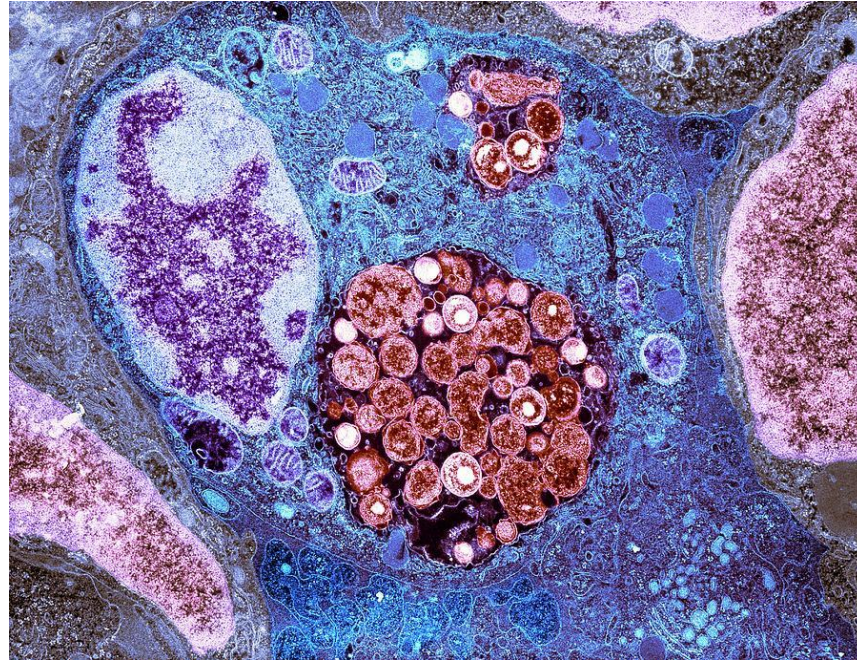


Developing in vitro assays to measure antibody mediated protection against intracellular bacteria

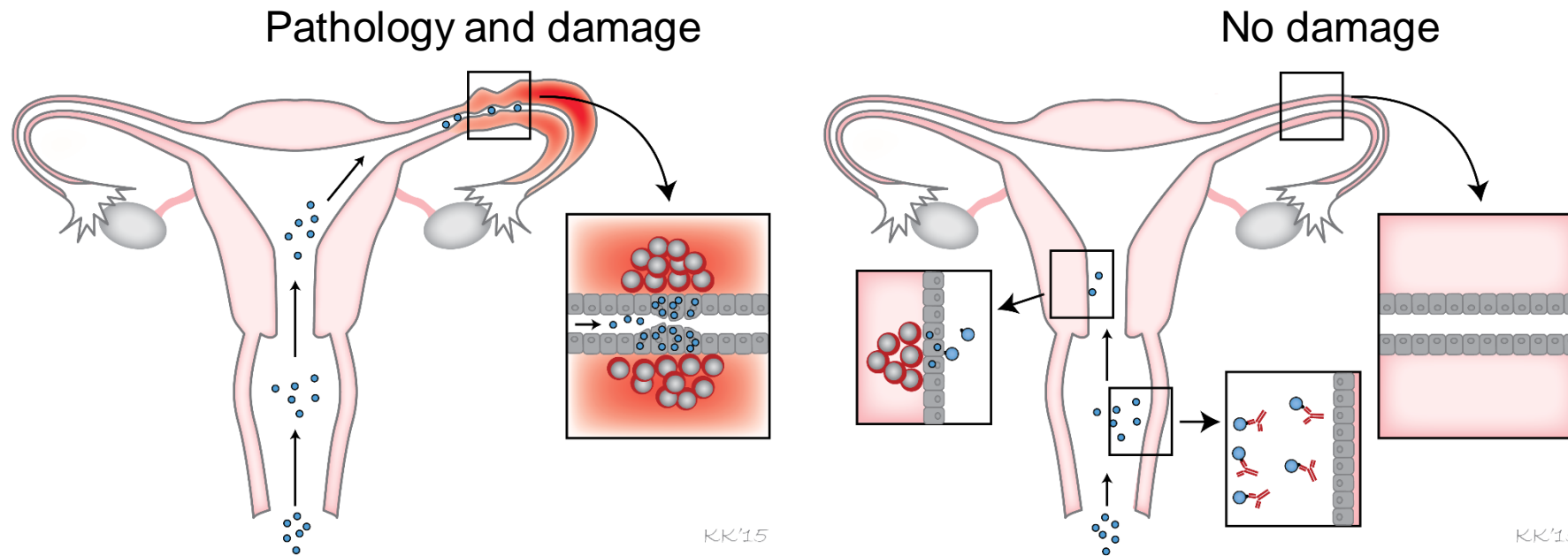
Senior Scientist Jes Dietrich,
Dept. of Infectious Disease Immunology,
Division of Vaccine,
Statens Serum Institut, Artillerivej 5,
DK- 2300 Copenhagen S



