

Recombinant Human FA10 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50291

Size: 10ug, 100ug

Protein Name: Coagulation factor X (EC 3.4.21.6) (Stuart factor) (Stuart-Prower factor)
[Cleaved into: Factor X light chain; Factor X heavy chain; Activated factor Xa heavy chain]

Synonym: F10

UniProt ID: P00742

UniProt Link: www.uniprot.org/uniprotkb/P00742/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 488 AA

Molecular Weight: 55 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MGRPLHLVLLSASLAGLLLLGESLFIRREQANNILARVTRANSFLEEMKKGHLERECMEETCSYEEAR
EVFEDSDKTNEFWNKYKDGQDQCETSPCQNQGKCKDGLGEYTCTCLEGFEGKNCELFTRKLCSLDN
GDCDQFCHEEQNSVVCSCARGYTLADNGKACIPTGPYPGKQTLERRKRVAQATSSSGEAPDSIT
WKPYDAADLDPTENPFDLLDFNQTTQPERGDNNLTRIVGGQECKDGECPWQALLINEENEGFCGGTI
LSEFYILTAACHLYQAKRFKVRVGDNRNTEQEEGGEAVHEVEVVIKHNRFKETYDFDI AVLRLKTPITF
RMNVAPACLPERDWAESTLMTQKTGIVSGFGRTHEKGRQSTRCLKMLEVPYVDRNSCKLSSSFIITQN
MFCAGYDTKQEDACQGDGGPHVTRFKDTYFVTGIVSWGEGCARKGKYGIYTKVTAFLKWIDRSM
KTRGLPKAKSHAPEVITSSPLK

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Coagulation factor X (EC 3.4.21.6) (Stuart factor) (Stuart-Prower factor) [Cleaved into: Factor X light chain; Factor X heavy chain; Activated factor Xa heavy chain] produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein 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 (PubMed:22409427, PubMed:39880037). Factor Xa activates pro-inflammatory signaling pathways in a protease-activated receptor (PAR)-dependent manner (PubMed:24041930, PubMed:30568593, PubMed:34831181, PubMed:18202198). Up-regulates expression of protease-activated receptors (PARs) F2R, F2RL1 and F2RL2 in dermal microvascular endothelial cells (PubMed:35738824). Triggers the production of pro-inflammatory cytokines, such as MCP-1/CCL2 and IL6, in cardiac fibroblasts and umbilical vein endothelial cells in PAR-1/F2R-dependent manner (PubMed:30568593, PubMed:34831181). Triggers the production of pro-inflammatory cytokines, such as MCP-1/CCL2, IL6, TNF/TNF, IL-1beta/IL1B, IL8/CXCL8 and IL18, in endothelial cells and atrial tissues (PubMed:24041930, PubMed:35738824, PubMed:9780208). Induces expression of adhesion molecules, such as ICAM1, VCAM1 and SELE, in endothelial cells and atrial tissues (PubMed:24041930, PubMed:35738824, PubMed:9780208). Increases expression of phosphorylated ERK1/2 in dermal microvascular endothelial cells and atrial tissues (PubMed:24041930, PubMed:35738824). Triggers activation of the transcription factor NF-kappa-B in dermal microvascular endothelial cells and atrial tissues (PubMed:24041930, PubMed:35738824). Activates pro-inflammatory and pro-fibrotic responses in dermal fibroblasts and enhances wound healing probably via PAR-2/F2RL1-dependent mechanism (PubMed:18202198). Activates barrier protective signaling responses in endothelial cells in PAR-2/F2RL1-dependent manner; the activity depends on the cleavage of PAR-2/F2RL1 by factor Xa (PubMed:22409427). Up-regulates expression of plasminogen activator inhibitor 1 (SERPINE1) in atrial tissues (PubMed:24041930).

Subcellular Localization: Secreted.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.