Status: Currently Official on 16-Feb-2025
Official Date: Official as of 01-Mar-2019
Document Type: USP Monographs
DocId: GUID-A48BA2C4-9F12-44C5-BEEB-7C7468D7F1EB_5_en-US
DOI: https://doi.org/10.31003/USPNF_M70216_05_01
DOI Ref: dl8uy

Propafenone Hydrochloride Tablets

DEFINITION

Propafenone Hydrochloride Tablets contain NLT 90.0% and NMT 110.0% of the labeled amount of propafenone hydrochloride ($C_{21}H_{27}NO_3 \cdot HCl$).

IDENTIFICATION

Change to read:

• **A.** The ▲▲2S *(USP41)* retention time of the major peak of the *Sample solution* corresponds to that of the *Standard solution*, as obtained in the *Assay*.

Add the following:

▲• **B.** The UV spectrum of the major peak of the *Sample solution* corresponds to that of the *Standard solution*, as obtained in the *Assay*.▲2S *(USP41)*

ASSAY

Change to read:

• **Procedure**

Buffer: 0.1 M monobasic potassium phosphate prepared as follows. Dissolve 13.6 g of monobasic potassium phosphate in 900 mL of water, adjust with phosphoric acid to a pH of 3.1, and then dilute with water to 1 L.

Mobile phase: Acetonitrile and *Buffer* (32:68)

Standard solution: 0.15 mg/mL of USP Propafenone Hydrochloride RS in *Mobile phase*

Sample stock solution: Nominally 1.5 mg/mL of propafenone hydrochloride ▲▲2S *(USP41)* in *Mobile phase* prepared as follows. ▲Transfer an appropriate quantity of propafenone hydrochloride from NLT 20 powdered Tablets to a suitable volumetric flask, and▲2S *(USP41)* add *Mobile phase* to ▲▲2S *(USP41)* 90% of the total volume. Sonicate for 10 min. Cool to room temperature, and dilute with *Mobile phase* to volume. Stir for 10 min, pass through a suitable filter of 0.45-µm pore size, and discard the first 5 mL of the filtrate.

Sample solution: Nominally 0.15 mg/mL of propafenone hydrochloride from *Sample stock solution* in *Mobile phase*. Pass through a suitable filter of 0.45-µm pore size, and discard the first 5 mL of the filtrate.

Chromatographic system

(See *Chromatography ⟨621⟩, System Suitability*.)

Mode: LC

Detector: UV 250 nm. ▲For *Identification B*, use a diode array detector in the range of 200–400 nm.▲2S *(USP41)*

Column: 4.6-mm × 15-cm; 5-µm packing L7

Column temperature: 45°

Flow rate: 1.2 mL/min

Injection volume: 20 µL

Run time: NLT 3 times the retention time of the propafenone peak

System suitability

Sample: *Standard solution*

Suitability requirements

Tailing factor: NMT 2.0

Relative standard deviation: NMT 2.0%

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of the labeled amount of propafenone hydrochloride ($C_{21}H_{27}NO_3 \cdot HCl$) in the portion of Tablets taken:

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

r_U = peak response of propafenone from the *Sample solution*

r_S = peak response of propafenone from the *Standard solution*

C_S = concentration of USP Propafenone Hydrochloride RS in the *Standard solution* (mg/mL)

C_U = nominal concentration of propafenone hydrochloride in the *Sample solution* (mg/mL)

Acceptance criteria: 90.0%–110.0%

PERFORMANCE TESTS

• **Dissolution** ⟨711⟩

Medium: 0.1 N hydrochloric acid; 900 mL

Apparatus 2: 75 rpm

Time: 30 min

Standard solution: 0.17 mg/mL of USP Propafenone Hydrochloride RS in 0.1 N hydrochloric acid prepared as follows. To a suitable quantity of USP Propafenone Hydrochloride RS in a suitable volumetric flask, add 0.1 N hydrochloric acid to fill 75% of the total volume. Place the flask in a water bath at 37° with stirring until completely dissolved. Remove the flask from the water bath, cool to room temperature, and dilute with 0.1 N hydrochloric acid to volume.

Sample solution: Pass a portion of the solution under test through a suitable filter of 0.45-µm pore size, and discard the first 5 mL of the filtrate.

Instrumental conditions

Mode: UV

Analytical wavelength: 250 nm

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of the labeled amount of propafenone hydrochloride ($C_{21}H_{27}NO_3 \cdot HCl$) dissolved:

$$\text{Result} = (A_U/A_S) \times (C_S/L) \times V \times 100$$

A_U = absorbance of propafenone from the *Sample solution*

A_S = absorbance of propafenone from the *Standard solution*

C_S = concentration of USP Propafenone Hydrochloride RS in the *Standard solution* (mg/mL)

L = label claim for propafenone hydrochloride (mg/Tablet)

V = volume of *Medium*, 900 mL

Tolerances: NLT 80% (Q) of the labeled amount of propafenone hydrochloride ($C_{21}H_{27}NO_3 \cdot HCl$) is dissolved.

