

Antibody's hidden impact in combating malaria revealed

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Burnet Institute Head of Malaria Immunity and Vaccines Laboratory, Professor James Beeson. Credit: Burnet Institute

A major collaborative study led by Burnet Institute researchers has revealed a particular antibody to be far more influential in combating malaria than previously understood, with important implications for the development of an effective vaccine.

Antibodies are proteins in the blood produced by the immune system to fight infection.

The antibody type called IgM was widely thought to play only a cameo role in the [immune response](#) to [malaria](#) by activating initially before disappearing when the leading antibody—called IgG—takes over.

But the new research, published in the journal *Science Advances*, shows IgM acts as a co-lead with IgG to block and clear malaria infection in the blood.

"The research team was able to show that IgM can persist for long periods to sustain the fight against malaria," study senior author, and Burnet Institute Head of Malaria Immunity and Vaccines Laboratory, Professor James Beeson said.

"Importantly, the study showed that IgM can stick to malaria in the blood, kill it, and block malaria from infecting red blood cells and replicating within them.

"The next step is to better understand why the immune system generates IgM [antibodies](#) in response to malaria infection, rather than just relying on IgG antibodies, and determine whether vaccines that stimulate the [immune system](#) to produce IgM antibodies give better protection against malaria."

Malaria is a leading cause of death and disease globally, and an effective vaccine is needed to eliminate the disease.

The researchers hope that this new insight will help take them a step closer to developing high protective vaccines.

More information: M. J. Boyle et al. IgM in human immunity to *Plasmodium falciparum* malaria, *Science Advances* (2019). [DOI: 10.1126/sciadv.aax4489](#)

Provided by Burnet Institute

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