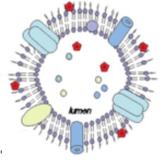


Christine S. Rollier<sup>1</sup>, Christina Dold<sup>1</sup>, Leanne Marsay<sup>1</sup>, Aline Linder<sup>1</sup>, Christopher A Green<sup>1</sup>, Manish Sadarangani<sup>1</sup>, Gunnstein Norheim<sup>2</sup>, Jeremy P Derrick<sup>3</sup>, Ian M Feavers<sup>4</sup>, Martin C J Maiden<sup>5</sup>, Andrew J Pollard<sup>1</sup>

<sup>1</sup>Oxford Vaccine Group, University of Oxford and the NIHR Oxford Biomedical Research Centre, Oxford, UK; <sup>2</sup>Norwegian Institute of Public Health, Oslo, Norway. <sup>3</sup>School of Biological Sciences, The University of Manchester, UK. <sup>4</sup>National Institute for Biological Standards and Control, Potters Bar, UK. <sup>5</sup>Department of Zoology, University of Oxford, UK.

## 1. Introduction: Outer membrane vesicles (OMV)

- Vaccines and vaccine component for group B meningococcus & vaccine platform
- Group B meningococcus: protective immune response strain specific to Porin A (PorA)
- B cell responses to Pora (dominant) versus other (minor) antigens in OMVs?



## 2. Methods: phase I clinical trial of investigational vaccine MenPF

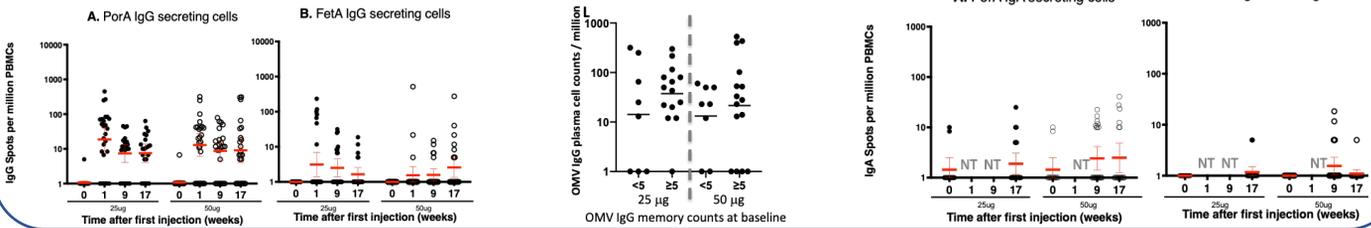
- OMVs from strain genetically modified to constitutively express 8% of iron-regulated antigen FetA
- Participants received 25 or 50 µg, three injections 8 weeks apart (weeks 0, 8 and 16)
- Induced serum bactericidal (SBA) responses to PorA and FetA (Marsay et al., 2015)
- Plasma and memory B cell responses to both antigens? Relation to SBA response?

## 3. Results: Plasma cell responses :

- induced by OMV vaccination

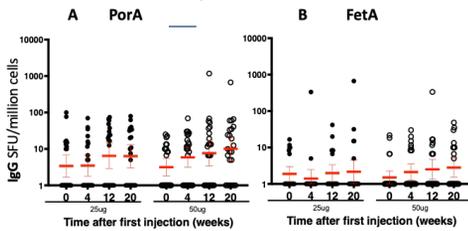
- Higher response rate in participants with memory B cells at baseline

- OMV immunization does not induce IgA plasma cell responses

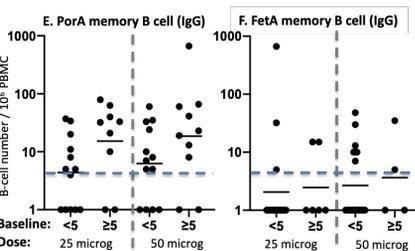


## 4. Results : Memory IgG B cell responses

- No clear increase against PorA nor FetA as compared with prior to vaccination

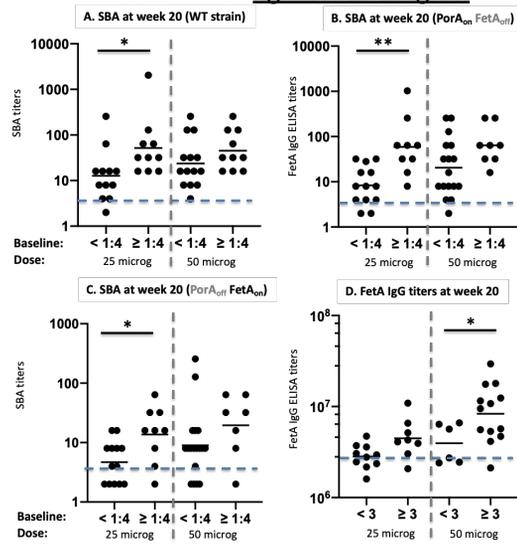


- Marked increase in participants with memory B cell response prior to vaccination against PorA



## 5. Results: antibody and SBA responses

- Higher in participants with responses prior to vaccination against all antigens



## 6. Conclusions

- OMV immunization poor inducer of memory B cell response (persistence?)
- Stronger B cell and SBA responses in participants with pre-existing responses
- Carriage primes responses to minor antigens, which can be boosted by OMV vaccines

Acknowledgements: Welcome Trust translational award, Innovation Schemes (082102/Z/07/A and 091634/Z/10/Z), and the NIHR Oxford Biomedical Research Centre, Oxford, United Kingdom, Vaccine theme.