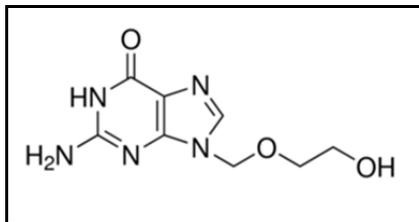


Aciclovir
200 mg Tablet

Structure:



Molecular Formula and Mass: C₈H₁₁N₅O₃ - 225.20

Category: Antiviral

Sample:

Grind 1 tablet and dissolve in 50.00 mL of a mixture of 45.00 mL of absolute ethanol and 5.00 mL of 0.05 M H₂SO₄. Shake at least 5 min. Concentration of solution = 200 mg/50.00 mL = 4.00 mg/mL. Dilute 1.00 mL of the 4.00 mg/mL solution with 19.0 mL of the same solvent to make a final solution equal to 0.200 mg/mL.

Standards:

High Standard:

The high limit is 115%; therefore the concentration of the high standard = (0.200 mg/mL X 1.15 = 0.230 mg/mL. Weigh approximately 11.5 mg of standard. If you weighed 11.3 mg of standard, dissolve it in: (11.3 mg)/(0.230 mg/mL) = 49.1 mL of solvent. This makes the high standard solution concentration equal to 0.230 mg/mL.

Low Standard:

The low limit is 85%; therefore the concentration of the low standard = (0.200 mg/mL) X 0.85 = 0.170 mg/mL. Dilute 1.00 mL of high standard to 1.35 mL by adding 0.35 mL of solvent (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%) = 0.510 µg
Center Spot	100% sample = 0.600 µg
Right Spot	high standard (115%) = 0.690 µg

Development:

Mix 21.00 mL of ethanol and 3.00 mL of concentrated ammonium hydroxide with 6.00 mL of deionized water. Develop the plate in a small glass chamber with approximately 20.00 mL of this solution until the solvent front reaches within 1 cm of the top of the TLC plate. (R_f = 0.63)

Detection:

UV:

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

Developed and tested by Danhui Zhang and Joseph Sherma, Department of Chemistry, Lafayette College, Easton, PA, USA. July 9, 2015.