Change to read:

• **Uniformity of Dosage Units** ⟨905⟩**:** Meet the requirements ▲▲2S *(USP41)*

IMPURITIES

Change to read:

• **Organic Impurities**

Solution A: 2.61 g/L of dipotassium hydrogen phosphate in water. Adjust with phosphoric acid to a pH of 2.5.

Solution B: Acetonitrile

Mobile phase: See *Table 1*.

Table 1

Time (min)	Solution A (%)	Solution B (%)
0	71	29

Time (min)	Solution A (%)	Solution B (%)
8	71	29
20	29	71
30	29	71
31	71	29
36	71	29

Diluent: *Solution A* and *Solution B* (65:35)

System suitability solution: 0.1 mg/mL each of USP Propafenone Hydrochloride RS and USP Propafenone Related Compound B RS in *Diluent*

▲**Standard stock solution:** 0.05 mg/mL each of USP Propafenone Hydrochloride RS and USP Propafenone Related Compound B RS in *Diluent*▲2S *(USP41)*

Standard solution: 1 µg/mL each of USP Propafenone Hydrochloride RS and USP Propafenone Related Compound B RS▲from *Standard stock solution*▲2S *(USP41)* in *Diluent*

Sample solution: Nominally 1 mg/mL of propafenone hydrochloride in *Diluent* prepared ▲as follows. Transfer an appropriate quantity of propafenone hydrochloride from NLT 20 powdered Tablets to a suitable volumetric flask, and▲2S *(USP41)* add *Diluent* to ▲▲2S *(USP41)* 90% of the total volume, sonicate for 10 min, and cool to room temperature. Dilute with *Diluent* to volume, and stir for 10 min. Pass through a suitable filter of 0.45-µm pore size.

Chromatographic system

(See *Chromatography ⟨621⟩, System Suitability*.)

Mode: LC

Detector: UV 220 nm

Column: 4.6-mm × 15-cm; 5-µm packing L7

Column temperature: 30°

Flow rate: 1 mL/min

Injection volume: 20 µL

System suitability

Samples: *System suitability solution* and *Standard solution*

▲[NOTE—See *Table 2* for relative retention times.]▲2S *(USP41)*

Suitability requirements

Resolution: NLT 3.0 between propafenone and propafenone related compound B, *System suitability solution*

Tailing factor: NMT 2.0 for the propafenone peak, *Standard solution*

Relative standard deviation: NMT 5.0% for the propafenone ▲and propafenone related compound B peaks,▲2S *(USP41)* *Standard solution*

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of propafenone related compound B in the portion of Tablets taken:

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

r_U = peak response of propafenone related compound B from the *Sample solution*

r_S = peak response of propafenone related compound B from the *Standard solution*

C_S = concentration of USP Propafenone Related Compound B RS in the *Standard solution* (µg/mL)

C_U = nominal concentration of propafenone hydrochloride in the *Sample solution* (µg/mL)

Calculate the percentage of dealkyl propafenone and any ▲unspecified degradation product▲2S *(USP41)* in the portion of Tablets taken:

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

r_U = peak response of dealkyl propafenone or any ▲unspecified degradation product▲2S *(USP41)* from the *Sample solution*

r_S = peak response of propafenone from the *Standard solution*

C_S = concentration of USP Propafenone Hydrochloride RS in the *Standard solution* (µg/mL)

C_U = nominal concentration of propafenone hydrochloride in the *Sample solution* (µg/mL)

Acceptance criteria: See *Table 2*.

Table 2

Name	Relative Retention Time	Acceptance Criteria, NMT (%)
Dealkyl propafenone[a]	0.53	0.1
Propafenone related compound B ▲▲2S *(USP41)*	0.78	0.2
Propafenone	1.00	—
Any ▲unspecified degradation product▲2S *(USP41)*	—	0.2
Total impurities ▲▲2S *(USP41)*	—	0.4

▲ ▲2S *(USP41)*

[a] 2'-(2-Hydroxy-3-aminopropoxy)-3-phenylpropiophenone.

ADDITIONAL REQUIREMENTS

• **Packaging and Storage:** Store at controlled room temperature in tightly closed containers at a relative humidity below 60%.

Change to read:

• **USP Reference Standards** ⟨11⟩

USP Propafenone Hydrochloride RS

USP Propafenone Related Compound B RS

▲(*RS*,*E*)-1-[2-[2-Hydroxy-3-(propylamino)propoxy]phenyl]-3-phenylprop-2-en-1-one.▲2S *(USP41)*

$C_{21}H_{25}NO_3$ 339.43

Auxiliary Information - Please check for your question in the FAQs before contacting USP.

Topic/Question	Contact	Expert Committee
PROPAFENONE HYDROCHLORIDE TABLETS	Documentary Standards Support	SM22020 Small Molecules 2
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SM22020 Small Molecules 2

Chromatographic Database Information: Chromatographic Database

Most Recently Appeared In:
Pharmacopeial Forum: Volume No. PF 43(5)

Current DocID: GUID-A48BA2C4-9F12-44C5-BEEB-7C7468D7F1EB_5_en-US
Previous DocID: GUID-A48BA2C4-9F12-44C5-BEEB-7C7468D7F1EB_2_en-US

DOI: https://doi.org/10.31003/USPNF_M70216_05_01
DOI ref: dl8uy