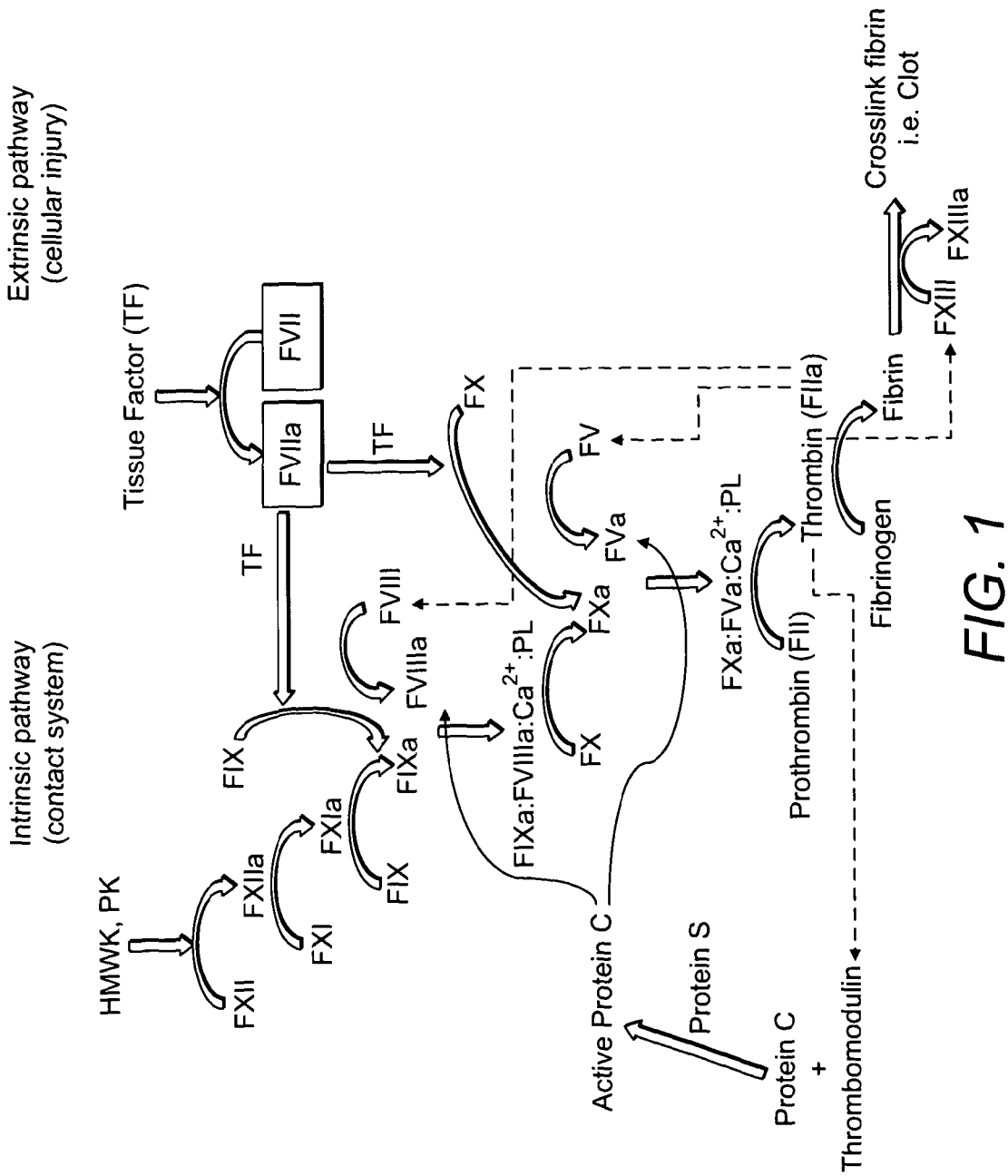

Intrinsic pathway
(contact system)
Extrinsic pathway
(cellular injury)
HMWK, PK
FXII
FXIIa
FXI
FXIa
FIX
FIXa
FVIII
FVIIIa
FIXa:FVIIIa:Ca2+:PL
FX
FXa
FV
FVa
FXa:FVa:Ca2+:PL
Prothrombin (FII)
Thrombin (FIIa)
Fibrinogen
Fibrin
FXIII
FXIIIa
Crosslink fibrin
i.e. Clot
Tissue Factor (TF)
FVII
FVIIa
TF
TF
Active Protein C
Protein S
Protein C
+
Thrombomodulin

