Retrovirology



Poster presentation



# P11-06. Intravaginal administration of HIV-1ZM96 gp140 augments systemic and mucosal antibody responses following systemic priming with adjuvanted protein

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## Background

Vaccine-mediated prevention of primary infection with HIV likely requires the sustained production of antibody at mucosal portals of entry. We determined the dynamics of systemic and mucosal antibody production in macaques following a novel approach of repeat mucosal immunisation by delivery of trimeric recombinant HIV-1<ZM96> clade C gp140 in a gel formulated for vaginal delivery either alone or in combination with systemic immunisation via the intramuscular route using adjuvanted gp 140.

## Methods

Cynomolgus macaques received either 3 rounds of repeat intravaginal (ivag) immunisation with gp140 formulated in Carbopol® 974P polymer gel, followed by a single intramuscular (im) immunisation with 100 μg gp140 in GSK Biologicals AS01b adjuvant (Group A); a single im immunisation alone (Group B), a single im immunisation followed by one round of ivag immunisation (Group C); or 3 im immunisations followed by one round of ivag immunisation (Group D). Serum, vaginal and cervical secretions were analysed for specific and total antibody by ELISA. Virus neutralising activity was assayed with heterologous clade C, HIV-1cm9. Tissue resident cells were analysed for specific IgG and IgA antibody production by ELISpot.

## Results

Two of 4 animals in Group A made IgG and IgA antibody responses following multiple rounds of ivag immunisation that were subsequently boosted by im immunisation. No evidence of an anamnestic serum antibody response was seen in the other two animals, although anti-gp140 IgG secreting cells were detected in the iliac lymph nodes. In contrast, a single im immunisation primed IgG and IgA responses that were boosted by a single round of ivag immunisation (Group C), whereas; ivag immunisation appeared not to augment antibody responses following 3 im immunisations. Virus neutralising activity was detected in serum ranging in titre from 16 to 269.

## Conclusion

Generation of vaginal antibody against HIV gp140 following ivag administration is augmented by low-level systemic priming.