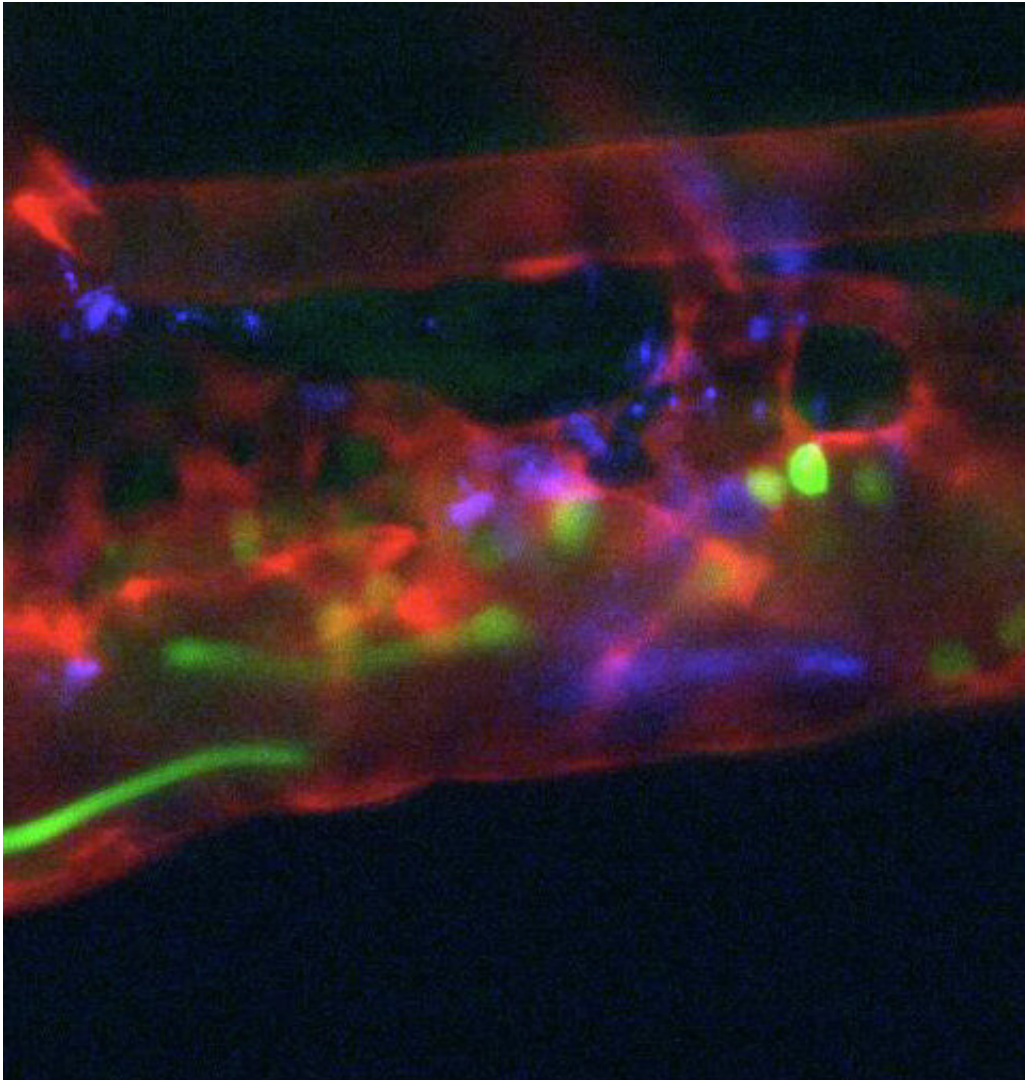


Aspirin to fight an expensive global killer infection

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Green platelets zooming around the vasculature of a zebrafish. Credit: Centenary Institute

Research led by the Centenary Institute in Sydney has found a brand new target for treating drug-resistant tuberculosis; our scientists have uncovered that the tuberculosis bacterium hijacks platelets from the body's blood clotting system to weaken our immune systems.

Tuberculosis is far from eradicated around the world and still infects more than 1,400 people per year in Australia. Antibiotic resistant tuberculosis is particularly deadly and expensive to treat, costing up to \$250,000 to treat a single case in Australia. Scientists at the Centenary Institute have been working on new ways to treat tuberculosis by increasing the effectiveness of the [immune system](#).

Using the zebrafish model of tuberculosis, the researchers used fluorescent microscopy to observe the build-up of clots and activation of platelets around sites of [infection](#). Senior author and head of the Centenary's Immune-Vascular Interactions laboratory, Dr. Stefan Oehlers, says "the zebrafish gives us literal insight into disease processes by watching cells interacting in real time".

Following their hunch that these platelets were being tricked by the infection into getting in the way of the body's immune system, the researchers treated infections with anti-platelet drugs, including widely available aspirin, and were able to prevent hijacking and allow the body to control infection better.

Dr. Elinor Hortle, lead author of the paper published in *The Journal of Infectious Diseases*, and Research Officer in Centenary's Immune-Vascular Interactions laboratory says "This is the first time that platelets have been found to worsen tuberculosis in an animal model. It opens up the possibility that anti-[platelet](#) drugs could be used to help the immune system fight off drug resistant TB".

There are over 1.2 million Australians living with latent tuberculosis, a

non-infectious form of TB that puts them at risk of developing the active disease. "Our study provides more crucial evidence that widely available aspirin could be used to treat patients with severe [tuberculosis](#) infection and save lives," says Dr. Hortle.

More information: Elinor Hortle et al, Thrombocyte inhibition restores protective immunity to mycobacterial infection in zebrafish, *The Journal of Infectious Diseases* (2019). [DOI: 10.1093/infdis/jiz110](https://doi.org/10.1093/infdis/jiz110)

Provided by Centenary Institute

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