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Scientists closely outsmarting malaria parasites

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Malaria parasite is really good at mutating certain proteins to evade the killing effects of the drugs



Researchers from the Australian National University (ANU) have discovered why malaria parasites are vulnerable to some drug therapies but resistant to others, offering scientists another piece of the puzzle in the global fight against the disease.

The ANU team has characterised two malaria proteins, known as PfMDR1 and PfCRT, that work together to transport drugs away from areas where they exert their killing effect and concentrate them in "safe zones" that ultimately render the treatments ineffective.

The findings could lead to new and longer-lasting treatments for malaria - a disease that killed an estimated 627,000 people worldwide in 2020.

According to Dr Sarah Shafik from the ANU Research School of Biology certain anti-malarial treatments are only effective at eradicating the disease if the drugs are located inside the stomach of the parasite. Other treatments are most effective when located outside of the stomach.

The discovery could lead scientists to develop new treatments or repurpose existing drugs to create new combination therapies that directly target the PfMDR1 and PfCRT proteins and prevent the parasites from outsmarting the drugs.

Although the disease can be successfully treated with drugs, malaria parasites are continually adapting and building resistance to current treatments, allowing them to evade death and stay one step ahead of scientists.