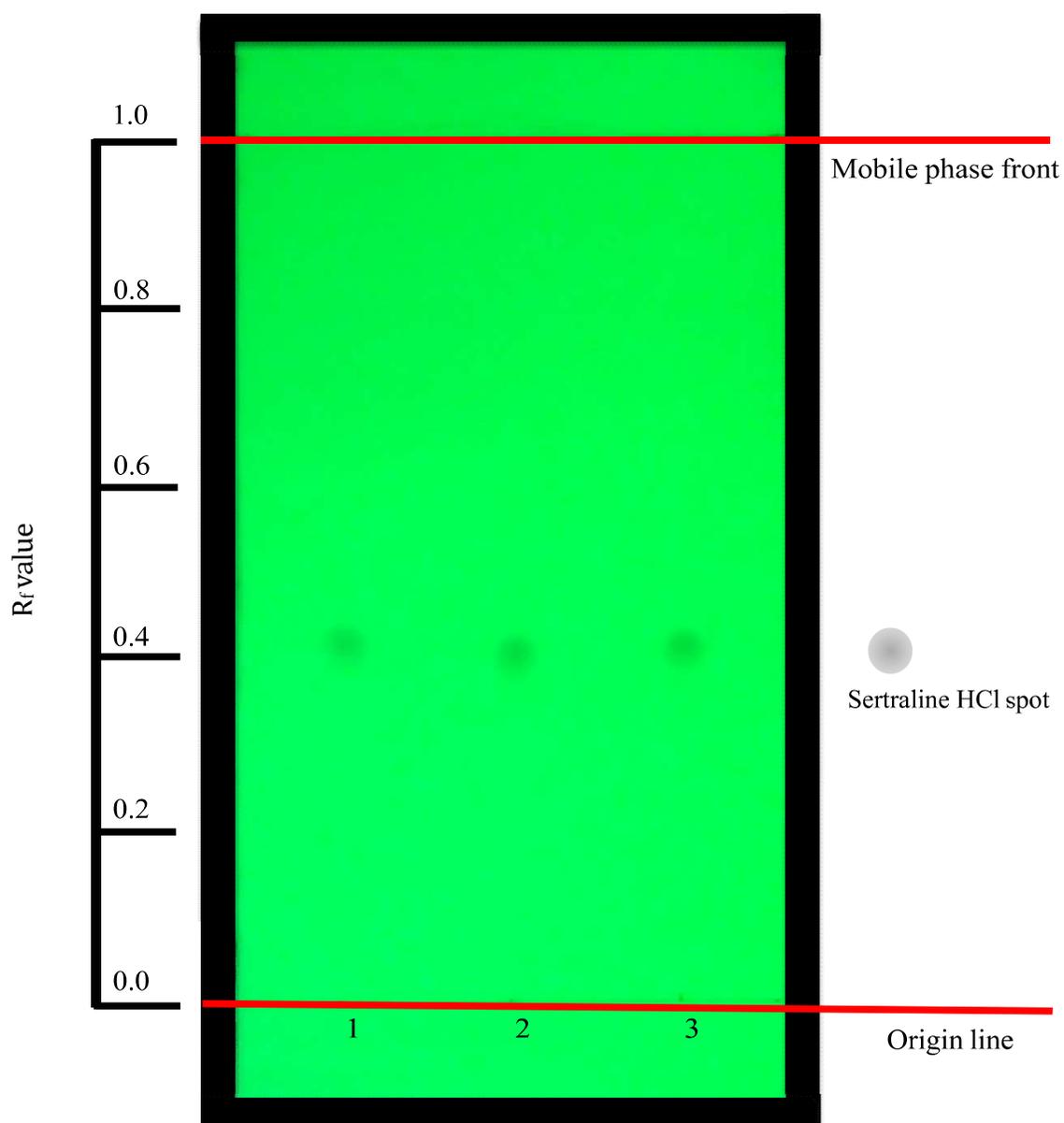


Plate observed under ultraviolet light at 254 nm.

Lane 1: Low standard (85%) = 8.49 μg

Lane 2: 100% sample = 9.99 μg

Lane 3: High standard (115%) = 11.5 μg

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