1. Direct feeding assay (DFA)
   - Laboratory reared mosquitoes are fed on naturally exposed individuals.
   - Some ethical committees have expressed concerns about DFA especially when children are involved, others continue to approve use of DFA in adults.

2. Direct membrane-feeding assay (DMFA)
   - Blood samples drawn from naturally infected humans are used for membrane feeding of mosquitoes.
   - An advantage is it provides assessment of field derived parasite isolates.
   - Control results (a measure of inherent infectivity) are determined by replacing autologous plasma with non-immune serum prior to feeding.
   - The assay is difficult to standardize

3. Standard membrane feeding assay (SMFA)
   - Uses sera or purified immunoglobulins, in vitro cultured gametocytes, and laboratory strains of Anopheles mosquitoes.
   - It is valuable for both pre-clinical and clinical studies.
   - Threshold criteria (Go/No-Go) can be set.
   - Shortcomings include: limited sensitivity; variations in oocyst numbers between experiments; limited number of suitable cultured parasite strains. There is uncertainty about the relative importance of: percentage of individuals rendered non-infectious; percentage of mosquitoes rendered non-infectious after feeding; reduction of parasite numbers, and the relation between any of these measures and effects on transmission at population level.
   - Greater standardization is under investigation. The suggested output is a control/test ratio for each test to minimize effects of variability.

4. Non-clinical assays using transgenic rodent malaria parasites that express *P. falciparum* sexual stage genes[18].