

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.

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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.

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