

**ENGLISH**

# S-2366™

For Laboratory Use Only

## S-2366™

S-2366 is a chromogenic substrate for factor XI and activated protein C.

### COMPOSITION

Each vial contains chromogenic substrate S-2366 25 mg and mannitol 40 mg as a bulking agent.

### CHEMISTRY

**Chemical name:** L-Pyroglutamyl-L-prolyl-L-arginine-p-Nitroaniline hydrochloride.

**Formula:** < Glu-Pro-Arg-pNA ·HCl

**Mol. wt:** 539.0

$\epsilon_{316\text{ nm}}$ :  $1.27 \cdot 10^4 \text{ mol}^{-1} \cdot \text{L} \cdot \text{cm}^{-1}$

**Solubility:** > 10 mmol/L in H<sub>2</sub>O

**Stability:** Substance: Stable until expiry date if stored at 2-8°C. Avoid exposure to light. The substance is hygroscopic and should be stored dry. Solution: 2 mmol/L in H<sub>2</sub>O is stable for more than 6 months at 2 to 8°C. Contamination by microorganisms may cause hydrolysis.

**Suitable stock solution:** 2-3 mmol/L in H<sub>2</sub>O.

### PRINCIPLE

<Glu-Pro-Arg-pNA  $\xrightarrow{\text{Enzyme}}$  <Glu-Pro-Arg-OH+pNA

The method for the determination of activity is based on the difference in absorbance (optical density) between the pNA formed and the original substrate. The rate of pNA formation, i.e. the increase in absorbance per second at 405 nm, is proportional to the enzymatic activity and is conveniently determined with a photometer.

### KINETIC DATA

**Protein C:**  $K_m=2 \cdot 10^{-4} \text{ mol/L}$  and  $k_{\text{cat}}=80 \text{ sec}^{-1}$  (The enzyme is assumed to be pure. Mol. wt. 62 000) Determined with RVV activated bovine Protein C in 0.05 mol/L Tris, pH 8.0, I 0.25 (NaCl) and 4mmol/L CaCl<sub>2</sub> at 37°C.

$K_m=8 \cdot 10^{-4} \text{ mol/L}$  and  $k_{\text{cat}}=160 \text{ sec}^{-1}$ .

Determined with thrombin-thrombomodulin complex activated human Protein C in 0.05 mol/L Tris, pH 8.0, I 0.13 (NaCl) and 10 mmol/L CaCl<sub>2</sub> at 25°C (5).

**FXI<sub>a</sub>:**

$K_m=4 \cdot 10^{-4} \text{ mol/L}$  and  $k_{\text{cat}} \cong 1000 \text{ sec}^{-1}$  in 0.1 mol/L Phosphate buffer, pH 7.6, I 0.15 mol/L (NaCl) at 37°C (1).  $K_m=5,6 \cdot 10^{-4} \text{ mol/L}$  and  $k_{\text{cat}}=350 \text{ sec}^{-1}$  in 0.09 mol/L Tris, pH 8.3, 0.09 mol/L NaCl, 1 mg/mL of bovine serum albumin at room temperature.(4).

### SELECTIVITY

S-2366 is also readily split by trypsin, thrombin, plasmin and tissue plasminogen activator (2). It is split by FXII<sub>a</sub>, plasma kallikrein and FX<sub>s</sub> as well.

### APPLICATIONS

The substrate can be used for the determination of purified enzyme preparations as well as of Protein C and FXI in plasma (1,3,4,5)

## CHROMOGENIX



**Chromogenix-  
Instrumentation Laboratory SpA**  
V.le Monza 338 - 20128 Milano (Italy)

301964R1

**DEUTSCH**

# S-2366™

Nur für Laborzwecke

S-2366 ist ein chromogenes Substrat für Faktor XI und aktiviertes Protein C.

### ZUSAMMENSETZUNG

Jedes Fläschchen enthält 25 mg chromogenes Substrat S-2366 und 40 mg Mannitol als Füllstoff.

### CHEMIE

**Chemischer Name:** L-Pyroglutamyl-L-prolyl-L-arginin-p-Nitroanilin hydrochlorid

**Formel:** <Glu-Pro-Arg-pNA ·HCl

**Molekulargewicht:** 539,0

$\epsilon_{316\text{ nm}}$ :  $1,27 \cdot 10^4 \text{ mol}^{-1} \cdot \text{L} \cdot \text{cm}^{-1}$

**Löslichkeit:** >10 mmol/l in H<sub>2</sub>O



## REFERENCES

1. SCOTT C F et al.: Amidolytic assay of human factor XI in plasma. Comparison with a coagulant assay and a new rapid radioimmunoassay. *Blood* 63, 42-50 (1984).
2. FRIBERGER P et al.: Activity of plasminogen activators on tripeptide chromogenic substrates. In *Progress in Chemical Fibrinolysis and Thrombolysis Vol 4*. Davidson J F et al Churchill Livingstone 149-153 (1979).
3. BERTINA R M et al.: The use of a function and immunologic assay for plasma Protein C in the study of the heterogeneity of congenita Protein C deficiency. *Thromb Haem* 51, 1-5 (1984).
4. VAN DER GRAAF et al.: Isolation and functional characterisation of the active light chain of activated human blood coagulation Factor XI. *J Biol Chem* 258, 9669-9675 (1983).
5. SALAN et al.: A functional assay of Protein C in human plasma. *Blood* 63, 671-675 (1984).

***CHROMOGENIX***