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KM, ML, MR, NE, SN, TD, TG).

(54) **Title:** ANTI-FACTOR IX PADUA ANTIBODIES

FIX-WT: SIGNAL PEPTIDE	PROPEPTIDE	LIGHT CHAIN
MQRVNNIMAESPGILITCLLYLLSAECTVFLDHEANAKILNRPKRYNSGKLEEFVQGNLERECMEER CSFEAREVEFENTERITTEWKQYVSGQCESNPCLNGGSKODINSYECWCPGTEGKNCGLDNTONT KNGRCRQPCNLSADNKVVCSTEGYRLAENQKSCPEAVPFCGRVSVSQSKLTAEIVPQVQVYNS TEAETILDNITGSTQSFNCFRVVGGEDAKPGQFPHQVVLNGKVDAFCGGSIVNKNITVTAACHVETS VKITVVAEGHNCETETEQKRVIRITPHNYNAINKYNHDALELDEPLVLSIVPCCACKE YNIILAKFGSGVYSGWRVTHKGRSALVLYLRVPLVDRATCLLSTKTTVNNMFCAGFHEGGRDSQ GDSGGPHVTEVETSTFLTGLTNGEBCAMKGYGITKVSRYNNAIKKTKLT		
		ACTIVATION PEPTIDE
		HEAVY CHAIN

FIX-PADUA:

MQRVNNIMAESPGILITCLLYLLSAECTVFLDHEANAKILNRPKRYNSGKLEEFVQGNLERECMEER
CSFEAREVEFENTERITTEWKQYVSGQCESNPCLNGGSKODINSYECWCPGTEGKNCGLDNTONT
KNGRCRQPCNLSADNKVVCSTEGYRLAENQKSCPEAVPFCGRVSVSQSKLTAEIVPQVQVYNS
TEAETILDNITGSTQSFNCFRVVGGEDAKPGQFPHQVVLNGKVDAFCGGSIVNKNITVTAACHVETS
VKITVVAEGHNCETETEQKRVIRITPHNYNAINKYNHDALELDEPLVLSIVPCCACKE
YNIILAKFGSGVYSGWRVTHKGRSALVLYLRVPLVDRATCLLSTKTTVNNMFCAGFHEGGRDSQ
GDSGGPHVTEVETSTFLTGLTNGEBCAMKGYGITKVSRYNNAIKKTKLT

PADUA MUTANT:

REPLACEMENT OF THE AMINO ACID ARGININE (R) TO LEUCINE (L) AT POSITION 384
LEADS TO A HYPERFUNCTIONAL FIX ACTIVITY (-5-10X). POSITION 384 IS POSITION 338
OF THE MATURE PEPTIDE SEQUENCE WHICH EXCLUDES SIGNAL
PEPTIDE AND PROPEPTIDE.

FIGURE 1

(57) **Abstract:** Provided herein are anti-Factor IX Padua binding constructs, e.g., antibodies and antigen-binding fragments thereof. Related polypeptides, conjugates and kits are also provided. The inventions may be used in methods of detecting Factor IX Padua in a sample.

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