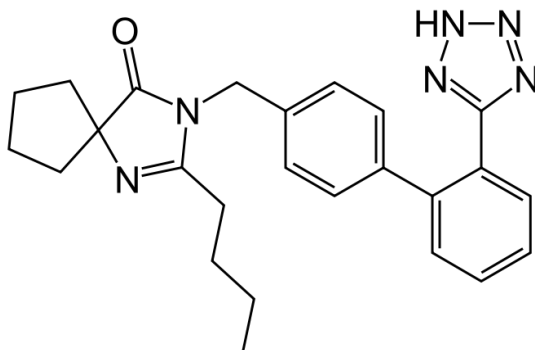


Irbesartan
75 mg Tablet

Structure:



Molecular Formula and Mass: C₂₅H₂₈N₆O – 428.54

Category: Angiotensin II Receptor Blocker

Sample:

Grind one tablet and dissolve in 50.0 mL of methanol. Shake at least 10 min and filter. 75.0 mg/50.0 mL = 1.50 mg/mL. Further dilute 1.00 mL with an additional 2.00 mL of methanol, for a total volume of 3.00 mL. Final concentration of sample solution = 1.50 mg/3.00 mL = 0.500 mg/mL, which is the required concentration representing 100%.

Standards:

High Standard:

The high limit is 115%; therefore the concentration of the high standard = (0.500 mg/mL X 1.15 = 0.575 mg/mL. Weigh approximately 57.5 mg of standard. If you weighed 57.6 mg of standard, dissolve it in: (57.6 mg)/(0.575 mg/mL) = 100 mL of methanol. This makes the high standard solution concentration equal to 0.575 mg/mL.

Low Standard:

The low limit is 85%; therefore the concentration of the low standard = (0.500 mg/mL X 0.85 = 0.426 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%) = 1.28 µg
Center Spot	100% sample = 1.50 µg
Right Spot	high standard (115%) = 1.73 µg

Development:

Mix 18.0 mL of ethyl acetate, 4.00 mL of acetone, and 0.10 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.

(R_f = 0.43)

Detection:

UV:

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

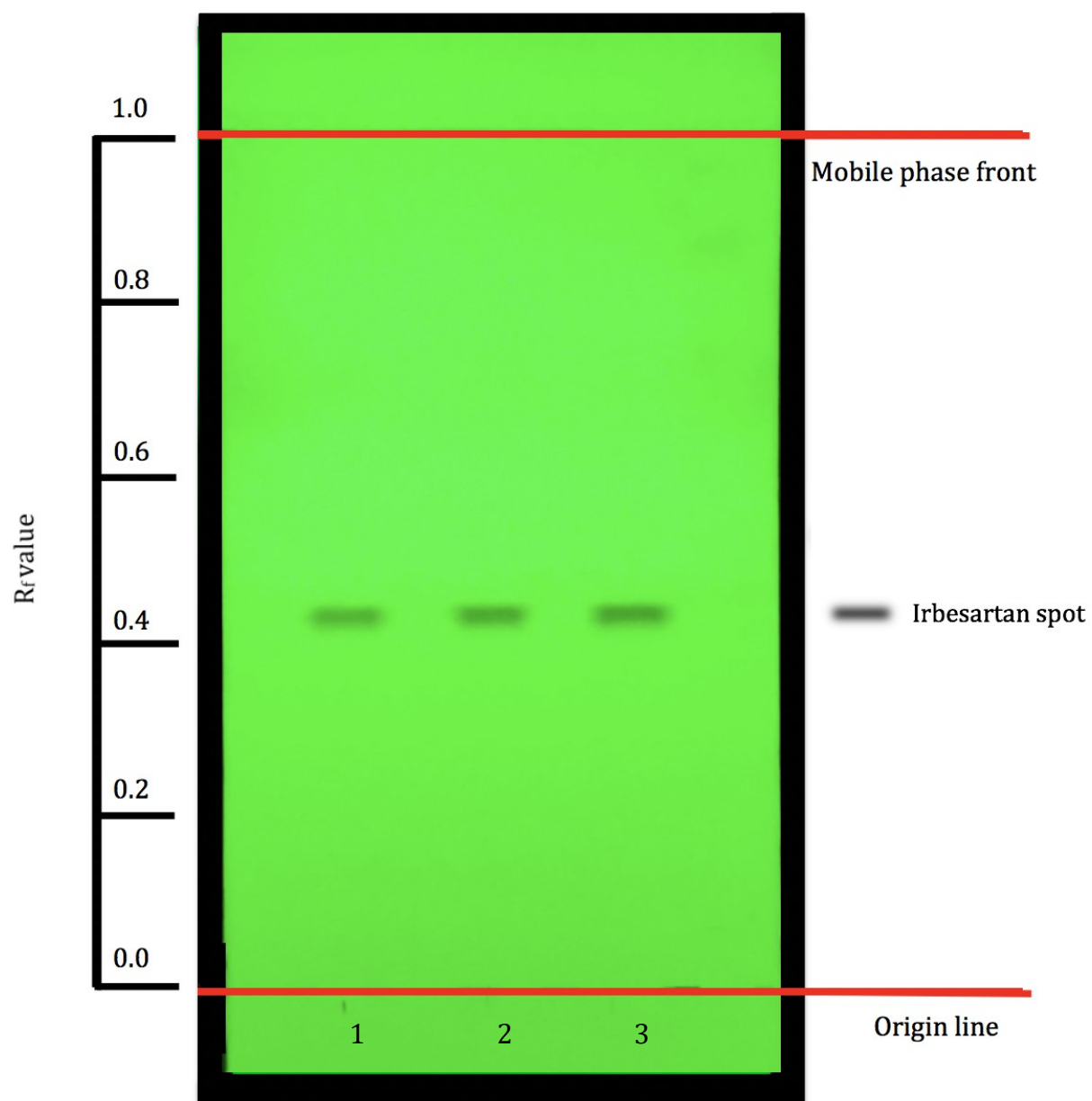


Plate observed under ultraviolet light at 254 nm

Lane 1: Low standard (85%) = 1.28 μg

Lane 2: 100% sample = 1.50 μg

Lane 3: High standard (115%) = 1.73 μg

Developed and tested by Kaitlin Nguyen and Joseph Sherma
Department of Chemistry, Lafayette College, Easton, PA, USA

September, 2018