FIG. 1

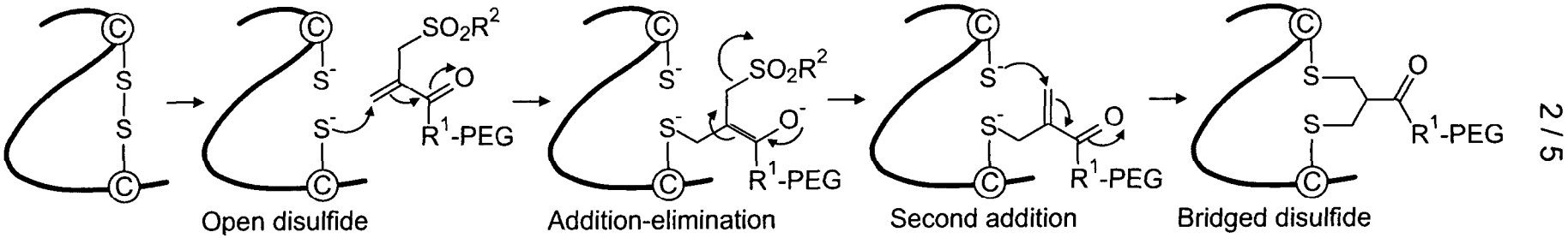
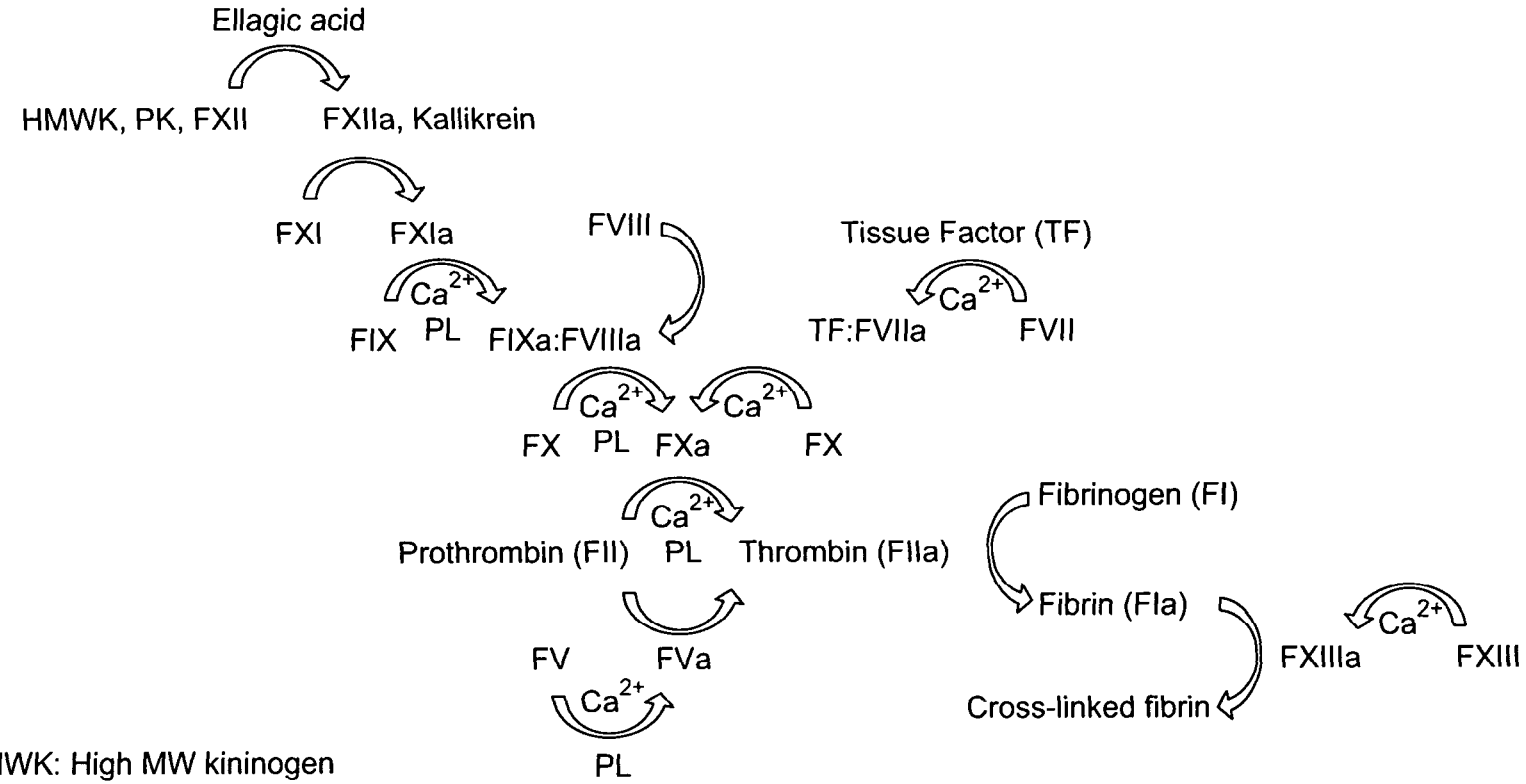

