Vasopressin

**DEFINITION**

Vasopressin is a polypeptide hormone having the properties of causing the contraction of vascular and other smooth muscles, and of antidiuresis. It is prepared by chemical synthesis. It contains NLT 95.0% and NMT 102.0% of vasopressin (C₄₆H₆₅N₁₅O₁₂S₂), calculated on the anhydrous, acetic acid-free basis. *(RB 1-Jan-2011)*

**IDENTIFICATION**

- **A.** The retention time of the vasopressin peak of the *Sample solution* corresponds to that of the *Standard solution*, as obtained in the *Assay*.
- **B. MASS SPECTRAL ANALYSIS**
  - **Infusion solution**: Acetonitrile, water, and trifluoroacetic acid (80:20:0.08)
  - **Standard solution**: 1 mg/mL of USP Vasopressin RS in water
  - **Sample solution**: 1 mg/mL of Vasopressin in water
    
    *(NOTE—The final concentrations of the *Standard solution* and the *Sample solution* can be adjusted, depending on the sensitivity of the mass spectrometer used in the testing.)*

**Instrumental conditions**

*(See Mass Spectrometry (736).)*

- **Mode**: LC/MS spectrometer
- **Interface/detection**: Infusion system connected to an electrospray interface (positive ion)
- **Flow rate**: 0.3 mL/min
- **Injection size**: 10 µL

**Analysis**

- **Samples**: *Standard solution* and *Sample solution*
- **Acceptance criteria**: Should contain peaks with mass-to-charge ratios of 1084 and 1043

**ASSAY**

- **Procedure**
  - **Mobile phase**: Dissolve 6.6 g of dibasic ammonium phosphate in 950 mL of water, and adjust with concentrated phosphoric acid to a pH of 3.0. Dilute with water to 1000 mL. To 870 mL of this solution add 130 mL of acetonitrile, and mix. Filter under vacuum through a 0.45-µm nylon membrane. *(NOTE—The retention time of the vasopressin peak is very sensitive to small changes in acetonitrile concentration in the Mobile phase.)*
  - **System suitability solution**: Dissolve suitable quantities of USP Lypressin RS and USP Vasopressin RS in 0.25% glacial acetic acid to obtain a solution having a known concentration of about 25 µg of each substance in each mL.
  - **Standard solution**: Dissolve the entire contents of a vial of USP Vasopressin RS in a known volume of 0.25% glacial acetic acid. *(NOTE—The solution may be diluted as necessary to a working concentration range for the assay.)*

**SPECIFIC TESTS**

- **Microbial Enumeration Tests (61) and Tests for Specific Microorganisms (62)**: The total bacterial count is NMT 200 cfu/g. For products of animal origin, it also meets the requirements of the tests for absence of *Salmonella* species and *Escherichia coli*.
- **Water Determination, Method Ic (921)**: NMT 8.0%
- **Acetic Acid in Peptides (503)**: NMT 15.0%

**ADDITIONAL REQUIREMENTS**

- **Packaging and Storage**: Preserve in tight containers, preferably of Type I glass, in a refrigerator.
- **USP Reference Standards (11)**
  - USP Lypressin RS
  - USP Oxytocin RS
  - USP Vasopressin RS