

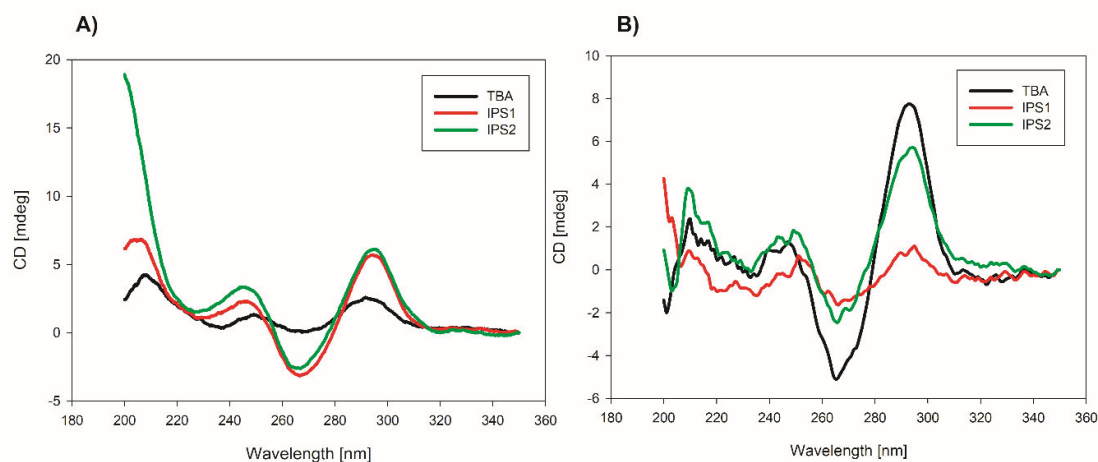


# Thrombin-binding aptamer with inversion of polarity sites (IPS): effect on DNzyme activity and anticoagulant properties

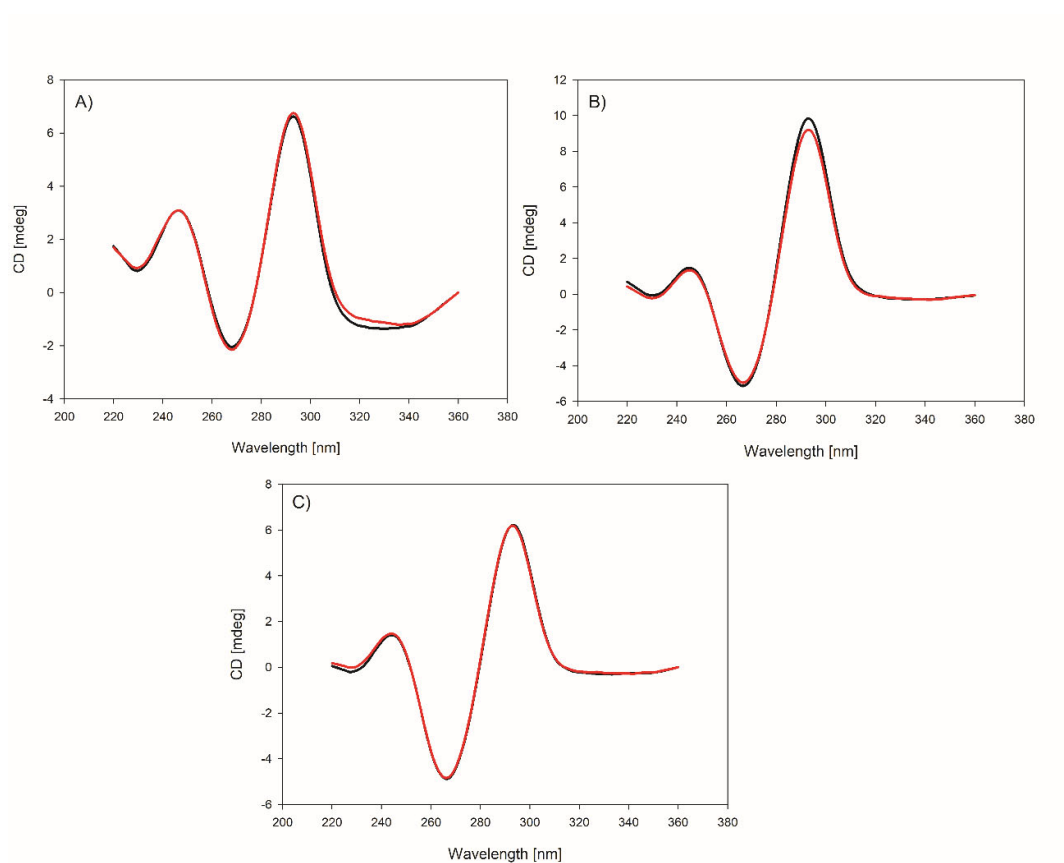
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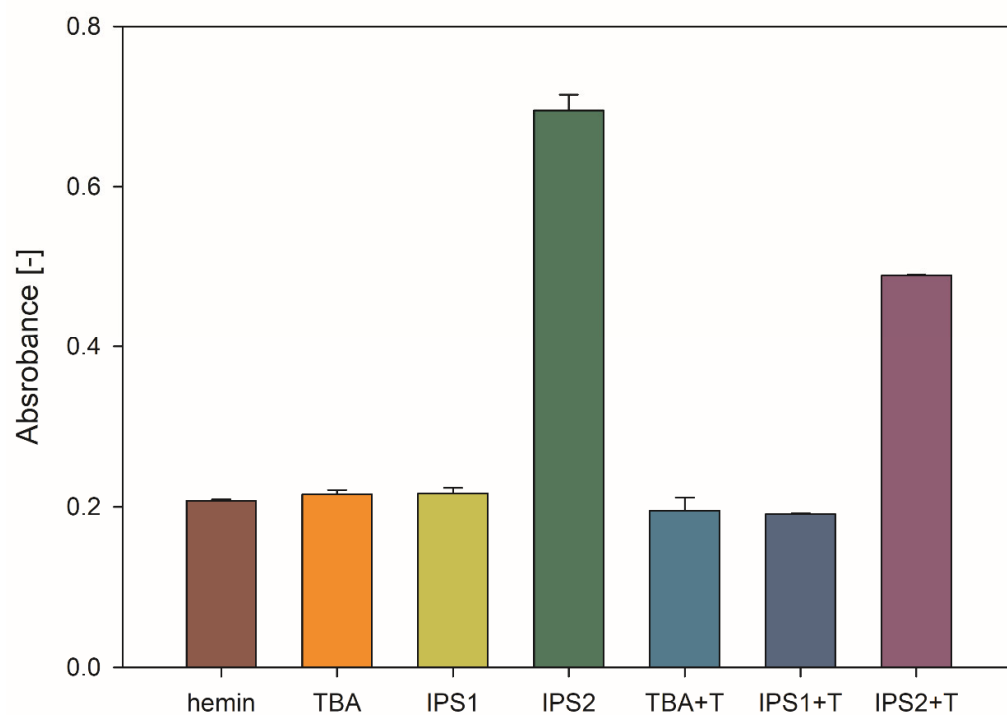
## Supplementary materials



