This package insert follows the Pharmaceuticals, Medical devices and Other Therapeutic Products Act of Japan.

In Vitro Diagnostics
Marketing Approval No. 21000AMZ00558000

**Revised: January 2017 (8th edition)
*Revised: April 2008 (7th edition)

This package insert must be read carefully prior to use.

Protein C assay kit
(Classification No.: 30588000)

Testzym S PC

General Precautions

1. This product is for in vitro diagnostic use, and must not be used for any other purposes.
2. Clinicians should make a comprehensive clinical decision based on assay results in conjunction with clinical symptoms and other examination results.
3. This product should be used only as directed in this package insert. Reliability of results cannot be guaranteed if there are any deviations from the instructions in this package insert.
4. If the reagent accidentally comes in contact with eyes and/or mouth, rinse immediately with ample water as first aid, and consult the doctor if required.
5. Carefully read the operating instructions for each type of automated analyzers prior to using this product. Parameters for each type of analyzers are available, and can be requested from SEKISUI MEDICAL CO., LTD. if required.
6. Perform a quality control test prior to assay to ensure accuracy.

Description (Kit Components) **

Component	Ingredients
Activating Solution:	Protac (Russell's viper venom, derived from Agkistrodon contortrix contortrix)
Substrate Solution:	L-Pyroglutamyl-L-prolyl-L-arginyl-p-nitroanilide hydrochloride (S-2366)

Intended Use

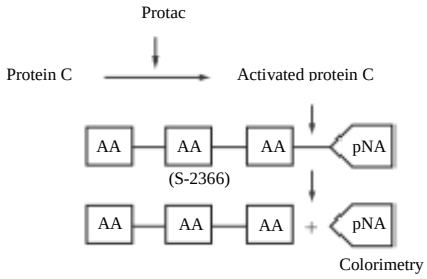
Measurement of protein C in plasma

Protein C is a vitamin K-dependent factor that is synthesized in the liver. Activated protein C plays an important role in the control of blood coagulation by proteolytic inactivation of Factors V and VII. It is known that serious thrombosis can occur in patients with congenital protein C deficiency. Measurement of protein C activity is essential when screening for a thrombotic tendency. The blood level of protein C is altered in patients with various diseases and symptoms, e.g., it shows a decrease in patients with disseminated intravascular coagulation (DIC) or liver disorders and those on oral anticoagulant therapy. Therefore, measurement of protein C activity is useful when screening for these diseases, as well as for analysis of disease pathology and estimation of the prognosis.

Assay Principle

1. Assay Principle

Add Protac (Russell's viper venom) which specifically activates protein C to the sample for measurement of protein C to prepare activated protein C. Activated protein C decomposes the synthetic chromogenic substrate (S-2366) to release p-nitroaniline. The activity of protein C in the sample is determined through measurement of released p-nitroaniline by colorimetry.



2. Features

1) Dilution of the sample is not necessary.
2) Liquid reagents, ready-to-use.
3) The synthetic chromogenic substrate used in this product shows extremely high specificity for activated protein C.
4) This product shows good quantification and excellent reproducibility.
5) Applicable to various automated analyzers.

Procedural Precautions **

1. Properties of Samples and Sampling Methods

1) Samples
(1) Plasma(citrated plasma) may be used.
(2) Heparin plasma or EDTA plasma should not be used.
2) Storage of samples
(1) If the isolated serum sample cannot be tested on the same day, specimens should be stored as follows:
2–10°C: for tests within 1 week
≤ -20°C: for tests within 1 month
Bring samples to room temperature (15–30°C) before use.
(2) Avoid repeated freezing and thawing, or errors in the assay results may occur.
(3) Use plastic containers and test tubes for dilution and/or storage of plasma.

2. Interfering substances

Assay results are not affected by free bilirubin (up to 50 mg/dL), conjugated bilirubin (up to 50 mg/dL), or hemoglobin (up to 1000 mg/dL).

3. Others

1) Always use Normal plasma "Daiichi" for calibration.
2) Precautions for assay range
If the activity of sample exceeds assay range, dilute the sample with saline and repeat the measurement.

