Case Study: PROTEOMICS - MASS SPECTROMETRY 1

Research Question

Uncovering new diagnostics for preeclampsia.

Our Approach

The biomarkers underlying AI_PREMie were discovered by combining our world-leading expertise in platelet biology together with cutting edge mass spectrometry techniques available in the UCD Conway Proteomics Core. This enabled us to uncover useful diagnostic information from small volumes of blood. Using this platform, we have found biomarkers that could accurately differentiate pregnancies affected by preeclampsia from healthy pregnancies, providing valuable biomarkers that could both determine preeclampsia and predict the future severity of maternal outcome.

Resulting Publication: Coppinger et al., Characterization of the proteins released from activated platelets leads to localization of novel platelet proteins in human atherosclerotic lesions. *Blood*, 2004. 103(6): p. 2096-2104.

Parsons et al., Platelet releasate proteome profiling reveals a core set of proteins with low variance between healthy adults. *Proteomics*, 2018. 18(15): p. 1800219.

Szklanna et al, The platelet releasate is altered in human pregnancy. *Proteomics - Clinical Applications*, 2019. 13(3): p. 1800162

Expertise:

We offer the dedicated strategic support of our expert team, both before mass spectrometry (sample preparation and separation) and after (data analysis, bioinformatics) to enable our research and commercial partners to take full advantage of their results.

Testimonial

"The support of Gerard and his team has been a crucial factor in the success of the UCD ConwaySPHERE team in terms of the constant development and optimisation of mass spectrometry approaches for uncovering relevant new biomarkers of disease from human blood".

Professor Patricia Maguire
Co-Director, UCD ConwaySPHERE
UCD School of Biomolecular & Biomedical Science & UCD Conway Institute

Professor Fionnuala Ní Áinle
Co-Director, UCD ConwaySPHERE
UCD School of Medicine, Mater Misericordiae University Hospital & UCD Conway Institute

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