

How *Toxoplasma gondii* gets noticed

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Researchers provide insight into how *Toxoplasma gondii*, a common parasite of people and other animals, triggers an immune response in its host. The report will appear online on January 19th in *The Journal of Experimental Medicine*.

A strong immune response spares *T. gondii*-infected hosts from deadly infection—an event that may also benefit the parasite, which relies on survival of the host to ensure its own transmission. But how the infected host elicits an immune response isn't completely understood. Like many other parasites, *T. gondii* resides within specialized vesicles inside infected host cells, but the process by which peptides from the trapped bugs are processed by infected cells and presented to killer T cells is mysterious.

Here, Romina Goldszmid and her colleagues at the National Institutes of Health in Bethesda use *T. gondii* infections in mice to study how portions of the parasitic proteins escape the vesicle in a process known as cross-presentation. They find that the parasite gets noticed by the immune system when the membrane of the bug-containing vesicle fuses to the endoplasmic reticulum—an organelle normally involved in presenting pathogens to T cells—allowing a swap of parasitic peptides.

Source: Rockefeller University

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