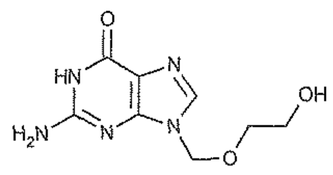
- **LABELING:** When more than one *Dissolution* test is given, the labeling states the test used only if *Test 1* is not used.
- **USP REFERENCE STANDARDS** ⟨11⟩
  USP Acitretin RS

Acyclovir



$C_8H_{11}N_5O_3$ 225.20
6H-Purin-6-one, 2-amino-1,9-dihydro-9-[(2-hydroxyethoxy)methyl]-.
9-[(2-Hydroxyethoxy)methyl]guanine [59277-89-3].

» Acyclovir contains not less than 98.0 percent and not more than 101.0 percent of $C_8H_{11}N_5O_3$, calculated on the anhydrous basis.

Packaging and storage—Preserve in tight containers. Store at room temperature. Protect from light and moisture.

USP Reference standards ⟨11⟩—
USP Acyclovir RS

Identification—

A: *Infrared Absorption* ⟨197K⟩.

B: The retention time of the major peak in the chromatogram of the *Assay preparation* corresponds to that in the chromatogram of the *Standard preparation,* as obtained in the *Assay and limit for guanine.*

Water Determination, *Method I* ⟨921⟩**:** not more than 6.0%.

Ordinary impurities ⟨466⟩—

Test solution: dimethyl sulfoxide.

Standard solution: dimethyl sulfoxide.

Eluant: a mixture of chloroform, methanol, and ammonium hydroxide (80:20:2).

Visualization: 1.

Application volume: 5 µL.

Limit: 1%.

Assay and limit for guanine—

Mobile phase—Prepare a filtered and degassed solution of glacial acetic acid in water (1 in 1000). Make adjustments if necessary (see *System Suitability* under *Chromatography* ⟨621⟩).

System suitability solution 1—Dissolve accurately weighed quantities of USP Acyclovir RS and guanine in 0.1 N sodium hydroxide, and dilute quantitatively, and stepwise if necessary, with water to obtain a solution having known concentrations of about 0.1 mg of each per mL.

System suitability solution 2—Dissolve an accurately weighed quantity of guanine in 0.1 N sodium hydroxide, and dilute quantitatively, and stepwise if necessary, with water to obtain a solution having a known concentration of about 0.7 µg per mL.

Guanine standard preparation—Transfer about 8.75 mg of guanine, accurately weighed, to a 500-mL volumetric flask. Dissolve in 50 mL of 0.1 N sodium hydroxide, dilute with water to volume, and mix. Transfer 2.0 mL of this solution to a 50-mL volumetric flask, dilute with 0.01 N sodium hydroxide to volume, and mix to obtain a solution having a concentration of about 0.7 µg per mL.

Standard preparation—Dissolve about 25 mg of USP Acyclovir RS, accurately weighed, in 5 mL of 0.1 N sodium hydroxide in a 50-mL volumetric flask, dilute with water to volume, and mix. Transfer 10.0 mL of this solution to a 50-mL volumetric flask, dilute with 0.01 N sodium hydroxide to volume, and mix to obtain a solution having a known concentration of about 0.1 mg of USP Acyclovir RS per mL.

Assay preparation—Dissolve about 100 mg of Acyclovir, accurately weighed, in 20 mL of 0.1 N sodium hydroxide in a 200-mL volumetric flask, dilute with water to volume, and mix. Transfer 10.0 mL of this solution to a 50-mL volumetric flask, dilute with 0.01 N sodium hydroxide to volume, and mix.

Chromatographic system (see *Chromatography* ⟨621⟩)—The liquid chromatograph is equipped with a 254-nm detector and a 4.6-mm × 25-cm column that contains packing L1. The flow rate is about 3 mL per minute. Chromatograph *System suitability solution 1,* and record the peak responses as directed for *Procedure:* the resolution, *R,* between acyclovir and guanine is not less than 2.0; the tailing factor for the analyte peak is not more than 2; and the relative standard deviation for replicate injections for the acyclovir peak is not more than 2.0%. Chromatograph *System suitability solution 2,* and record the peak responses as directed for *Procedure:* the relative standard deviation for replicate injections is not more than 2.0%.

Procedure—Separately inject equal volumes (about 20 µL) of the *Standard preparation,* the *Guanine standard preparation,* and the *Assay preparation* into the chromatograph, record the chromatograms, and measure the responses for all the peaks. Calculate the quantity, in µg, of guanine in the portion of Acyclovir taken by the formula:

$$1000C(r_U / r_S)$$

in which *C* is the concentration, in µg per mL, of guanine in the *Guanine standard preparation;* and r_U and r_S are the peak responses due to guanine in the *Assay preparation* and the *Guanine standard preparation,* respectively: not more than 0.7% of guanine is found. Calculate the quantity, in mg, of $C_8H_{11}N_5O_3$ in the portion of Acyclovir taken by the formula:

$$1000C(r_U / r_S)$$

in which *C* is the concentration, in mg per mL, of USP Acyclovir RS in the *Standard preparation;* and r_U and r_S are the peak responses due to acyclovir in the *Assay preparation* and the *Standard preparation,* respectively.

Acyclovir Capsules

DEFINITION
Acyclovir Capsules contain NLT 93.0% and NMT 107.0% of the labeled amount of acyclovir ($C_8H_{11}N_5O_3$).

IDENTIFICATION
- **A.** The retention time of the major peak of the *Sample solution* corresponds to that of the *Standard solution,* as obtained in the *Assay.*

ASSAY
- **PROCEDURE**

Mobile phase: 0.02 M acetic acid

System suitability solution A: 0.1 mg/mL each of USP Acyclovir RS and guanine. Dissolve in 0.1 N sodium hydroxide, and dilute with water.

System suitability solution B: 2.0 µg/mL of guanine. Dissolve in 0.1 N sodium hydroxide, and dilute with water.

Standard solution: 0.1 mg/mL of USP Acyclovir RS. Dissolve in 0.1 N sodium hydroxide, and dilute with water.

Sample solution: Nominally 0.1 mg/mL of acyclovir prepared as follows. Transfer the contents of Capsules equivalent to 10 mg of acyclovir (NLT 10 Capsules) to a