



# TITLE



## **Antibodies to malaria vaccine candidates and chloroquine or sulfadoxine/pyrimethamine treatment efficacy in an endemic area of Burkina Faso**

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### **Acknowledgements and affiliations**

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- Department of Clinical Biochemistry, Statens Serum, Copenhagen, Denmark**
- Noguchi Memorial Institute for Medical Research, Legon, Ghana**

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# Objective

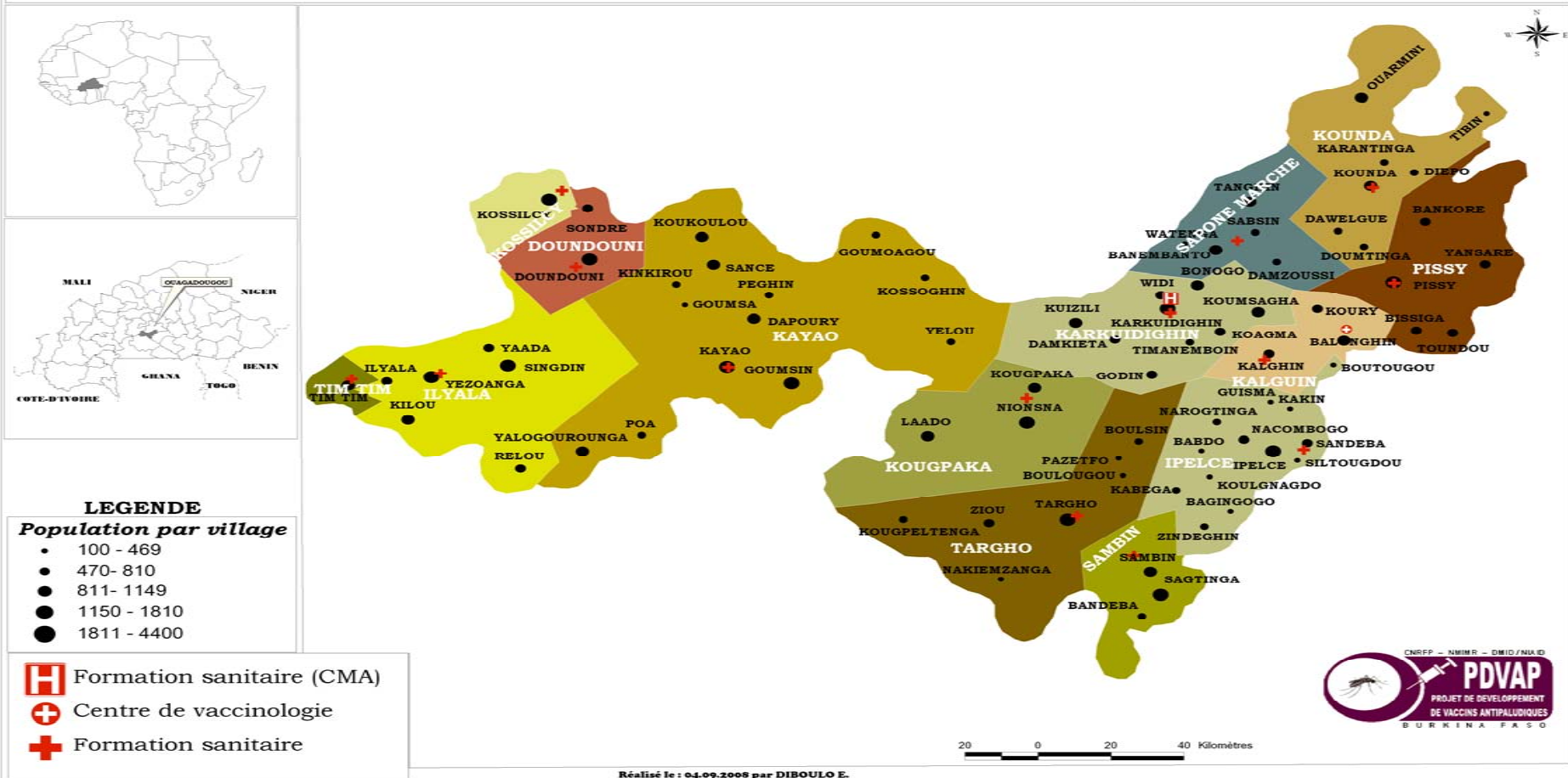


**Evaluate whether the therapeutic response was associated with any specific immune response, against a panel of malaria vaccine candidates**

