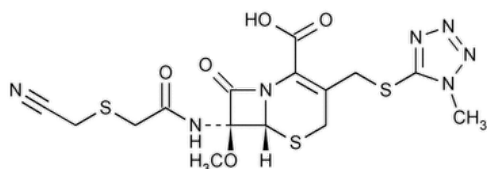


Status: Currently Official on 14-Feb-2025
 Official Date: Official as of 01-May-2020
 Document Type: USP Monographs
 DocId: GUID-A67A86F1-3B80-4CCD-9705-23851DE9A0F4_3_en-US
 DOI: https://doi.org/10.31003/USPNF_M14011_03_01
 DOI Ref: an890

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Cefmetazole



$C_{15}H_{17}N_7O_5S_3$ 471.53

5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(cyanomethyl)thio]acetyl]amino]-7-methoxy-3- [[(1-methyl-1H-tetrazol-5-yl)thio]methyl]-8-oxo-, (6R-cis)-.

(6R,7S)-7-[2-[(Cyanomethyl)thio]acetamido]-7-methoxy- 3-[[[(1-methyl-1H-tetrazol-5-yl)thio]methyl]-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid CAS RN®: 56796-20-4; UNII: 3J962UJT8H.

» Cefmetazole contains not less than 970 µg and not more than 1030 µg of cefmetazole ($C_{15}H_{17}N_7O_5S_3$) per mg, calculated on the anhydrous basis.

Packaging and storage—Preserve in tight containers.

USP REFERENCE STANDARDS (11)—

[USP Cefmetazole RS](#)

Identification—

Change to read:

A: ▲ [Spectroscopic Identification Tests \(197\)](#), [Infrared Spectroscopy: 197M](#) ▲ (CN 1-May-2020) ·

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.

WATER DETERMINATION, Method I (921): not more than 0.5%.

Assay—

Mobile phase—Dissolve 5.75 g of monobasic ammonium phosphate in 700 mL of water, add 3.2 mL of a 40% solution of tetrabutylammonium hydroxide, 280 mL of methanol, and 25 mL of tetrahydrofuran, and mix. Adjust with phosphoric acid to a pH of 4.5 ± 0.1 , pass through a filter having a 0.5-µm or finer porosity, and degas. Make adjustments if necessary (see [System Suitability](#) under [Chromatography \(621\)](#)).

Standard preparation—Quantitatively dissolve an accurately weighed quantity of [USP Cefmetazole RS](#) in *Mobile phase* to obtain a solution having a known concentration of about 200 µg of cefmetazole ($C_{15}H_{17}N_7O_5S_3$) per mL. [NOTE—Use this solution within 10 minutes.]

Resolution solution—Prepare a solution of [USP Cefmetazole RS](#) in 0.01 N sodium hydroxide containing about 1 mg per mL. Heat at 95° for 10 minutes. To 1 mL of this solution add 2 mL of *Standard preparation*, and dilute with *Mobile phase* to obtain 20 mL of solution. This solution contains cefmetazole and cefmetazole lactone (resolution compound).

Assay preparation—Transfer about 20 mg of Cefmetazole, accurately weighed, to a 100-mL volumetric flask, dilute with *Mobile phase* to volume, and mix. [NOTE—Use this solution within 10 minutes.]

Chromatographic system (see [Chromatography \(621\)](#))—The liquid chromatograph is equipped with a 214-nm detector and a 4.6-mm × 25-cm column that contains packing L1. The flow rate is about 2 mL per minute. Chromatograph the *Resolution solution*, and record the peak responses as directed for *Procedure*: the resolution, *R*, between cefmetazole and cefmetazole lactone is not less than 3.0. Chromatograph the *Standard preparation*, and record the peak responses as directed for *Procedure*: the column efficiency is not less than 1250 theoretical plates; the tailing factor is not less than 0.94 and not more than 1.6; and the relative standard deviation for replicate injections is not more than 2.0%.

Procedure—Separately inject equal volumes (about 10 µL) of the *Standard preparation* and the *Assay preparation* into the chromatograph, record the chromatograms, and measure the areas for the major peaks. Calculate the quantity, in µg, of cefmetazole ($C_{15}H_{17}N_7O_5S_3$) in each mg of Cefmetazole taken by the formula:

$$100(C/M)(r_U/r_S)$$

in which *C* is the concentration, in µg per mL, of cefmetazole ($C_{15}H_{17}N_7O_5S_3$) in the *Standard preparation*; *M* is the quantity, in mg, of Cefmetazole taken to prepare the *Assay preparation*; and *r_U* and *r_S* are the cefmetazole peak responses obtained from the *Assay preparation* and the *Standard preparation*, respectively.

Auxiliary Information - Please [check for your question in the FAQs](#) before contacting USP.

Topic/Question	Contact	Expert Committee
CEFMETAZOLE	Documentary Standards Support	SM12020 Small Molecules 1

Chromatographic Database Information: [Chromatographic Database](#)

Most Recently Appeared In:

Pharmacopeial Forum: Volume No. PF 27(2)

Current DocID: GUID-A67A86F1-3B80-4CCD-9705-23851DE9A0F4_3_en-US

DOI: <https://doi.org/10.31003/USPNF.M14011.03.01>

DOI ref: [an890](#)

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