Product datasheet

Thrombin Activity Assay Kit (Fluorometric) ab197006

Overview

Product name: Thrombin Activity Assay Kit (Fluorometric)
Detection method: Fluorescent
Sample type: Plasma, Purified protein
Assay type: Quantitative
Sensitivity: 1 ng
Species reactivity: Reacts with: Mammals, Other species

Product overview:
Thrombin Activity Assay Kit (Fluorometric) (ab197006) is simple, rapid and can detect Thrombin activity as low as 1 ng in samples.

In the thrombin activity assay protocol, a synthetic AMC-based peptide substrate is proteolytically cleaved by thrombin to release a fluorophore, AMC, which can be easily quantified by fluorescence reader at Ex/Em = 350/450 nm.

Thrombin activity assay protocol summary:
- add standards and samples to wells
- add reaction mix
- analyze with a microplate reader for 30-60 min

Notes:
Thrombin enzyme (Factor IIa, EC 3.4.21.5), a serine protease, is an important clotting factor in the coagulation cascade that involves the conversion of soluble fibrinogen to insoluble active fibrin strands.

Platform:
Microplate reader

Properties

Storage instructions:
Store at -20°C. Please refer to protocols.

Components:

<table>
<thead>
<tr>
<th>Components</th>
<th>100 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thrombin Assay Buffer</td>
<td>1 x 15ml</td>
</tr>
<tr>
<td>Thrombin Dilution Buffer</td>
<td>1 x 1ml</td>
</tr>
</tbody>
</table>

References

2 References
2 Images
Thrombin, which cleaves bonds after Arg and Lys, converts fibrinogen to fibrin and activates factors V, VII, VIII, XIII, and, in complex with thrombomodulin, protein C. Functions in blood homeostasis, inflammation and wound healing.

Tissue specificity
Expressed by the liver and secreted in plasma.

Involvement in disease
Factor II deficiency
Ischemic stroke
Thrombophilia due to thrombin defect
Pregnancy loss, recurrent, 2

Sequence similarities
Belongs to the peptidase S1 family.
Contains 1 Gla (gamma-carboxy-glutamate) domain.
Contains 2 kringle domains.
Contains 1 peptidase S1 domain.

Post-translational modifications
The gamma-carboxyglutamyl residues, which bind calcium ions, result from the carboxylation of glutamyl residues by a microsomal enzyme, the vitamin K-dependent carboxylase. The modified residues are necessary for the calcium-dependent interaction with a negatively charged phospholipid surface, which is essential for the conversion of prothrombin to thrombin.
N-glycosylated. N-glycan heterogeneity at Asn-121: Hex3HexNAc3 (minor), Hex4HexNAc3 (minor) and Hex5HexNAc4 (major). At Asn-143: Hex4HexNAc3 (minor) and Hex5HexNAc4 (major).

Cellular localization
Secreted > extracellular space.

Images

Standard plot of Thrombin Activity.
Thrombin activity was measured in plasma samples in the presence and absence of a Thrombin inhibitor, PPACK Dihydrochloride. S = Substrate, I = Inhibitor, AB = Activation Buffer containing Factor Xa. Assays were performed following the kit protocol.

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