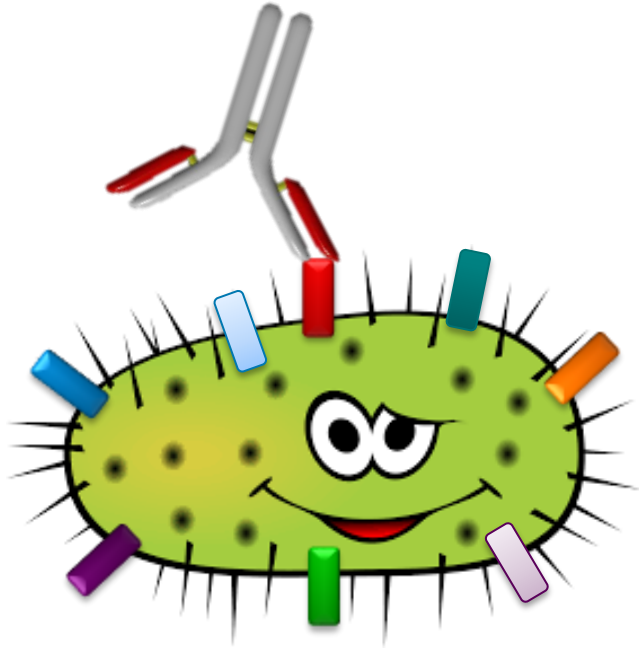
Chlamydia, caused by infection with *Chlamydia trachomatis*, is **the most common sexually transmitted disease in Europe**. More than **100 million chlamydial** infections are estimated annually worldwide. Chlamydia infection can cause serious damage to the female reproductive organs and lead to infertility.



A vaccine should induce protective antibodies, that prevent pathology and immune-mediated damage

