Supplementary Fig. S1

Supplementary Fig. S2 Rotem analysis. (A) Representative human whole blood thromboelastogram (ROTEM) profiles. Venous blood was pre-incubated with a sub-threshold recombinant tissue plasminogen activator (rtPA) alone (1.1 nmol/L), rtPA/DLF (1.1 nmol/L), NF alone, DLF alone and rpTF/NF. (B) In each condition, the rate of fibrinolysis was assessed by the reduction of the amplitude of the thromboelastogram profile at 60 minutes. Data are mean % ± SEM; *p < 0.05; significantly different (n = 3, 4). DLF, dilysine fucoidan; NF, native fucoidan; SEM, standard error of mean.
**Supplementary Fig. S3** Immunofluorescent imaging was performed to determine the colocalization of NF-FITC and activated platelet in thrombus cryosections after thromboelastometry. Panel show 40X magnification of images of the clot with the corresponding FITC-NF staining in green (top). Platelets were stained by anti-CD62P (P-selectin, red) or anti-CD42b(aGP1b, red) and merged to FITC-NF staining (bottom). The white bar represents 20 μm. DLF, dilysine fucoidan; FITC, fluorescein isothiocyanate; NF, native fucoidan; SEM, standard error of mean.

**Supplementary Fig. S4.** FITC-tPA binding to resting and TRAP-activated washed platelets. Results are expressed in mean fluorescence. FITC-tPA alone (grey) or complexed with DLF 1 to 5 molar ratio (orange) to platelets. Bar graph representing three different experiments with statistical relevance; one-way ANOVA (\(^* p < 0.05\)). ANOVA, analysis of variance; FITC, fluorescein isothiocyanate; tPA, tissue plasminogen activator; TRAP, thrombin receptor-activating peptide.
Supplementary Fig. S5. The in vivo efficacy rtPA-DLF on thrombolysis. (A) Intravital microscopy demonstrating thrombolytic activity of rtPA alone or rtPA-DLF in vivo mesenteric vessels thrombosis experiments. Clots were induced in the mesenteric venule of mice using ferric chloride (10%) for 2.30 minutes. The accumulation of rhodamine 6G-stained platelets (in red) was recorded. Representative images showing the thrombolytic efficacy of rtPA-DLF following 1 hour of thrombosis as compared to rtPA alone, DLF alone (0.5 mg/kg mouse), native fucoidan (NF; 1 mg/kg) and rtPA + NF. Reperfusion was observed only on mice treated by rtPA-DLF as compared to controls. (B) Quantification of the rate of occluded vessels within 1 hour following thrombosis induction. DLF, dalysisine fucoidan; rtPA, recombinant tissue plasminogen activator.