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CYP2D6 and IL-6 C-174G variants in schistosomiasis haematobia

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Poster number 42

Aim

- Study polymorphic variants in CYP2D6 and the C-174G promoter polymorphism of the IL-6 gene on S. haematobium infected patients from and endemic area of Guinea Bissau.

Background

- Schistosome egg associated catechol estrogens induce tumor-like phenotypes in urothelial cells and might cause schistosomiasis associated infertility (Botelho et al, Trends in Parasitol, 2015).
- The cytochrome P450 (CYP) genes are involved in estrogen biosynthesis and metabolism and generation of DNA damaging procarcinogens (Blackburn et al, Cancer Causes and Control, 2015)
- Very high or very low levels of IL-6 are associated with estrogen metabolism imbalance (Prins et al, J Reprod Immunol, 2012).

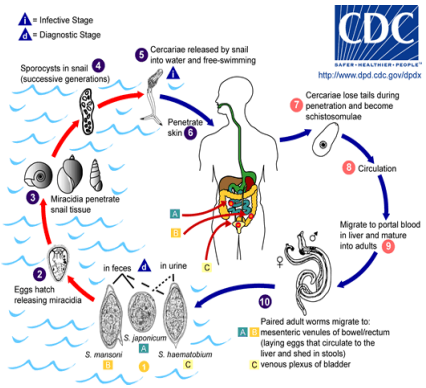

Fig. 1: *Schistosoma spp.* life cycle.

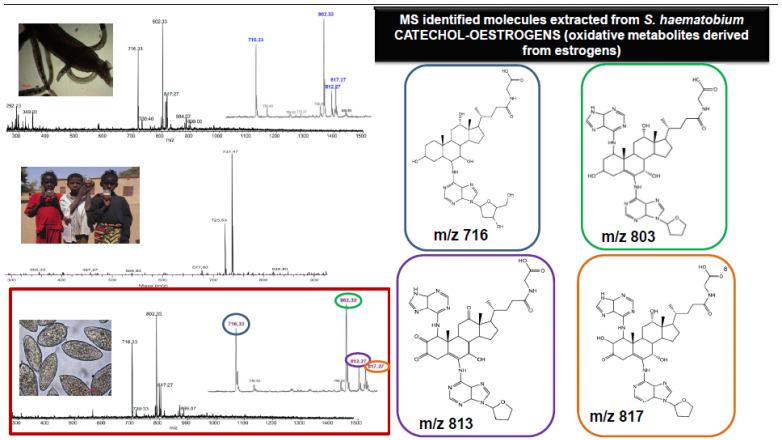

Fig. 2: Catechol-estrogens produced by *S. haematobium*

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Methological Strategy

42 infected patients → DNA was extracted from urine sediments → LightMix Kit of CYP 2D6 alleles *3, *4 and *5/*5 LightMix Kit of IL 6 G-174C → LightCycler 2.0 Instrument.

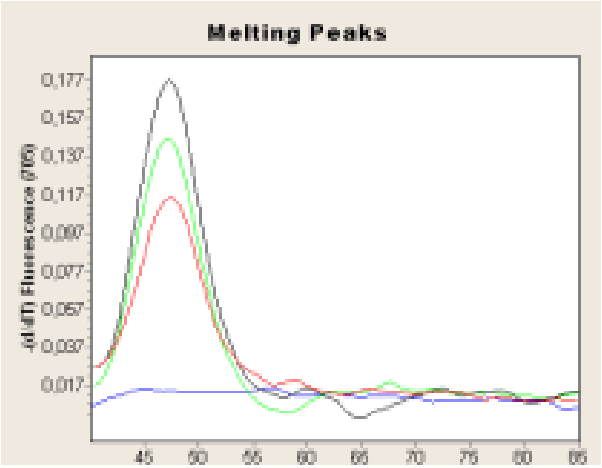

*Fig.3: Control samples melting peak for CYP2D6*5 deletion*

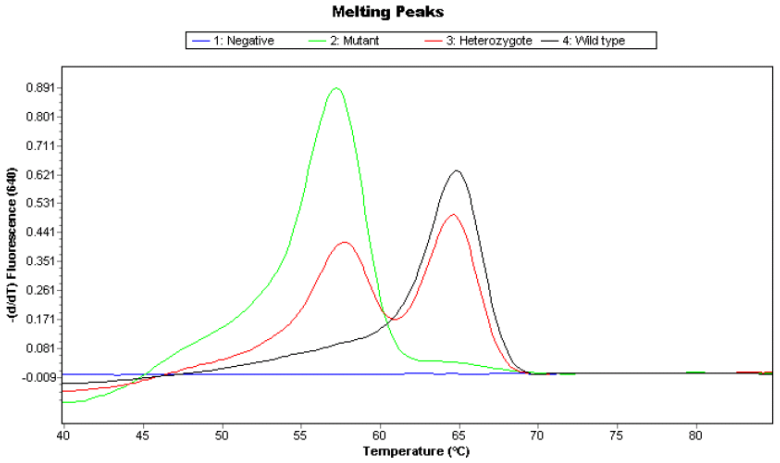

Fig. 4: Control sample melting peak for IL6 -174C mutant

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Results and conclusions

- **25%** of schistosomiasis haematobia infected patients are carriers of the inactivated allele CYP2D6*5 (frequency of allele in an healthy population **5%** (Gaedigk et al, 1991)).

- **6.25%** of patients infected with *S. haematobium* have the IL6 -174C mutant. (frequency of this variant in an healthy population **0.4%** (Fishman et al, J Clin Invest, 1998)).

- **Allele CYP2D6*5 and IL6-174C variant are associated with schistosomiasis haematobia infection and could explain schistosomiasis associated cancer and infertility.**

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