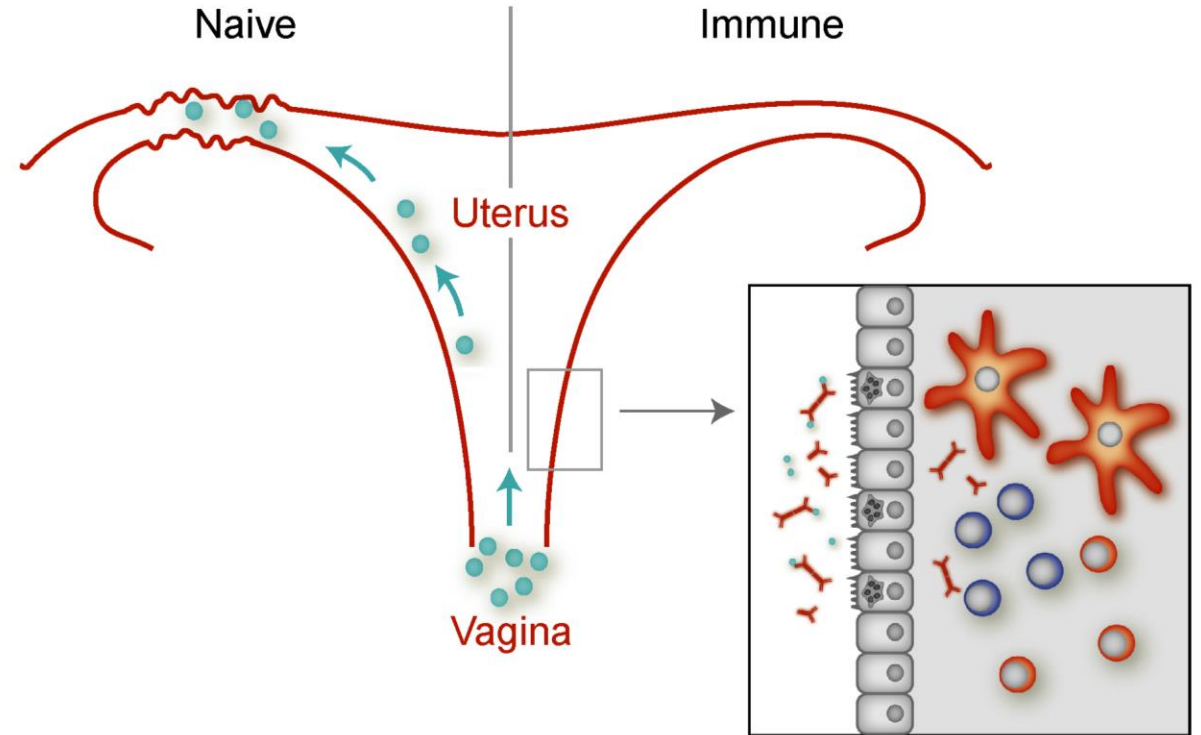


WHAT SHOULD THE ANTIBODY BIND TO?



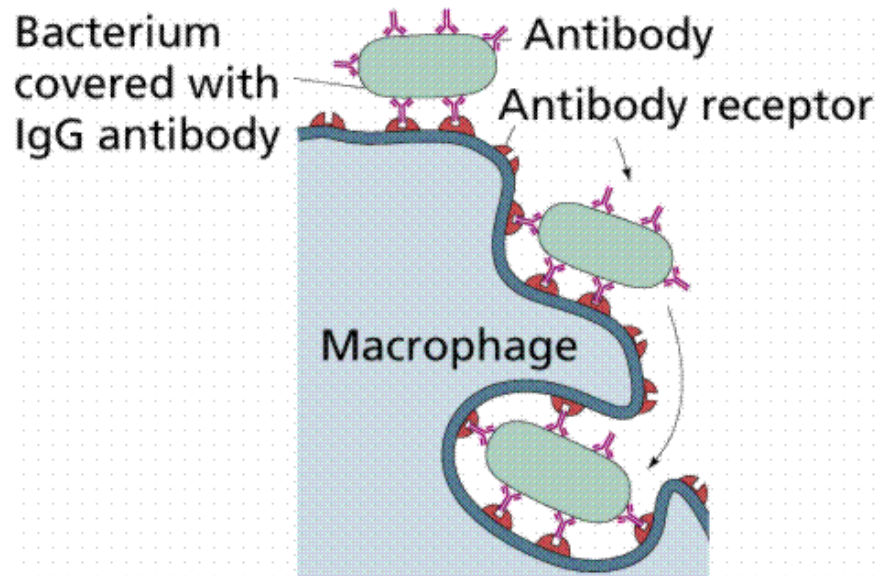
What should the antibody bind to?

How can we generate and test all the antibodies?

