SPECTROZYME® FXIIa Chromogenic substrate
Product No. ADG312

Description
Highly sensitive chromogenic peptide substrate for factor XIIa. Determination of factor XIIa activity for research, in-process and quality control.

Chemistry
Formula: H-D-CHA-Gly-Arg-pNA⋅2AcOH
MW: 624.7 Dalton
Purity: < 0.5% free para-nitroaniline
Biochemical Characteristics:
\[ k_{\text{cat}} = 4.4/\text{sec} \quad V_{\text{max}} = 3.14 \ \mu\text{mol/min} \]

Assay Conditions
Enzyme activity is determined by measuring the increase in absorbance of the free chromophore (pNA) generated per unit time at λ405 nm. At excess substrate concentrations, the rate at which the absorbance increases due to the amount of chromophore released is linearly related to enzyme concentration. Measurement can be made either through acid quenching of the reaction (end-point method), or through use of a kinetic recording spectrophotometer (initial-rate-method).

Material required but not provided:
Buffer, NaCl, reference material, KALLISTOP™, FXII activator, dist. H₂O.

Buffer:
50 mM Tris-imidazole buffer, 150 mM NaCl, pH 7.9

Assay 1: Suggested protocol for the determination of factor XIIa activity:
0.700 ml buffer
0.100 ml factor XIIa (0.2 units/ml)
0.200 ml SPECTROZYME® FXIIa (4 mM)
=> Determination of ΔOD/min at 405 nm

Assay 2: Suggested protocol for the determination of factor XIIa activity (FXII activated by Kalliplastin, Dextran, or ACTIN) using SPECTROZYME® FXIIa and a selective synthetic inhibitor of plasma kallikrein (KALLISTOP™):
0.100 ml citrated plasma (diluted 1:5 with NaCl)
0.200 ml Kalliplastin (20 μg/ml)
- incubate for 1 min at 37 °C
0.500 ml buffer
0.100 ml KALLISTOP™ (0.2 mM, ADG503)
0.100 ml SPECTROZYME® FXIIa (2 mM)
=> Determination of ΔOD/min at 405 nm

Warnings and Precautions
Contains: para-nitroanilide diacetate salt
Hazard pictograms
Signal word Warning
Hazard statements
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.

Precautionary statements
P261 Avoid breathing dust.
P284 Wash thoroughly after handling.
P280 Wear protective gloves, wear eye/face protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.

Presentation
Amber glass vial containing 10 μmoles of lyophilized substrate.

Reconstitution
Reconstitute with filtered deionized water to create a 10 mM solution. Shake gently before use.

Storage
May be used by the expiry date given on the label when stored unopened, protected from moisture, in the dark, 2-8°C. Avoid contamination of the reagents by microorganisms.

Shipment of product does not require cooling during the time of transportation.

References