# Methods (1)

## STUDY AREA




### AIRES SANITAIRES DU SYSTEME DE SUIVI DEMOGRAPHIQUE (SSD) DE SAPONE



#### LEGENDE

##### Population par village

- 100 - 469
- 470 - 810
- 811 - 1149
- 1150 - 1810
- 1811 - 4400

-  Formation sanitaire (CMA)
-  Centre de vaccinologie
-  Formation sanitaire



## Methods (2)



- Target population was children aged 0.5 to 15 years homozygote to AA
- 5 ml of venous blood was collected from each child prior to malaria high transmission season.
- Plasma was used to assess immune response (IgG, IgM and IgG subclasses) against MSP1-19, GLURP and MSP3 by ELISA
- Children were then actively follow up 12 months and treated with CQ or SP.



# Results (1)



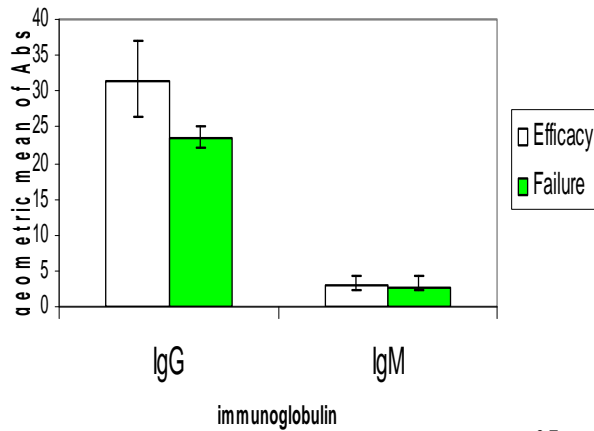
- **Drugs efficacy rates**

Response	Drugs	
	CQ	SP
<b>ETF</b> (early treatment failure)	27/195 (14%)	6/53 (11%)
<b>LTF</b> (Late treatment failure)	152/195 (78%)	27/53 (51%)
<b>ACPR</b> (Adequate clinical & parasitological response)	16/195 (8%)	20/53 (38%)

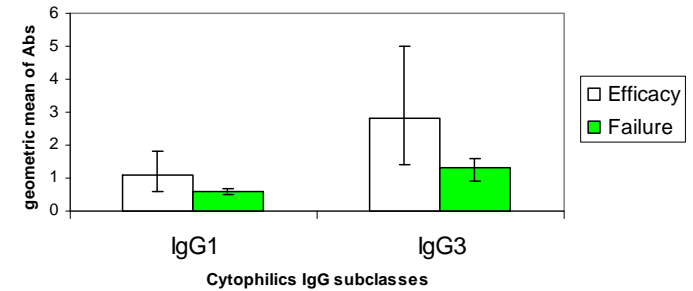
# Results (2)