C
S
S
C
Open disulfide
S-
S-
SO2R2
O
R1-PEG
Addition-elimination
O-
Second addition
Bridged disulfide

FIG. 2



HMWK: High MW kininogen
PK: Prekallikrein
PL: Phospholipid

FIG. 3

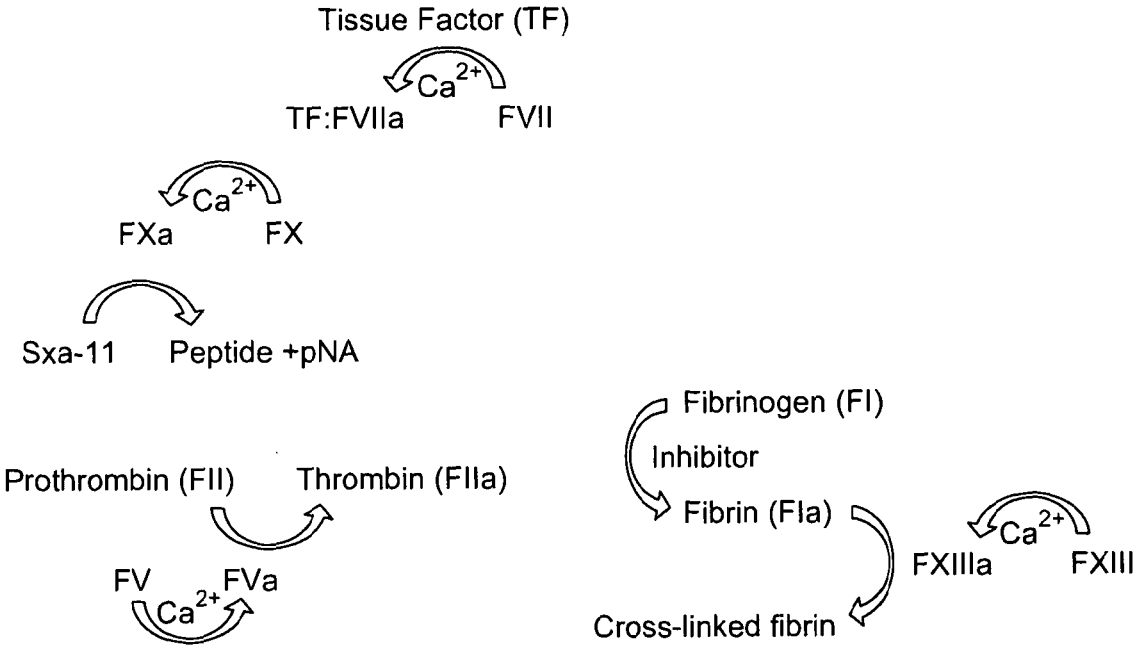

Tissue Factor (TF)
Ca2+
TF:FVIIa
FVII
Ca2+
FXa
FX
Sxa-11
Peptide +pNA
Prothrombin (FII)
Thrombin (FIIa)
FV
FVa
Ca2+
Fibrinogen (FI)
Inhibitor
Fibrin (FIa)
Ca2+
FXIIIa
FXIII
Cross-linked fibrin