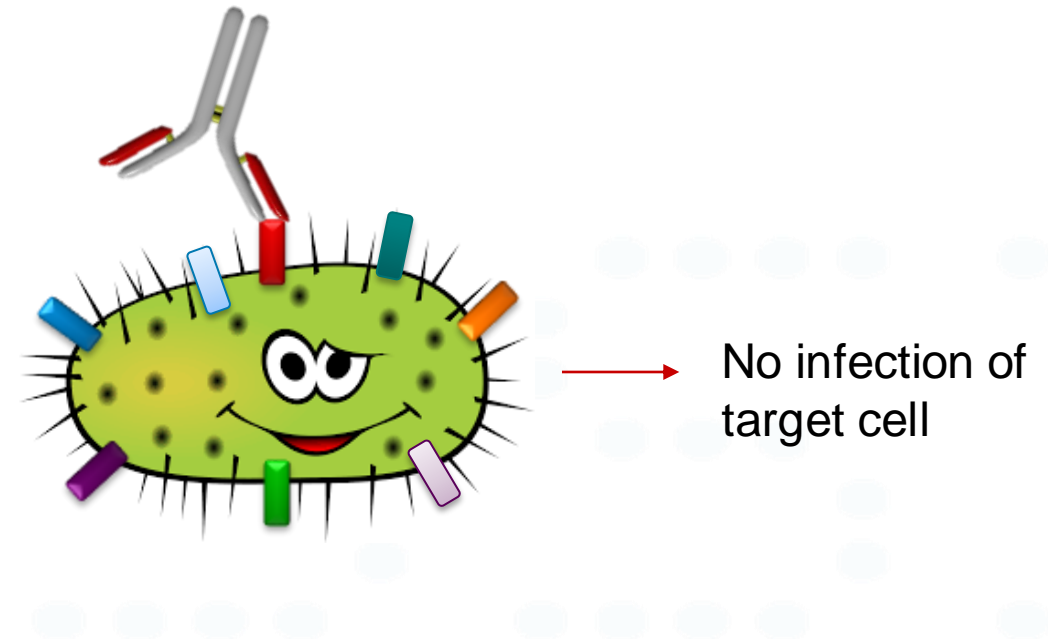


The aim for the project is to develop two *in vitro* assays that can test if vaccine induced antibodies can mediate a protective function. The goal is that these assays will replace/reduce the animal experiments normally required to accomplish this.

