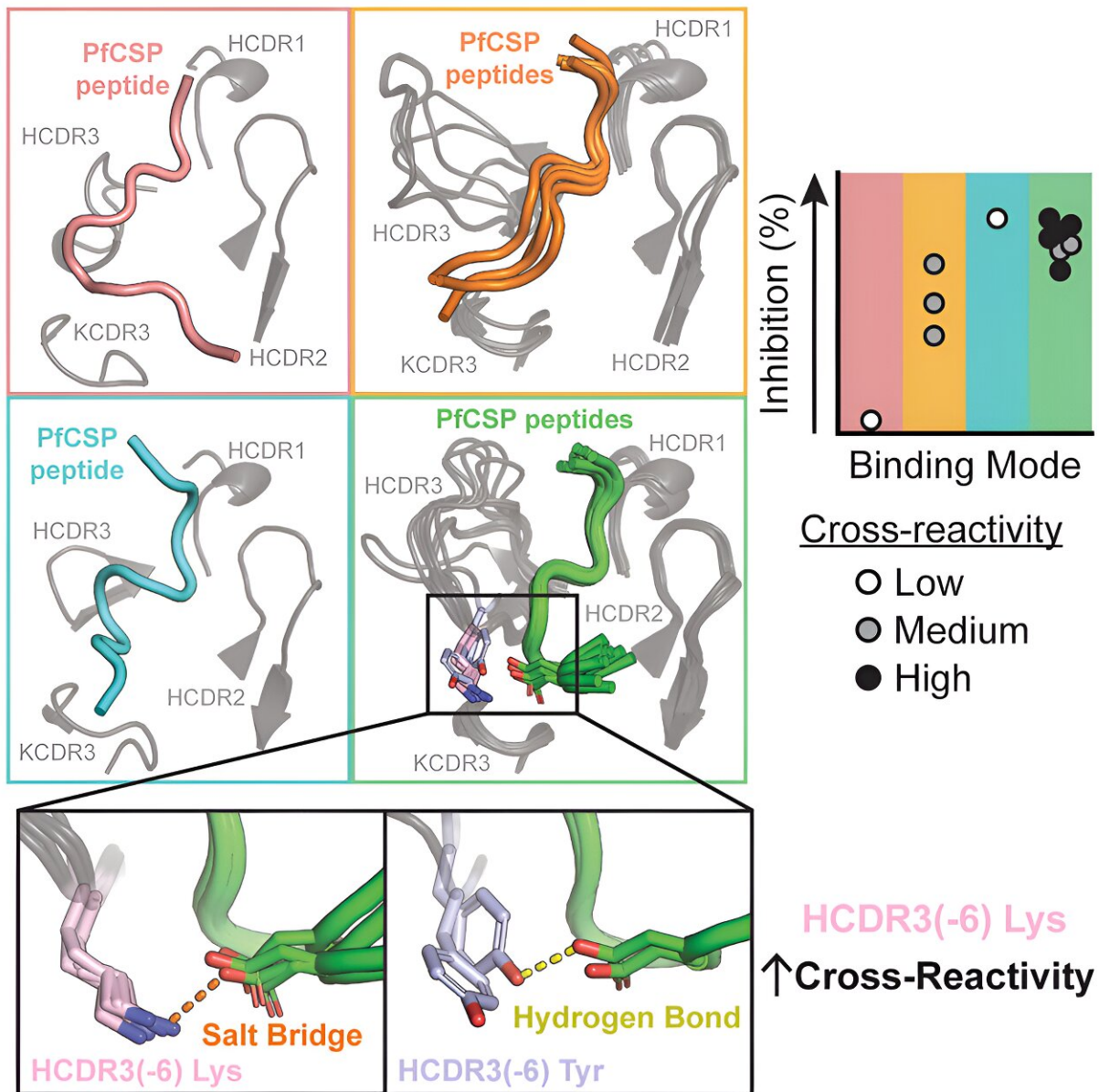


New hope for fighting malaria: Decoding human antibodies

November 27 2023, by Victoria Martinez



Graphical abstract. Credit: *Cell Reports* (2023). DOI: 10.1016/j.celrep.2023.113330

Researchers from The Hospital for Sick Children (SickKids) recently decoded how human antibodies protect us from the malaria parasite, which kills more than 600,000 people worldwide annually. The CMCF facility at the Canadian Light Source at the University of Saskatchewan helped them identify the precise structures involved in identifying and fighting off the disease.

"The key question that we hoped to address was what made a protective antibody protect? What makes it tick, what makes it better than some that might not be so protective and might not be so potent?" says SickKids researcher Elaine Thai.

They were able to see that protective antibodies lock on to a vulnerable point on the [malaria parasite](#) in a specific form, making it easier to neutralize the infection.

The results, [published](#) in *Cell Reports*, point to a way forward to better treatments and vaccines.

While there are two vaccines approved today, they can only be used on the very young, have limited protective power, and the effects fade over time. Researchers can take the maps created by projects like this to engineer better tools for health care.

Thai enjoys the excitement of identifying the tiny molecules involved in human health, but it's the larger purpose that drives her.

"When I think about the implications of this research, it feels like I have

the potential to build on something that's bigger than myself. That potential to contribute gave me a guiding purpose," she explains.

More information: Elaine Thai et al, Molecular determinants of cross-reactivity and potency by VH3-33 antibodies against the Plasmodium falciparum circumsporozoite protein, *Cell Reports* (2023). [DOI: 10.1016/j.celrep.2023.113330](https://doi.org/10.1016/j.celrep.2023.113330)

Provided by Canadian Light Source

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