

Novel treatment protects mice against malaria; approach may work in humans as well

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Malaria is a major global health concern, and researchers are in need of new therapeutic approaches. To address this concern, a study published Oct. 26 in the online journal *PLoS ONE* reveals new information about the host cell's treatment of the parasite that causes the disease in mice, opening potential new avenues for research and treatment.

The new work, led by Hernando del Portillo of the Barcelona Centre for International Health Research, used a mouse model of malaria infection to detect parasite proteins in small vesicles produced by a variety of [mammalian cells](#) called exosomes.

These vesicles had recently been shown to be involved in the immune response to a number of infections, and therefore of potential interest for [therapeutic approaches](#), but their connection to malaria had not been previously investigated.

In the new study, the researchers found that reticulocyte-derived exosomes (rex) are involved in the [malaria infection](#), and they also showed that rex containing parasite proteins could be used to immunize mice, resulting in full protection upon lethal infections in 85% of the animals. While the work up to this point has been limited to a mouse model of the malaria parasite, the authors suggest that the results present new possible directions for the development of novel anti-malaria treatments, specifically against the human malaria parasite *P. vivax*

which has a unique cell tropism for reticulocytes, the original cells where exosomes were discovered.

More information: Martin-Jaular L, Nakayasu ES, Ferrer M, Almeida IC, del Portillo HA (2011) Exosomes from Plasmodium yoelii-Infected Reticulocytes Protect Mice from Lethal Infections. PLoS ONE 6(10): e26588. [doi:10.1371/journal.pone.0026588](https://doi.org/10.1371/journal.pone.0026588)

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