- Antibodies response vs. drugs efficacy

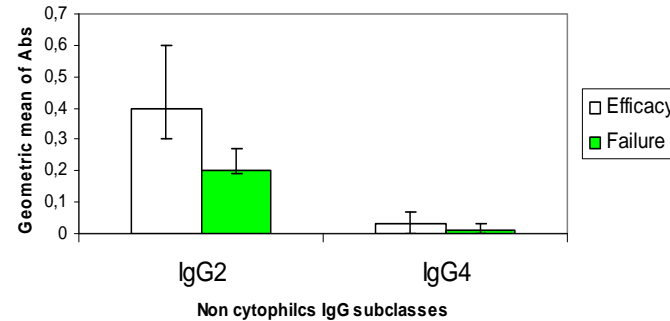
## MSP3



**TOTAL IgG&IgM**



**Cytophilic IgG**



**Non cytophilic IgG**

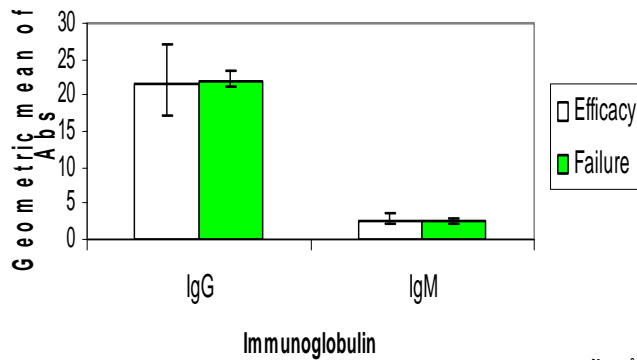


# Results (3)

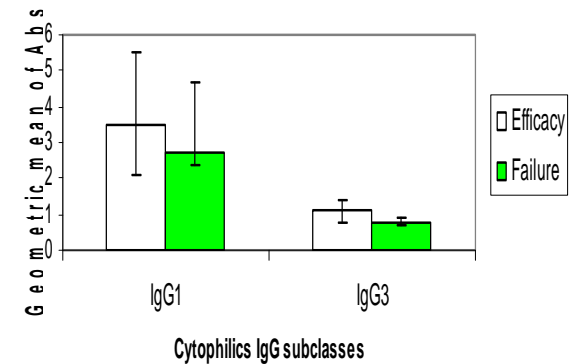


- Antibodies response vs. drugs efficacy

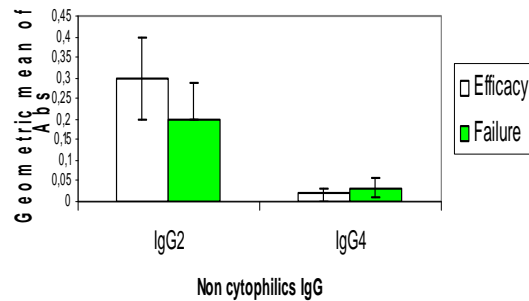
MSP1\_19



**TOTAL IgG&IgM**



**Cytophilic IgG**

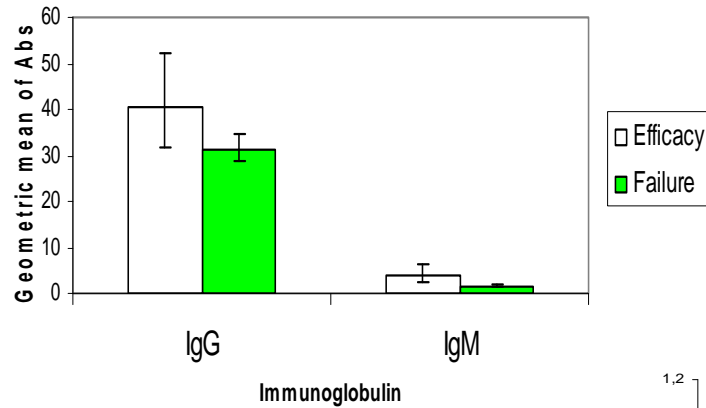


**Non cytophilic IgG**

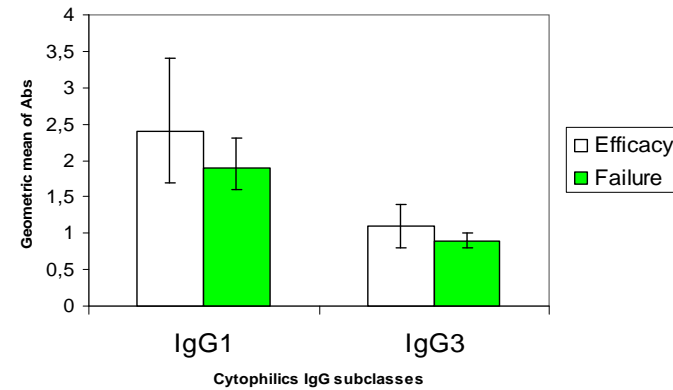
# Results (4)

- Antibodies response vs. drugs efficacy

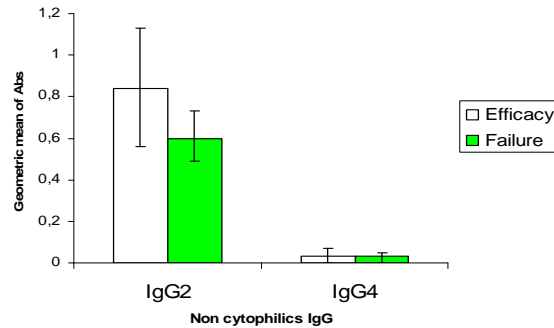
## GLURP



**TOTAL IgG&IgM**



**Cytophilics IgG**



**Non cytophilics IgG**



# Discussion & Conclusions



- In both treated groups, the level of total IgG to MSP3 and GLURP was always higher in the group of children who clear their parasites compare to those who failed;
- IgG subclasses to MSP3 shown a strong correlation with treatment efficacy
- This study showed a higher prevalence of drug failure for both drug regimens used for malaria treatment in Burkina Faso(92% for CQ and 62% for SP)
- Antibodies to MSP3 and GLURP could be used as Predictor of protection in endemic areas
- Confirmation of MSP3 and GLURP as malaria vaccine candidates



# Future perspectives



