S-2765™

CHROMOGENIX

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ENGLISH

S-2765™

For Laboratory Use Only

For General Laboratory Use

S-2765 is a chromogenic substrate for determination of Factor Xa. It is also very sensitive to trypsin.

COMPOSITION

Each vial contains the chromogenic substrate S-2765, 25 mg and mannitol 60 mg as a bulking agent.

CHEMISTRY

Chemical name:	N-α-Benzyloxycarbonyl-D-arginyl-L-glycyl-L-arginine-p-nitroaniline-dihydrochloride
Formula:	N-α-Z-D-Arg-Gly-Arg-pNA · 2HCl
Mol. wt.:	714.6
$\varepsilon_{316\,nm}$:	$1.27 \cdot 10^4$ mol^{-1} · L · cm^{-1}
Solubility:	> 40 mmol/L in H_2O > 10 mmol/L in Tris buffer (pH 8.3, I 0.25)
Stability:	Lyophilized substance: stable at 2-8°C until expiry date printed on the label. The substance is hygroscopic and should be stored in a dry place. Solution: 2 mmol/L in H_2O is stable for six months at 2 to 8°C Contamination by micro-organisms may cause hydrolysis.
Suitable stock solution:	1-2 mmol/L in H_2O.

PRINCIPLE

$$\text{N-α-Z-D-Arg-Gly-Arg-pNA} \xrightarrow{\text{Enzyme}} \text{N-α-Z-D-Arg-Gly-Arg-OH} + \text{pNA}$$

The method for the determination of activaty is based on the difference in absorbance 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

Factor Xa (bovine):	$k_m = 1 \cdot 10^{-4}$ mol/L, $k_{cat} = 290$ sec^{-1} in Tris buffer pH 8.3, I 0.25 at 37°C.
Factor Xa:	(human plasma activated with Russel's Viper Venom): $k_m = 3 \cdot 10^{-4}$ mol/L in Tris buffer pH 7.8, I 0.4 at 37°C.

STANDARDIZATION

An activity of ΔA/min=0.05 (37°C) is obtained by using a substrate concentration of $2 \cdot k_m$ and a concentration of 0.04 nkat/mL of FXa (Chromogenix AB).

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