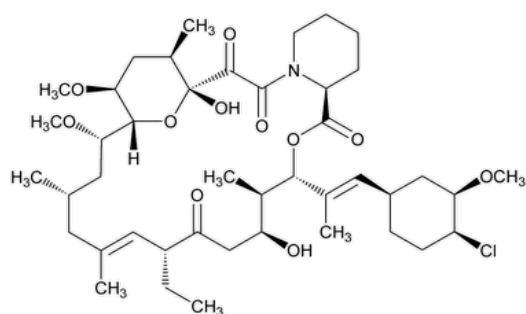


Status: Currently Official on 16-Feb-2025
 Official Date: Official as of 01-Aug-2024
 Document Type: USP Monographs
 DocId: GUID-3438ED90-D288-49F3-83C3-7316EB9AF364_2_en-US
 DOI: https://doi.org/10.31003/USPNF_M1432_02_01
 DOI Ref: 998xq

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Add the following:

▲Pimecrolimus



$C_{43}H_{68}ClNO_{11}$ 810.46

15,19-Epoxy-3*H*-pyrido[2,1-*c*][1,4]oxaazacyclotricosine-1,7,20,21(4*H*,23*H*)-tetrone, 3-[(1*E*)-2-[(1*R*,3*R*,4*S*)-4-chloro-3-methoxycyclohexyl]-1-methylethenyl]-8-ethyl-5,6,8,11,12,13,14,15,16,17,18,19,24,25,26,26a-hexadecahydro-5,19-dihydroxy-14,16-dimethoxy-4,10,12,18-tetramethyl-, (3*S*,4*R*,5*S*,8*R*,9*E*,12*S*,14*S*,15*R*,16*S*,18*R*,19*R*,26a*S*)-; (3*S*,4*R*,5*S*,8*R*,9*E*,12*S*,14*S*,15*R*,16*S*,18*R*,19*R*,26a*S*)-3-[(1*E*)-2-[(1*R*,3*R*,4*S*)-4-Chloro-3-methoxycyclohexyl]-1-methylvinyl]-8-ethyl-5,6,8,11,12,13,14,15,16,17,18,19,24,25,26,26a-hexadecahydro-5,19-epoxy-3*H*-pyrido[2,1-*c*][1,4]oxaazacyclotricosine-1,7,20,21(4*H*,23*H*)-tetrone CAS RN®: 137071-32-0; UNII: 7KYV510875.

DEFINITION

Pimecrolimus contains NLT 98.0% and NMT 102.0% of pimecrolimus ($C_{43}H_{68}ClNO_{11}$), calculated on the anhydrous and solvent-free basis.

IDENTIFICATION

- **A. SPECTROSCOPIC IDENTIFICATION TESTS (197), Infrared Spectroscopy:** 197A or 197K
- **B.** 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

[NOTE—Protect solutions containing pimecrolimus from light and store at 5°. Dissolve quickly with minimum sonication.]

Solution A: 0.1% of [phosphoric acid](#) in [water](#)

Solution B: 0.1% of [phosphoric acid](#) in [methanol](#)

Mobile phase: *Solution A* and *Solution B* (29:71)

Diluent: 0.1% of [formic acid](#) in [acetonitrile](#)

Standard solution: 0.5 mg/mL of [USP Pimecrolimus RS](#) in *Diluent*

Sample solution: 0.5 mg/mL of Pimecrolimus in *Diluent*

Chromatographic system

(See [Chromatography \(621\), System Suitability](#).)

Mode: LC

Detector: UV 210 nm

Column: 4.6-mm × 15-cm; 2.7-μm packing [L1](#)

Temperatures

Autosampler: 5°

Column: 60°

Flow rate: 1 mL/min

Injection volume: 10 μL

Run time: NLT 1.8 times the retention time of pimecrolimus

System suitability**Sample:** *Standard solution*

[NOTE—The relative retention times for pimecrolimus tautomer I and pimecrolimus tautomer II are 0.89 and 0.55, respectively.]

Suitability requirements**Tailing factor:** 0.8–1.5 for pimecrolimus**Relative standard deviation:** NMT 0.73% for pimecrolimus**Analysis****Samples:** *Standard solution* and *Sample solution*Calculate the percentage of pimecrolimus ($C_{43}H_{68}ClNO_{11}$) in the portion of Pimecrolimus taken:

$$\text{Result} = (r_U/r_S) \times (C_S/C_U) \times 100$$

r_U = sum of the peak response of pimecrolimus, pimecrolimus tautomer I (if present), and pimecrolimus tautomer II (if present) from the *Sample solution*

r_S = sum of the peak response of pimecrolimus, pimecrolimus tautomer I (if present), and pimecrolimus tautomer II (if present) from the *Standard solution*

C_S = concentration of [USP Pimecrolimus RS](#) in the *Standard solution* (mg/mL)

C_U = concentration of Pimecrolimus in the *Sample solution* (mg/mL)

Acceptance criteria: 98.0%–102.0% on the anhydrous and solvent-free basis**IMPURITIES**• [RESIDUE ON IGNITION \(281\)](#): NMT 0.1%• **ORGANIC IMPURITIES**

[NOTE—Protect solutions containing pimecrolimus from light and store between 2° and 8°. Avoid sonication while preparing.]

Solution A, Solution B, and Diluent: Prepare as directed in the Assay.**Mobile phase:** See [Table 1](#).**Table 1**

Time (min)	Solution A (%)	Solution B (%)
0	33	67
2	33	67
38	27	73
50	27	73
56	33	67
68	33	67

System suitability solution: 6 mg/mL of [USP Pimecrolimus System Suitability Mixture RS](#) in *Diluent***Standard solution:** 0.006 mg/mL of [USP Pimecrolimus RS](#) in *Diluent***Sample solution:** 6 mg/mL of Pimecrolimus in *Diluent***Chromatographic system**(See [Chromatography \(621\), System Suitability](#).)**Mode:** LC**Detector:** UV 210 nm**Column:** 4.6-mm × 15-cm; 2.7-μm packing [L1](#)**Temperatures****Autosampler:** 5°**Column:** 60°