Add the following:

▲Sertraline Tablets

DEFINITION
Sertraline Tablets contain an amount of sertraline hydrochloride equivalent to NLT 90.0% and NMT 110.0% of the labeled amount of sertraline free base ($C_{17}H_{17}Cl_2N$).

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

ASSAY
• **PROCEDURE**
Mobile phase: Methanol and 0.1% (v/v) phosphoric acid (1:1)
Standard solution: 0.05 mg/mL of USP Sertraline Hydrochloride RS in *Mobile phase*
Sample stock solution: 0.5 mg/mL prepared as follows. Transfer NLT 10 Tablets to a suitable volumetric flask. Dissolve in 0.1% phosphoric acid equivalent to 50% of the volume of the flask. Sonicate for 15 min with intermittent shaking to disperse the Tablets. Add an amount of methanol equivalent to 40% of the volume of the flask, and continue to sonicate for an additional 10 min. Cool the solution, and dilute with methanol to volume.
Sample solution: 0.05 mg/mL in *Mobile phase* from the *Sample stock solution*. Pass a portion of this solution through a nylon filter of 0.45-µm or finer pore size, discard the first few mL, and collect the rest of the filtrate.
Chromatographic system
(See *Chromatography* ⟨621⟩*, System Suitability*.)
Mode: LC
Detector: UV 210 nm
Column: 4.6-mm × 25-cm; 5-µm packing L10
Column temperature: 30°
Flow rate: 1.5 mL/min
Injection size: 10 µL
Run time: Twice the retention time of sertraline
System suitability
Sample: *Standard solution*
Suitability requirements
Tailing factor: NMT 2.0
Relative standard deviation: NMT 1.0%
Analysis
Samples: *Standard solution* and *Sample solution*
Calculate the percentage of sertraline ($C_{17}H_{17}Cl_2N$) in the portion of Tablets taken:

$$\text{Result} = (r_U/r_S) \times (C_S/C_U) \times (M_{r1}/M_{r2}) \times 100$$

r_U = peak response from the *Sample solution*
r_S = peak response from the *Standard solution*
C_S = concentration of USP Sertraline Hydrochloride RS in the *Standard solution* (mg/mL)
C_U = nominal concentration of sertraline in the *Sample solution* (mg/mL)
M_{r1} = molecular weight of sertraline, 306.23
M_{r2} = molecular weight of sertraline hydrochloride, 342.69

Acceptance criteria: 90.0%–110.0% of sertraline free base

PERFORMANCE TESTS

Change to read:

• **DISSOLUTION** ⟨**711**⟩
•**Test 1**● (RB 1-Jun-2011)
Medium: Acetate buffer (3.0 g/L of sodium acetate trihydrate and 1.6 mL/L of glacial acetic acid. Adjust with glacial acetic acid to a pH of 4.5); 900 mL
Apparatus 2: 75 rpm
Time: 30 min
•**Standard stock solution:** 0.56 mg/mL of USP Sertraline Hydrochloride RS in *Medium*. A small volume of methanol, not exceeding 5% of the final volume, may be used to help solubilize sertraline.● (RB 1-Jun-2011)
Standard solution
For Tablets labeled to contain 50 mg, 100 mg, 150 mg, or 200 mg: 0.056 mg/mL in *Medium* from the *Standard stock solution*
For Tablets labeled to contain 25 mg: 0.028 mg/mL in *Medium* from the *Standard stock solution*
Sample solution: Pass a portion of the solution under test through a suitable filter of 0.45-µm pore size. Dilute with *Medium*, if necessary.
Mobile phase: Acetonitrile and 0.1% (v/v) phosphoric acid (1:3)
Chromatographic system
(See *Chromatography* ⟨621⟩*, System Suitability*.)
Mode: LC
Detector: UV 210 nm
Column: 4.6-mm × 25-cm; 5-µm packing L10
Column temperature: 40°
Flow rate: 1.5 mL/min
Injection size: 10 µL for Tablets labeled to contain 50 mg, 100 mg, 150 mg, or 200 mg; 20 µL for Tablets labeled to contain 25 mg
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 sertraline ($C_{17}H_{17}Cl_2N$) dissolved:

$$\text{Result} = (r_U/r_S) \times (C_S/L) \times (M_{r1}/M_{r2}) \times D \times V \times 100$$ ● (RB 1-Jun-2011)

r_U = peak response from the *Sample solution*
r_S = peak response from the *Standard solution*
C_S = concentration of USP Sertraline Hydrochloride RS in the *Standard solution* (mg/mL)
L = label claim • (mg/Tablet)● (RB 1-Jun-2011)
M_{r1} = molecular weight of sertraline, 306.23
M_{r2} = molecular weight of sertraline hydrochloride, 342.69
D = dilution factor for the *Sample solution*
V = volume of *Medium*, 900 mL
Tolerances: NLT 80% (*Q*) of the labeled amount of sertraline ($C_{17}H_{17}Cl_2N$) is dissolved.
•**Test 2:** If the product complies with this test, the labeling indicates that it meets USP *Dissolution Test 2*.
Medium: pH 4.5 acetate buffer (6.8 g/L of sodium acetate trihydrate and 32 mL/L of 2 N acetic acid. Adjust with 2 N acetic acid to a pH of 4.5); 900 mL

