Factor Xa Activity Assay Kit (Fluorometric) ab204711

Overview

Product name: Factor Xa Activity Assay Kit (Fluorometric)
Detection method: Fluorescent
Sample type: Plasma, Purified protein
Assay type: Enzyme activity
Sensitivity: < 1 ng
Assay time: 0h 40m

Product overview

Factor Xa Activity Assay Kit (Fluorometric) (ab204711) utilizes the ability of Factor Xa to cleave a synthetic substrate thereby releasing a fluorophore, AMC, which can be quantified by fluorescence readers. This assay kit is simple, rapid and can detect Factor Xa activity as low as 1 ng.

Factor Xa activity assay protocol summary:
- add samples and standards to wells
- add reaction mix
- analyze with microplate reader for 30-60 min every 2-3 min

Notes

Factor Xa (FXa) is the activated form of the coagulation factor X (Stuart-Power factor, thrombokinase, prothrombinase, thromboplastin, E.C.3.4.21.6). Factor X, a serine endopeptidase plays an important role at several stages of the coagulation pathway. It acts by converting prothrombin into active thrombin by complexing with activated co-factor V in the prothrombinase complex. Unfractionated heparin and various low molecular weight heparins bind to plasma cofactor antithrombin to inactivate several coagulation factors including factor Xa.

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>
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</thead>
<tbody>
<tr>
<td>FXa Assay Buffer</td>
<td>1 x 15ml</td>
</tr>
<tr>
<td>FXa Dilution Buffer</td>
<td>1 x 1ml</td>
</tr>
</tbody>
</table>
Function
Factor Xa is a vitamin K-dependent glycoprotein that converts prothrombin to thrombin in the presence of factor Va, calcium and phospholipid during blood clotting.

Tissue specificity
Plasma; synthesized in the liver.

Involvement in disease
Defects in F10 are the cause of factor X deficiency (FA10D) [MIM:227600]. A hemorrhagic disease with variable presentation. Affected individuals can manifest prolonged nasal and mucosal hemorrhage, menorrhagia, hematuria, and occasionally hemarthrosis. Some patients do not have clinical bleeding diathesis.

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

Post-translational modifications
The vitamin K-dependent, enzymatic carboxylation of some glutamate residues allows the modified protein to bind calcium.
N- and O-glycosylated. O-glycosylated with core 1 or possibly core 8 glycans.
The activation peptide is cleaved by factor IXa (in the intrinsic pathway), or by factor VIIa (in the extrinsic pathway).
The iron and 2-oxoglutarate dependent 3-hydroxylation of aspartate and asparagine is (R) stereospecific within EGF domains.

Cellular localization
Secreted.

Components
<table>
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<tr>
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<th>100 tests</th>
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<tr>
<td>FXa Enzyme Standard</td>
<td>1 x 5µl</td>
</tr>
<tr>
<td>FXa Substrate</td>
<td>1 x 200µl</td>
</tr>
</tbody>
</table>

Images
Standard plot of FXa activity measured at two different emission wavelengths (450 and 460 nm) keeping the excitation at 350 nm.
FXa activity was measured in plasma samples in the presence and absence of a FXa inhibitor, GGACK Dihydrochloride. S = Substrate, I = Inhibitor.

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