

Delicate interactions between plasma factors and blood cells affect thrombin generation

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Delicate interactions between plasma factors and blood cells affect thrombin generation

Jun Wan

1. A thrombin generation assay that includes circulating blood cells can give a more comprehensive assessment of blood coagulability than conventional plasma tests. (*this thesis*)
2. Coagulation profiling in patients with cirrhosis requires assessment of the pro-coagulant pathways, the anticoagulant pathways, and the involvement of blood cells. (*this thesis*)
3. High erythrocyte count exhibits prothrombotic effect through a direct augmentation of thrombin generation and indirectly via impairment of the protein C pathway anticoagulant function. (*this thesis*)
4. Instead of perturbations in plasmatic coagulability, HIV-induced endothelial activation and inflammation are the most possible prothrombotic driver in people living with HIV. (*this thesis*)
5. Thrombomodulin-modified thrombin generation could serve as an intermediate phenotype to discover genetic variations associated with coagulation disorders. (*this thesis*)
6. Whole blood thrombin generation is a big step towards the development of a point of care thrombin generation test that may push forward personalized medicine and benefit the under-developed communities that suffer the most from the lack of laboratory resources (*this thesis -impact paragraph*)
7. Localization determines the fate of coagulation factors: activated coagulation factors tend to express their activity on or very near the surface on which they are activated and are also protected from protease inhibitors in plasma. (modified from *Hoffman and Monroe, Thrombosis and Haemostasis 2001*)
8. Genetic risk factors for venous thromboembolism are not restricted to the coagulation or anticoagulation pathways (*F2, F5, SERPINC1, PROC, and PROS1* genes), recent large genome wide association studies also added several novel loci involved directly or indirectly in platelet biology, erythrocyte biology or inflammation. (modified from *Zöller et al, Expert Review of Hematology 2020*)
9. Tell me and I forget; Show me and I remember; Involve me and I understand. (Xunzi) 不闻不若闻之，闻之不若见之；见之不若知之，知之不若行之；学至于行而止矣。 - 《荀子》
10. Enlightenment comes when we do not attach to anything. (the Diamond Sutra) 应无所住而生其心 - 《金刚经》)