Dosage/Administration (Assay Procedure) **

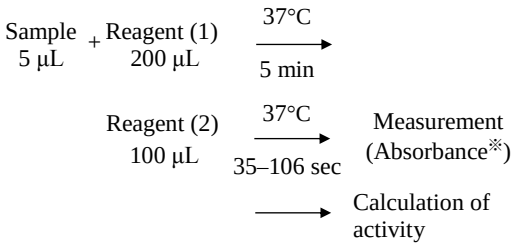
1. Preparation of reagents

Reagent (1): Activating Solution is ready to use.

Reagent (2): Substrate Solution is ready to use.

2. Assay Procedure

This product is compatible with various types of automated analyzer. An example of the assay procedure is indicated below.



※ Absorbance : The difference in absorbance between 405 nm and 505 nm.

Calibration material: Normal plasma "Daiichi" (Manufacture's assigned value)

Reagent blank: Purified water or saline

Assessment of Assay Results

1. Reference standard range

97 ± 15 %[2)]

(Relative to healthy volunteers [100 %])

2. There may be reactions or interfering reactions with non-target substances. If assay results appear to be unreliable, repeat the measurement (if necessary, after dilution) or try another analytical methods.

Performance

1. Sensitivity

1) Reagent blank: Reagent blank: absorbance variation being -0.02 to 0.02
2) Sensitivity: The difference of absorbance between 100 % normal plasma and physiological saline is from 0.050 to 0.075.

2. Accuracy: 90–110 % of the expected assay value

3. Within-run Reproducibility:

Coefficient of variation ≤ 5%

(Test methods used for 1.–3. are in-house methods.)

4. Measurement Range[7)]: (On Hitachi 7170 automated analyzer)

5–180 %

5. Correlation[7)]

Plasma N=87 r=0.984 y=0.97x–2.35

Control method: Approved in vitro diagnostic (synthetic chromogenic substrate method)

6. Standard Material

Pooled plasma obtained from healthy volunteers (in-house reference standard)

Precautions for Use or Handling **

1. Precautions for Handling (to Ensure Safety)

1) All samples used in the test should be handled as a material possibly infected with HIV, HBV, HCV, or other viruses. To prevent infection, use disposable gloves and avoid mouth pipetting during the test.
2) Normal plasma "Daiichi" contains human-derived components determined as HBsAg-negative, HIV antibody (AIDS virus antibody) negative, and HCV antibody negative. When using, however, it should be handled very carefully as with samples, considering the risk of infectious.

2. Precautions for use

1) This product should be stored as directed, without freezing. Freezing can deteriorate the reagents, which can produce inaccurate results. Therefore, avoid using the reagents which have been previously frozen.
2) Do not use expired reagents. Use of such reagents cannot guarantee the reliability of measurement values.
3) Do not replenish the reagents.
4) Do not perform the assay under direct sunlight

3. Precautions for Disposal

1) Before disposal, used samples and their containers must be immersed in sodium hypochlorite solution at a concentration of greater than 0.1% for longer than 1 hour or autoclaved at 121ºC for 20 minutes.
2) To prevent infections from spilled samples or solutions containing samples, wipe the spilled area thoroughly with disinfectants such as sodium hypochlorite solution at a concentration of greater than 0.1%.
3) The reagents and treated samples should be discarded as medical waste or industrial waste according to the waste disposal regulations.
4) The reagents should be disposed of in accordance with the Water Pollution Control act or related regulations.

4. Other precautions

Do not use the containers for other purposes.

Storage and Shelf Life **

1. Storage temperature: 2–10°C

2. Shelf life: 13 months from the date of manufacture

(The expiration date is printed on the outer package.)

Packaging

Name		Package
Testzym S PC	Activating Solution	2 × 8 mL
	Substrate Solution	2 × 8 mL

Constituent reagents are available in other configurations. For further details please contact SEKISUI MEDICAL CO., LTD.

References *

1) Esmon C.T.: Blood, 62, 1155, 1983.
2) Suzuki K. et al.: J Med Tech, 28, 25, 1984.
3) Sala N. et al.: Blood, 63, 1984.
4) Klein J.D. & Walker F.J.: Biochem, 25, 4175, 1986.
5) Martinoli J.L. & Stocker K.: Thromb Res, 43, 253 1986.
6) Akatsu S. et al.: J Clin Lab Inst Reag, 21, 125, 1998.
7) In house data, SEKISUI MEDICAL CO., LTD.

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