

## BE Factor V Deficient plasma

Depleted plasma for quantitative determination of Factor V activity in human plasma

### PRINCIPLE <sup>(1)(4)</sup>

Measurement of clotting time in presence of tissular thromboplastin, calcium and the deficient plasma FV in which all the factors are present in excess except of Factor V which is derived from the specimen to be tested.

This test is determined with BE reagents as follows:

- REF 771150, REF 771151: Thromboplastin high ISI
- REF 771100, REF 771101: Thromboplastin low ISI
- REF 771700: BE Owren Buffer (Plasma dilution buffer)

### CLINICAL SIGNIFICANCE <sup>(2) (7) (8) (9)</sup>

Anomalies of Factor V are associated with a higher risk of thromboses especially if other risk factors are present.

A Factor V deficiency has been observed in case of:

- Isolated deficiency (Congenital deficiency, acquired deficiency associated to Factor V inhibitors)
- Acquired deficiency associated with deficiencies of other coagulation factors:
  - Vitamin K antagonist therapy, hypovitaminosis K by nutritional intake deficiency, disorders in absorption or metabolism of Vitamin K (hemorrhagic disease of the newborn, cholestasis, treatments with antibiotics).
  - Liver diseases: cirrhosis, hepatitis.
  - Disseminated intravascular coagulation (DIC).

### REAGENTS

DP FV Deficient Plasma FV



Human Origin

Freeze dried plasma free of FV by selective immune-adsorption  
According to 1272/2008 regulation, these reagents are not classified as dangerous.

### SAFETY CAUTIONS

Behnk reagents are designated for professional in vitro diagnostic use.

- Refer to current Material Safety datasheet (MSDS) is available upon request.
- Use adequate protections (overall, gloves, glasses).
- Each donor unit used to manufacture this product was tested and found non-reactive for HBsAg, antibody to hepatitis C and antibody to HIV-1/HIV-2.
- However, as absence of infectious agents can never be proven, this plasma and all specimens should be handled as potentially infectious, in accordance with good laboratory practices using appropriate precautions.
- In the event of exposure, the directive of the responsible health authorities should be followed.
- Dispose of waste in accordance with the local regulations.

### PREPARATION OF REAGENTS

DP: Open the vial carefully and add 1 mL of demineralised water without delay. Recap the vial and let stand for 15 min at room temperature. Mix gently by swirling before use.

### STABILITY AND STORAGE

Unopened vials stored at 2-8 °C are stable until the expiry date stated on the label.

Once opened and reconstituted, plasma is stable:

- 10 hours at 2-25 °C

### SAMPLES COLLECTION AND HANDLING <sup>(5) (9)</sup>

Plasma from careful venipuncture with anticoagulant ratio of 1/10 (trisodium citrate solution 0.109 M). Mix immediately the blood with anticoagulant.

Avoid drawing with a syringe that could result in the formation of micro-clots.

Centrifuge 10 minutes at 2500 g.

Stability: 4 h at 20-25 °C, 8 h at 2-8 °C

Caution: If testing also Factor VII, do not store sample at 2-8°C, because the Factor VII may be activated by the Kallikrein system in this temperature range.

### LIMITS <sup>(3)</sup>

Thrombin inhibitors (hirudin, argatroban, ...) present in the specimen may decrease Factor V activity in the sample.

For a more comprehensive review of factors affecting this assay refer to the publication of Young D.S.

### MATERIAL REQUIRED BUT NOT PROVIDED

Basic medical analysis laboratory equipment  
Coagulation analyzer  
Demineralised water

### EXPECTED VALUES <sup>(6)</sup>

- Plasma (adult) : Usually > 70 %
- Each laboratory should establish its own normal ranges for the population that it serves.

REF 771605: DP (6 x1 mL)

### PROCEDURE

#### Automated method on Behnk Thrombolyzer series

Refer to the full detailed application specific to the automated system.

#### Note:

- Performances and stability data have been validated on Thrombolyzer Compact X (available on request).
- With manual procedure and on other automated coagulation analyzer, performances and stability data must be validated by user.

### CALIBRATION

REF 775100 BE Cal Ref Reference Plasma for calibration of coagulation tests

This Standard is traceable to SSC/ISTH Secondary Coagulation Standard NIBSC code: SSCLOT4.

Follow the Factor V calibration procedure of the analyzer.

### CALCULATION

Results are expressed in % according to the calibration curve by the analyzer.

### QUALITY CONTROL

REF 773100 BE Trol 1 and REF 773101 BE Trol 2

Controls are required for checking the accuracy and reproducibility of the results.

The control intervals should be adapted to each laboratory's individual requirements.

Values obtained should fall within the defined limits.

Follow the applicable government regulations and local guidelines for quality control.

### PERFORMANCES

The within run and between run studies were performed with normal and abnormal plasma on Thrombolyzer Compact X:

Within Run N = 20	level 1	level 2	Between Run N = 20	level 1	level 2
Mean%	96	33	Mean%	81	47
S.D. %:	3.0	1.0	S.D. %:	6.1	2.4
C.V. % :	3.6	3.3	C.V. % :	7.5	5.2

Linearity Range: from 10 % (QL) to 100 %

#### Interferences (Thromboplastin low ISI):

Lipids	No interference up to 450 mg/dL of triglycerides
Haemoglobin	No interference up to 258 µmol/L
Total Bilirubin	Negative interference from 228 µmol/L
Low molecular weight Heparin	No interference up to 0.114 IU anti Xa
Non-fractionated Heparin	No interference up to 0.038 IU anti Xa

Other substances may interfere with the results (see § Limits)

#### Calibration Stability:

Make a new calibration when changing reagent batch, if quality control results are found out of the established range and after maintenance operations.

### REFERENCES

- (1) SOULIER J.P., LARRIEU M.-J.: *Sang.* **23**, 7, 549-559, 1952
- (2) CAEN J., LARRIEU M.-J., SAMAMA M.: *Paris, L'Expansion scientifique*, 153, 347, 1975
- (3) YOUNG D.S., *Effect of Drugs on Clinical laboratory Tests*, 4<sup>th</sup> Ed. (1995) p.3-254 à 3-257
- (4) SAMAMA M., CONARD J., HORELLOU M.H., LECOMTE T.: "Physiologie et exploration de l'hémostase". PARIS: DOIN, 81-82, 116-118, 148-149, 1990
- (5) GJOANNES H., FAGERHOL M.K.: *Acta Obstet. Gynecol. Scand.*, **54**, 363-367, 1975
- (6) ALEXANDRE P.: *Paris: Edition Marketing Elipses*, 459-464, 1994
- (7) SAMPOL J., ARNOUX D., BOUTIERE B.: "Manuel Hémostase". Paris: Editions scientifiques et médicales Elsevier, 47, 366-368, 383-384, 409-430, 1995
- (8) ZOLLER B., HILLARP A., DAHLBACK B.: "Activated Protein C resistance": *clinical implication* Clin. Appl. Thromb., Hemost., **3**, 1, 25-32, 1997
- (9) WOODHAMS B., M.C. DUGA S., ASSELTA R.n, MALCOVATI M., PEYVANDI F., SANTAGODISTINO E., MANNUCCI P.M., TENCHINI M.L.: *Blood*, **102**, 9, 3210-3216, 2003

