MEDIA RELEASE

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From: Bill Lane, Media Manager, Mercy Health

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A new protein to predict pregnancies at risk of stillbirth

In an exciting discovery, researchers at Mercy Hospital for Women (and the University of Melbourne) have discovered a novel protein measurable in the bloodstream that could predict which women are at risk of stillbirth.

Stillbirth is a devastating tragedy that claims 1 in every 130 pregnancies in Australia. This means that every single day, 6-7 families lose their baby to stillbirth.

One of the leading causes of stillbirth is a poorly functioning placenta; the life support system that provides oxygen and nutrients to a growing baby. The first sign that a placenta may be failing is poor growth of the baby, or fetal growth restriction. A poorly grown fetus is at 3-4 times increased risk of being born still compared to a well grown fetus.

By screening proteins released directly from the placenta into the mother's bloodstream, researchers at Mercy Hospital for Women have discovered a novel protein called SPINT1 as a new biomarker of poorly grown babies.

It is well established that the risk of stillbirth increases at the end of pregnancy; a time at which expedited delivery of an at risk baby would invariably result in a live birth. Focussing on blood samples collected from pregnant donors towards the end of pregnancy (36 weeks' gestation) the Mercy team has shown that SPINT1 levels are significantly reduced in women carrying a small baby. Importantly, they have validated this find in a cohort of samples from the UK.

Remarkably, SPINT1 has considerably stronger associations with several indicators of poor placental function than previously reported biomarkers, and may be the first candidate in a new blood test tool-box to predict women at risk of stillbirth

Lead author of the study, Principal Research Scientist A/Prof Tu'uhevaha Kaitu'u-Lino said 'SPINT1 is the first of many novel proteins that we are studying. Ultimately we plan to use artificial intelligence to produce a sophisticated multi-marker blood test that could be offered to women here in Australia and around the world'.

Dr Teresa MacDonald the clinical lead on the paper said, 'A blood test that helps health care providers better detect poorly grown babies could dramatically reduce the burden of stillbirth, a devastating outcome that prematurely ends around 3 million pregnancies globally every year.'

The team have just published these findings in the prestigious international scientific journal Nature Communications.

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collaborated with the Austin Health, The University of Cambridge, UK and The University of Manchester, UK.

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