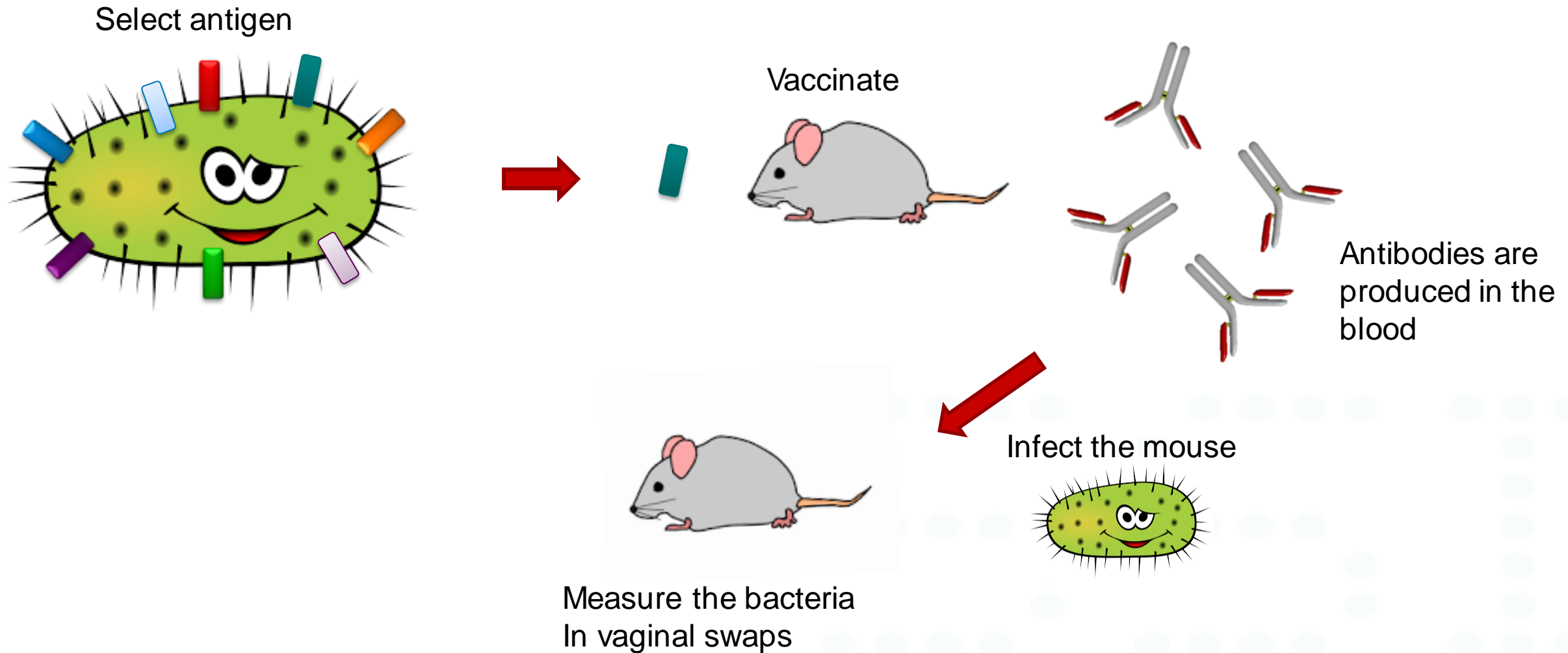
Induction of phagocytosis



Neutralization

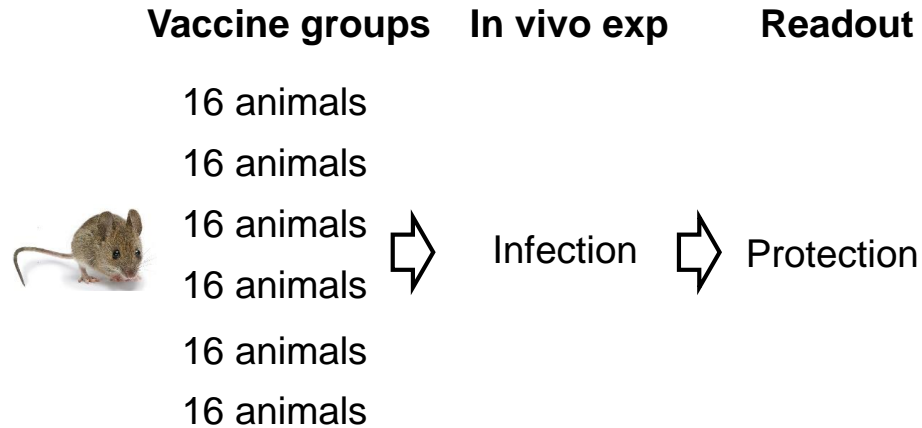


CHLAMYDIA TRACHOMATIS – EXPERIMENTS IN MICE

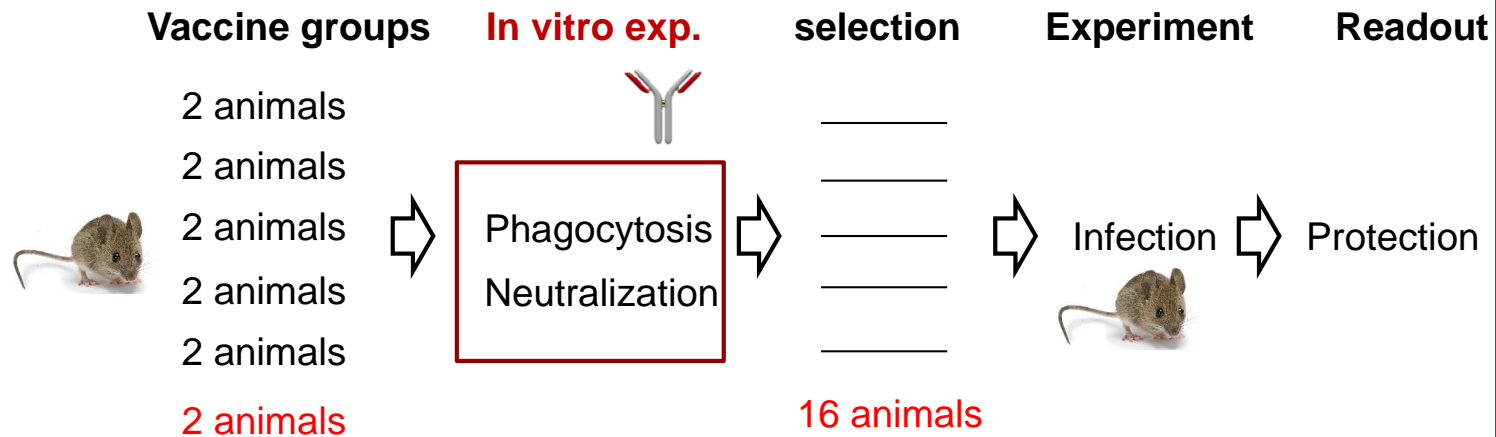


A TYPICAL MOUSE EXPERIMENT

Old strategy

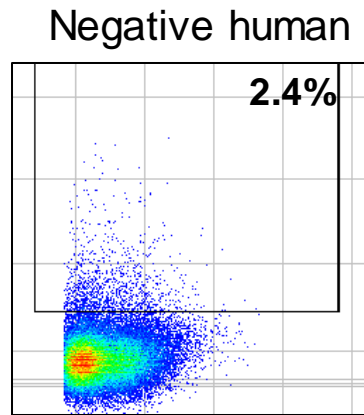
