



Universiteit
Leiden

The Netherlands

**The unique procoagulant adaptations of
pseudonaja textilis venom factor V and factor X**
Schreuder, M.

Citation

Schreuder, M. (2022, September 22). *The unique procoagulant adaptations of pseudonaja textilis venom factor V and factor X*. Retrieved from <https://hdl.handle.net/1887/3464432>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/3464432>

Note: To cite this publication please use the final published version (if applicable).

Stellingen behorende bij het proefschrift

**The Unique Procoagulant Adaptations of
Pseudonaja Textilis Venom Factor V and Factor X**

1. The dissociation of the factor Va A2 domain following proteolysis by activated protein C is a consequence of the loss of interaction between the A1 and A2 domains – this thesis
2. The factor Va A2 domain C-terminus contributes to anionic lipid surface-dependent conversion of prothrombin by factor Xa. In *Pseudonaja textilis* venom factor Va this region has been adapted to facilitate lipid-independent prothrombin conversion by *Pseudonaja textilis* venom factor Xa – this thesis
3. The activation peptide of *Pseudonaja textilis* venom factor X is modified to shift the conformational equilibrium of factor X towards a more active state, resulting in significant catalytic activity while in zymogen form – this thesis
4. A single amino acid substitution can change a protein's characteristics and could provide valuable opportunities for the development of novel therapeutic agents – this thesis
5. Proteins do not adopt a single functional conformation but exhibit conformational flexibility resulting in multiple protein states with different characteristics – Toso et al., *J Biol Chem* 2008; Butera et al., *Nat Commun*, 2020
6. With safety concerns remaining regarding the use of andexanet alfa as antidote for direct factor Xa-related major bleeding, factor X-C and F174-substituted factor X variants may potentially provide an alternative specific reversal strategy – Ersayin et al., *Haematologica*, 2017; Connolly et al., *N Engl J Med* 2019
7. Venoms are a valuable source of biological information with significant clinical potential – Waheed et al., *Curr Med Chem*, 2017
8. Used throughout several decades of research, biochemistry remains a compelling tool for fundamental and translational research – Muczynski et al., *Semin Thromb Hemost*, 2017
9. The workload among academic researchers and staff continues to rise resulting in structural overtime and a very high work pressure. This not only affects the education of students but also the future of academic research with more and more talented researchers choosing a career elsewhere – *Werkdruk Universiteiten, FNV and VAWO* 2019