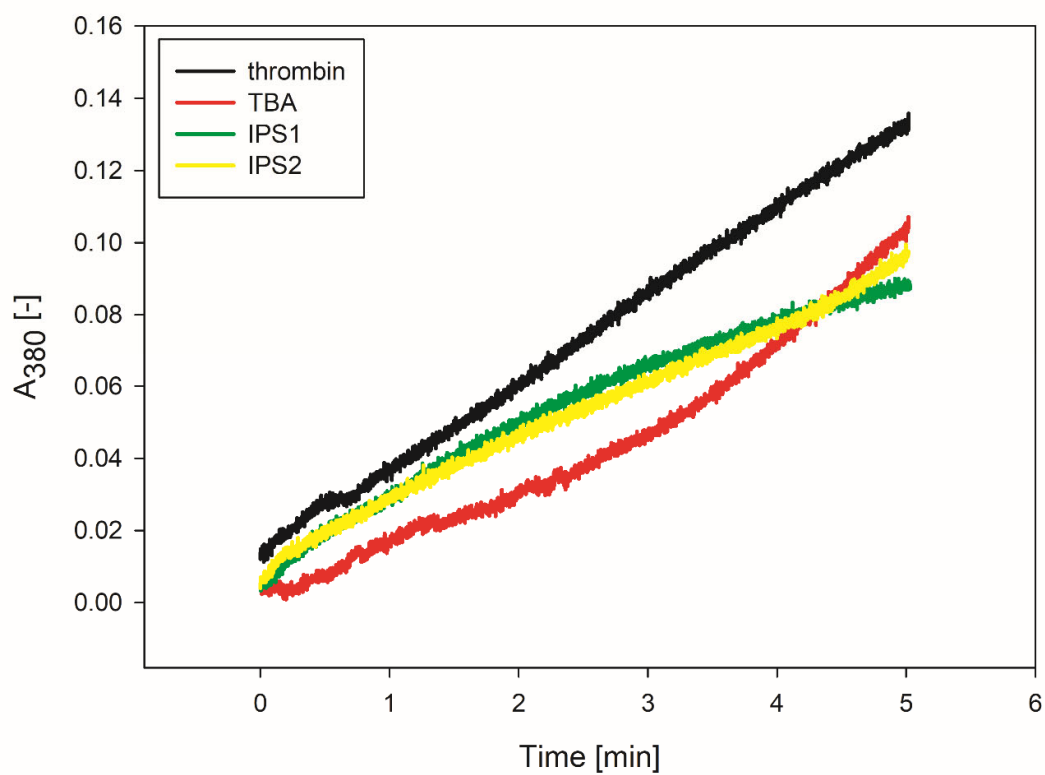
**Figure S1.** CD spectra of studied oligonucleotides in the presence of Na<sup>+</sup> (A) and NH<sub>4</sub><sup>+</sup> (B). Conditions: 10 mM Tris-HCl (pH = 8.0), 100 mM salt (NaCl or NH<sub>4</sub>Cl), 2  $\mu$ M DNA.



**Figure S2.** CD spectra of studied oligonucleotides prepared by slow (black) or fast cooling (red) for TBA (A), IPS1 (B) and IPS2 (C). Conditions: 10 mM Tris-HCl (pH = 8.0), 100 mM KCl, 2  $\mu$ M DNA.



**Figure S3.** Effect of thrombin on catalytic activity of DNAzymes in the reaction of ABTS oxidation by hydrogen peroxide. Conditions: 10 mM Tris-HCl (pH=8.0), 100 mM KCl, NaCl or  $\text{NH}_4\text{Cl}$ , 0,0016% Triton X-100, 1  $\mu\text{M}$  DNA, 1  $\mu\text{M}$  hemin, 10 nM thrombin, 1 mM ABTS, 1 mM  $\text{H}_2\text{O}_2$ .



**Figure S4.** Change of absorbance at 480 nm with time in the reaction of fibrinogen to fibrin catalyzed by thrombin and inhibition effect of TBA, IPS1 and IPS2 oligonucleotides.