

# RVV-X

**Description:** Specific factor X activator from Russell's viper venom. RVV-X is a dimer of two peptide chains with a molecular weight of 60'000 g/mol each. Activation of factor X by RVV-X strictly depends on the presence of calcium ions.

**Application:** RVV-X is used in diagnostic procedures to quantitatively convert the zymogen factor X into factor Xa which can be determined by means of a clotting assay or photometrically, using a synthetic chromogenic substrate. RVV-X activator is used in testing of lupus anticoagulants.

**Origin:** *Vipera russelli* snake venom **MW:** approx. 120'000

**Storage:** May be used by the expiry date given on the label when stored unopened, protected from moisture, in the dark, 2°-8°C. Avoid contamination of the reagents by micro-organisms. Shipment of product does not require cooling during the time of transportation.

|                |   |   |
|----------------|---|---|
| <b>Assay :</b> | <u>Chromogenic method</u>   | <u>Clotting method</u>                                    |
|                | 100 µl RVV-X (25 U/ml 25 mM CaCl <sub>2</sub> )                   | 25 µl RVV-X (5 mU/ml 20 mM Tris-HCl, pH 7.2, 150 mM NaCl) |
|                | 10 µl human citrated plasma                                       | 25 µl CaCl <sub>2</sub> 25 mM                             |
|                | => incubate for 75 s at 37 °C to activate factor X into factor Xa | 25 µl rabbit brain cephaline (0.2 mg/ ml)                 |
|                | 790 µl 50 mM Tris-HCl, pH 8.4                                     | => incubate for 1 min at 37 °C                            |
|                | 100 µl Pefachrome®FXa (4 mM)                                      | 25 µl human citrated plasma                               |
|                | => Determination of ΔOD/min at 405 nm                             |   |

**Unit definition:** 1 unit (U) is the amount of RVV-X which generates one international unit of enzyme (factor Xa) from zymogen (factor X) [Stocker et al., 1986].

**Stability after reconstitution:**

|              |         |
|--------------|---------|
| +37°C        | 8 hours |
| +15 to +25°C | 2 days  |
| +2 to +8°C   | 1 week  |
| -80°C        | 1 month |

The reconstituted product can be frozen immediately and stored at -20°C. Avoid refreezing.

**References:** Stocker K. Application of snake venom proteins in the diagnosis of hemostatic disorders. In: Medical Use of Snake Venom Proteins, Stocker K, ed. Boca Raton: CRC-Press 1990; 213-52.

Stocker K, Fischer H, Brogli M. Determination of factor X activator in the venom of the saw-scaled viper (*Echis carinatus*), Toxicon 1986; 24: 313-5.

Thiagarajan P, Pengo V, Shapiro SS. The use of dilute Russell's viper venom time for the diagnosis of lupus anticoagulant. Blood 1986; 68: 869-74.

Furie BC, Furie B. Coagulant protein of Russell's viper venom. Methods Enzymol 1976; 45: 191-205.



**Package size:** Vial containing 5 U/vial  
Vial containing 50 U/vial

**Code:** 121-06  
121-07

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