INMUNOLOGIC STUDIES
A study of cellular markers of immunity and susceptibility to malaria in individuals exposed to *Plasmodium falciparum* infection

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**Background:**
Although the age- and exposure-dependent epidemiological pattern of immunity is quite well established, the underlying mechanisms of immunity against malaria remain unclear. It is known that antibodies are important effector mechanisms during blood stage natural infections, but the role of cellular responses in naturally acquired immunity has not been well defined, although they may have an important role in the induction of protective immunity.

**Aim:**
To identify cellular immune responses against *P.falciparum* which could be used as markers of immunity and/or susceptibility against malaria in individuals naturally exposed to the infection. Specifically, markers of severe malaria in children, clinical immunity in children and adults and placental malaria in pregnant women.

**Methods:**
- Blood samples from six studies conducted in Mozambique and/or Barcelona which were designed to investigate immunity and pathogenesis against malaria from different perspectives
- Measurement of Th1 and Th2 cytokine/chemokine concentrations in plasma by flow cytometry using Bender kits (IL-12p70, IL-2, IFN-γ, IL-10, IL-8, IL-6, IL-5, IL-4, IL-1β, TNF-α and TNF-β)

**Results:**

![Graphs showing cytokine levels in malaria and non-malaria conditions](image1)

**Necessitats:**
Volem poder evaluar els resultats obtinguts fins ara mitjançant mètodes d'Anàlisi Multivariant com son l'Anàlisi Clúster i/o l'Anàlisi de Components Principals.

Les possibles classificacions obtingudes amb aquests mètodes ens poden permetre trobar famílies de antigèns, proteïnes i d'altres elements immunològics que ens ajudin a entendre el comportament de la malària.