Targeting GPVI

Propositions belonging to the dissertation:

Targeting GPVI:
impact of modulating platelet-collagen interactions on
receptor signaling and thrombus formation

by Natalie J. Jooss

1. Platelet receptor engagements differ considerably between purified collagen preparations and atherosclerotic plaque homogenates. These differences affect study outcomes, aimed to investigate collagen-mediated platelet activation. (This thesis)

2. Regardless of the modes of action, drugs interfering in the collagen binding to glycoprotein VI (GPVI) decrease platelet activation and subsequent thrombus formation. (This thesis)

3. Anti-GPVI nanobodies are promising tools to both inhibit and visualize platelet GPVI. (This thesis)

4. The clustering of GPVI is related to an increased flow-dependent thrombus formation and platelet procoagulant activity, thus adding more evidence to the notion that GPVI cluster formation is of significance *in vivo*. (This thesis)

5. The Maastricht flow chamber provides an excellent proxy method for *in vivo* thrombus formation. (Nagy *et al.* 2019, Baaten *et al.* 2018)

6. Since the loss of platelet GPVI associates with only minor bleeding events, the receptor is a promising target for the development of novel anti-thrombotic medication. (Jandrot-Perrus *et al.* 2019 and Lockyer *et al.* 2006)

7. Collagen-like peptides are reliable tools to investigate the roles of platelet collagen receptors GPVI and α2β1 in a controlled way. (Munnix *et al.* 2008, de Witt *et al.* 2014 and Pugh *et al.* 2017)

8. The bleeding side effects of current anti-thrombotics warrant further clinical investigations of GPVI inhibition to combat (athero)thrombosis. (This thesis, valorization)

9. Science is never done, but this thesis is! (A good friend)

10. Normality is a paved road: it's comfortable to walk, but no flowers grow. (Vincent van Gogh)

11. Do the little things right, and the big ones take care of themselves. (Emily Dickinson)

Natalie J. Jooss, 16th of February 2023