**Supplementary Information**

# Title: N-terminal Autoinhibitory Module of A1 Domain in von Willebrand Factor Stabilizes the Mechanosensor Catch Bond

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**Figure S1~S2**

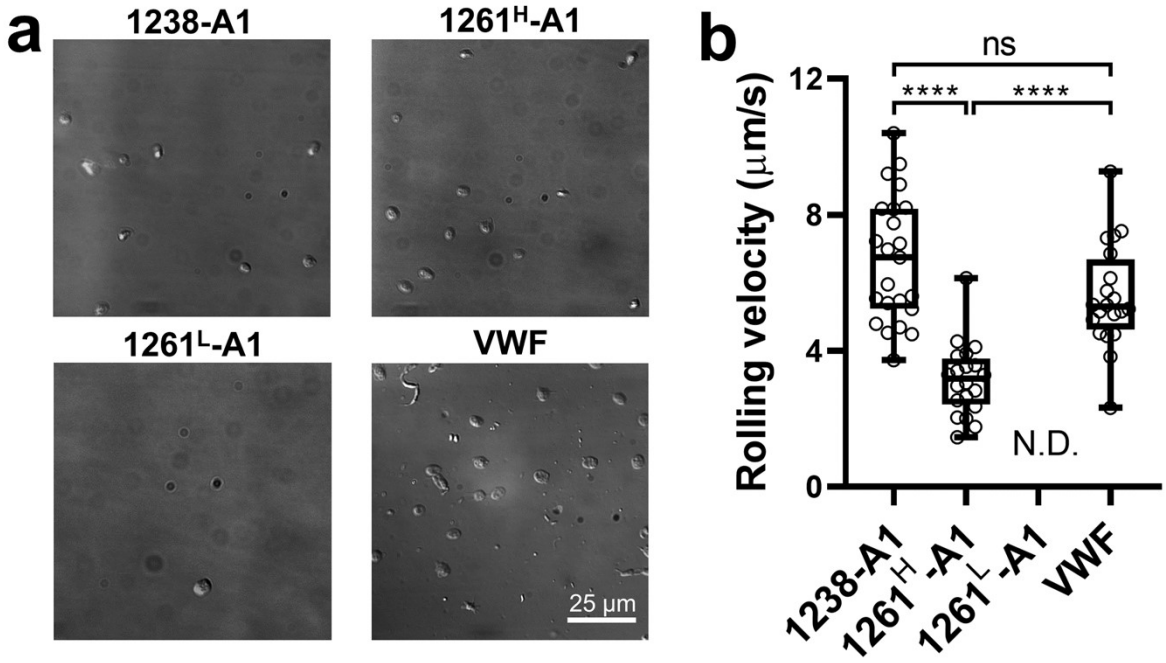


**Figure S1. Platelet tethering on the surface of flow chamber coated with VWF-A1 variants or full-length VWF.** a) Representative snapshots of tethered platelets (bright white objects) in a microfluidic channel, at fixed wall shear rate $\gamma$ = 800 $s^{-1}$, pre-coated with 1238-A1, $1261^{H}$-A1, $1261^{L}$-A1 or full-length plasma VWF. The photomicrographs depict the platelets tethered and were rolling on the surface during perfusion and each represents experiments with two different platelet donors. b) Platelets rolling velocity (n≥20) during perfusion. Data were presented as box plots. N.D. = not detectable. **** = $p < 0.0001$; ns = not significant, assessed by unpaired, two-tailed Student's *t*-test.

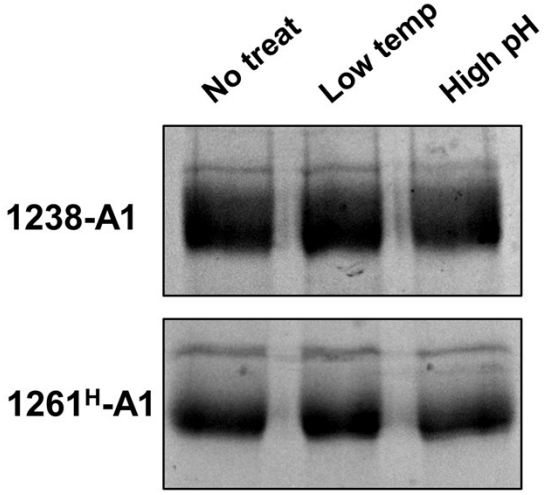


**Figure S2. 1238-A1 and 1261$^{H}$-A1 with indicated environmental factors were analyzed under reducing condition by SDS-PAGE (12.5%) and Coomassie Blue staining.**