FIG. 4

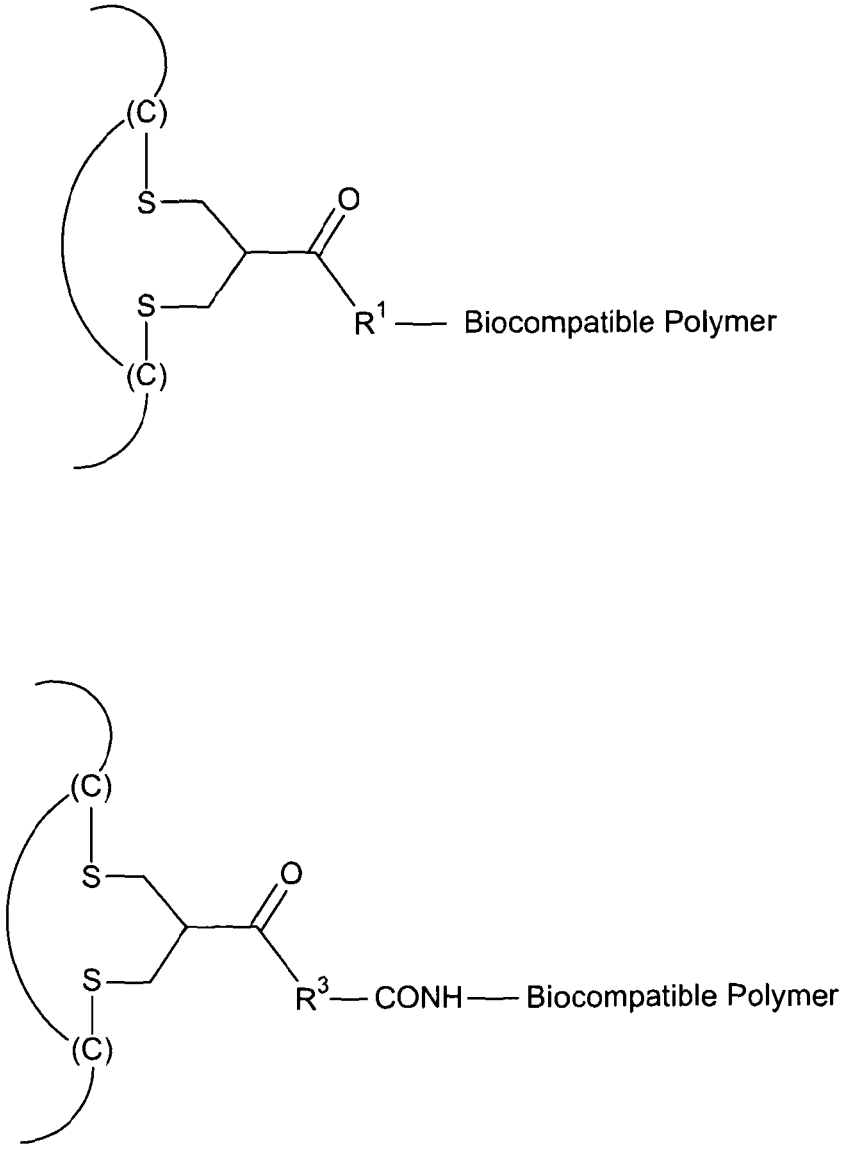

(C)
S
O
S
R1
Biocompatible Polymer
(C)
(C)
S
O
S
R3
CONH
Biocompatible Polymer
(C)

FIG. 5