

High throughput assessment of platelet signaling, function and inhibition

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Propositions belonging to the dissertation:

High throughput assessment of platelet signaling, function and inhibition

1. High throughput measurements of Ca^{2+} fluxes are suitable for discovering inhibitors of receptor-induced platelet activation (This thesis).
2. Predictive *in silico* methods can reduce the costs and time frame of the process of drug development, but need to be supplemented with validation studies (This thesis).
3. Pharmacological studies using human platelets can overcome the megakaryocyte developmental defects observed in knockout mice (This thesis).
4. Multiparameter microfluidic assays of whole-blood thrombus formation provide added insight into the hemostasis process of patients with a familial history of bleeding (This thesis).
5. Microfluidic whole-blood tests are coming one step closer towards implementation in the clinical setting (This thesis, impact).
6. *In vitro* models that incorporate human blood flow can improve translatability and may one day replace *in vivo* experiments presently performed in thrombosis research (Berry, *Lab on a Chip* 2021)
7. Understanding the complex interplay between activatory and inhibitory signaling networks is an emerging challenge in the study of platelet biology, and necessitates a systematic approach to utilize experimental data effectively (Bye, *J Thromb Haemost* 2016).
8. Next-generation sequencing technologies have identified novel genes related to inherited bleeding disorders, but future research using computational and experimental tools will have to reveal their biological role (VerDonck, *Res Prac Thromb Haem* 2021)
9. Science is a collaborative effort that requires multiple perspectives for success; don't aim to achieve everything on your own.
10. Translational research is a long process, think of the bigger picture and of the patients to avoid losing sight of why it is worth.
11. One never notices what has been done, one can only see what remains to be done. (Marie Curie & Delia Fernández).

Delia Irene Fernández de la Fuente, June 19, 2023