Proteomics

Proteomics and systems biology

Mass spectrometric analysis of *Plasmodium falciparum* erythrocyte membrane protein-1 variants expressed by placental malaria parasites

Michal Fried Jason P. Wendler Theonest K. Mutabingwa Patrick E. Duffy

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Abstract

Surface proteins from *Plasmodium falciparum* are important malaria vaccine targets. However, the surface proteins previously identified are highly variant and difficult to study. We used tandem mass spectrometry to characterize the variant antigens (*Plasmodium falciparum* erythrocyte membrane protein 1 (PfEMP1)) expressed on the surface of malaria-infected erythrocytes that bind to chondroitin sulfate A (CSA) in the placenta. Whereas PfEMP1 variants previously implicated as CSA ligands were detected, in unselected parasites four novel variants were detected in CSA-binding or placental parasites but not in unselected parasites. These novel PfEMP1 variants require further study to confirm whether they play a role in placental malaria.