

PREMMIE MYSTERY SOLVED

GRANT McARTHUR

MELBOURNE researchers have found the mechanism behind a fatal disease in premature babies, opening up the chance of new drugs to save the most fragile lives.

The find provides opportunities for new drugs to prevent necrotising enterocolitis – commonly known as NEC.

The team from the Hudson Institute, Monash Health and Monash University found tiny molecules that become unbalanced in the 10 per cent of preemie babies suffering NEC, a condition that is fatal in 20 to 30 per cent of cases.

The researchers found levels of a protein called IL-37 – which helps prevent inflammation – were low in babies suffering NEC.

Associate Professor Claudia Nold said that by boosting levels of IL-37 the team had prevented the deadly inflammation in the laboratory and during animal testing, though human trials were still a long way off.

“By understanding the



Brendan and Christy O'Brien with their baby Willow, who arrived prematurely this year. Picture: ROB LEESON

disease more, we have opened up new opportunities for new drugs like IL-37, but also existing drugs,” Prof Nold said.

The Melbourne research, published in *Nature Communications*, identified a range of cytosines, small molecules that regulate immune function.

One responsible for

triggering inflammation, known as IL-36, was found to be elevated in NEC babies.

IL-36 is also involved in triggering the skin condition psoriasis, for which a range of drugs are available.

While the links between the two conditions are not established, co-lead researcher Professor Marcel Nold said work would now

focus on “repurposing” psoriasis medications to see if they were suitable for NEC.

Having seen their tiny daughter Willow have to fight NEC after being born at 24 weeks on March 2, Christy and Brendan O'Brien are hopeful other families will be spared the trauma.

Of those babies requiring bowel surgery to overcome

NEC only a third survive. Fortunately, Willow made it through two operations at Monash Children's Hospital.

“Terrifying doesn't come close to the feeling that you have,” Mr O'Brien said.

“It's fantastic the results have given a new avenue for investigation that just wasn't there for us – we just had to hope she survived.”