Characterization of the PfEMP1 - endothelial cell receptor CD36 interaction and its role in the pathogenesis of severe malaria

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Abstract

This investigation aimed to select and isolate the DBL1 and CIDR1 domains of PfEMP1 expressed by the P. falciparum parasite which are known to bind to the endothelial cell receptor CD36. The PF08_0106 DBL1 gene that codes for the DBL1 domain of PfEMP1 was amplified using PCR, its size was verified using gel electrophoresis, quantified and the gene containing the targeted domains was ligated into protein expression vector pET28b+ and transformed into E. coli. After comparing the nucleotide sequence of the P08_0106 DBL1 gene with the expected alignment, it was not aligned and thus, the CIDR1 domain, which had been successfully aligned in previous research, proceeded to transformation into E. coli expression cells (Rosetta). CIDR1 was purified and underwent a protein gel electrophoresis and will be used to immunize rats to acquire a specific antibody response that can be used for future work in purifying the further characterization of the PfEMP1-CD36 interaction both in vivo and in vitro.