Apparatus 2: 75 rpm
Time: 45 min
Standard solution: (*L*/800) mg/mL of USP Sertraline Hydrochloride RS in *Medium,* where *L* is the label claim in mg/Tablet
Sample solution: Pass a portion of the solution under test through a suitable filter of 0.45-µm pore size.
Buffer: 3 mL/L of glacial acetic acid and 7 mL/L of triethylamine in water
Mobile phase: Acetonitrile, methanol, and *Buffer* (10:4:8)
Chromatographic system
(See *Chromatography* ⟨621⟩, *System Suitability*.)
Mode: LC
Detector: UV 273 nm
Column: 3.9-mm × 15-cm; 4-µm packing L1
Column temperature: 30°
Flow rate: 1.0 mL/min
Injection size: 20 µL
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 sertraline ($C_{17}H_{17}Cl_2N$) dissolved:

$$\text{Result} = (r_U/r_S) \times (C_S/L) \times (M_{r1}/M_{r2}) \times D \times V \times 100$$

r_U = peak response from the *Sample solution*
r_S = peak response from the *Standard solution*
C_S = concentration of USP Sertraline Hydrochloride RS in the *Standard solution* (mg/mL)
L = label claim (mg/Tablet)
M_{r1} = molecular weight of sertraline, 306.23
M_{r2} = molecular weight of sertraline hydrochloride, 342.69
D = dilution factor for the *Sample solution*
V = volume of *Medium*, 900 mL

Tolerances: NLT 80% (*Q*) of the labeled amount of sertraline ($C_{17}H_{17}Cl_2N$) is dissolved. ● (RB 1-Jun-2011)

- **Uniformity of Dosage Units** ⟨**905**⟩**:** Meet the requirements

IMPURITIES

- **Organic Impurities**

[Note—Use freshly prepared samples.]
Buffer: 2.72 g/L of monobasic potassium phosphate. Adjust with triethylamine to a pH of 7.0.
Mobile phase: Methanol, acetonitrile, and *Buffer* (6:3:11). Adjust with triethylamine to a pH of 8.0.
System suitability solution: 5 µg/mL of USP Sertraline Hydrochloride Racemic Mixture RS and 0.5 mg/mL of USP Sertraline Hydrochloride RS in *Mobile phase*
Standard solution: 2.5 µg/mL of USP Sertraline Hydrochloride RS in *Mobile phase*
Sample solution: [Note—Sonicate for about 10 min with shaking to disperse the Tablets.] Prepare a solution of 0.5 mg/mL of sertraline in *Mobile phase* from NLT 20 powdered Tablets. Pass a portion of this solution through a nylon filter of 0.45-µm or finer pore size, discard the first few mL, and use the filtrate.
Chromatographic system
(See *Chromatography* ⟨621⟩, *System Suitability*.)
Mode: LC
Detector: UV 210 nm
Column: 4.0-mm × 25-cm; 5-µm packing L45
Flow rate: 0.7 mL/min
Injection size: 20 µL
System suitability
Samples: *System suitability solution* and *Standard solution*
[Note—The relative retention times for the 1*R*,4*R cis*-isomer of sertraline and sertraline are 0.9 and 1.0, respectively.]
Suitability requirements
Resolution: NLT 1.5 between sertraline and the 1*R*, 4*R cis*-isomer of sertraline hydrochloride, *System suitability solution*
Relative standard deviation: NMT 5%, *Standard solution*
Analysis
Samples: *Standard solution* and *Sample solution*
Calculate the percentage of each individual impurity (other than process related) in the portion of Tablets taken:

$$\text{Result} = (r_U/r_S) \times (C_S/C_U) \times (M_{r1}/M_{r2}) \times 100$$

r_U = peak response of each individual impurity from the *Sample solution*
r_S = peak response of sertraline from the *Standard solution*
C_S = concentration of USP Sertraline Hydrochloride RS in the *Standard solution* (mg/mL)
C_U = nominal concentration of sertraline in the *Sample solution* (mg/mL)
M_{r1} = molecular weight of sertraline, 306.23
M_{r2} = molecular weight of sertraline hydrochloride, 342.69

Acceptance criteria
[Note—Disregard any peak below 0.1%.]
Individual impurities: NMT 0.2% of any individual impurity
Total impurities: NMT 2.0%

ADDITIONAL REQUIREMENTS

- **Packaging and Storage:** Preserve in well-closed containers, and store at controlled room temperature.

Add the following:

●• **Labeling:** When more than one *Dissolution* test is given, the labeling states the *Dissolution* test used only if *Test 1* is not used. ● (RB 1-Jun-2011)

- **USP Reference Standards** ⟨**11**⟩
USP Sertraline Hydrochloride RS
USP Sertraline Hydrochloride Racemic Mixture RS
(1*RS*,4*RS*)-4-(3,4-Dichlorophenyl)-*N*-methyl-1,2,3,4-tetrahydro-1-naphthylamine hydrochloride.
$C_{17}H_{17}Cl_2N \cdot HCl$ 342.69 ▲*USP34*