ENGLISH

S-2366™

For Laboratory Use Only

For General Laboratory Use

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.

PRECAUTIONS AND WARNINGS:
Hazard class: None
Hazard statements: None
Precautionary statements: None
Supplemental Hazard Information: ≈ 3.3% of the mixture consists of component of unknown acute toxicity (oral, dermal, inhalation) for the human health and unknown hazard to the aquatic environment.

CHEMISTRY

Chemical name:	L-Pyroglutamyl-L-prolyl-L-arginine-p-Nitroaniline hydrochloride.
Formula:	*< Glu-Pro-Arg-pNA* · HCl
Mol. wt:	539.0
$\varepsilon_{316\ nm}$:	$1.27 \cdot 10^4\ mol^{-1} \cdot L \cdot cm^{-1}$
Solubility:	> 10 mmol/L in H_2O
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_2O is stable for more than 6 months at 2-8°C. Contamination by microorganisms may cause hydrolysis.
Suitable stock solution:	2-3 mmol/L in H_2O.

PRINCIPLE

Enzyme

<Glu-Pro-Arg-pNA ————> <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.

CHROMOGENIX

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301964R3

KINETIC DATA

Protein C: $K_m = 2 \cdot 10^{-4}$ mol/L and $k_{cat} = 80$ 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 $CaCl_2$ at 37°C.
$K_m = 8 \cdot 10^{-4}$ mol/L and $k_{cat} =$ 160 sec^{-1}.
Determined with thrombin-trombomodulin complex activated *human* Protein C in 0.05 mol/L Tris, pH 8.0, I 0.13 (NaCl) and 10 mmol/L $CaCl_2$ at 25°C (5).

FXI_a: $K_m = 4 \cdot 10^{-4}$ mol/L and k_{cat} 1000 sec-1 in 0.1 mol/L Phosphate buffer, pH 7.6, I 0.15 mol/L (NaCl) at 37°C (1).
$K_m = 5.6 \cdot 10^{-4}$ mol/L and $k_{cat} =$ 350 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 $FXII_a$, plasma kallikrein and FX_a 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)

1. SCOTT C F et al.: Amidolytic assay of human factor XI in plasma. Comparison with a coagulent 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. SALA N et al.: A functional assay of Protein C in human plasma. Blood 63, 671-675 (1984).

CHROMOGENIX

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LANGUAGES

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TECHNICAL SPECS

PAPER:	White paper, 50-60 g/m^2 weight.
SIZE:	4.1 x 5.9" (104 x 150 mm.).
PRINT:	Front/Back.
PRINT COLOR:	All type in black.