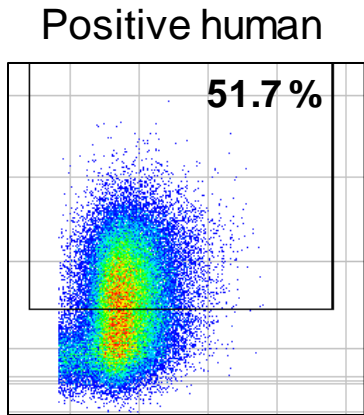


New strategy

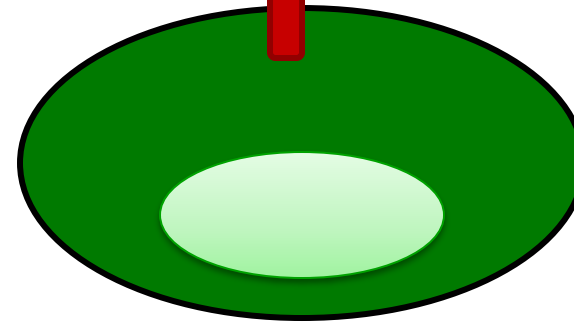
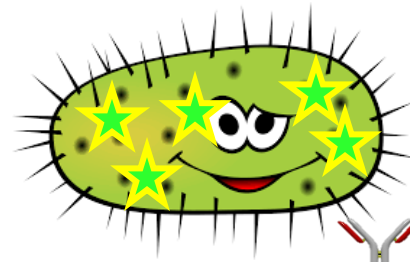
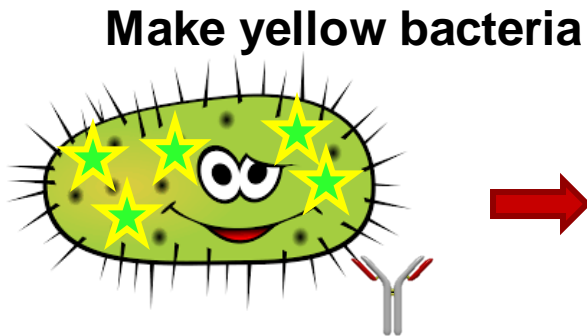


The new strategy reduced
the number of animals by
> 70%

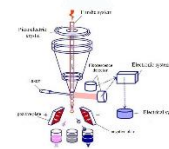
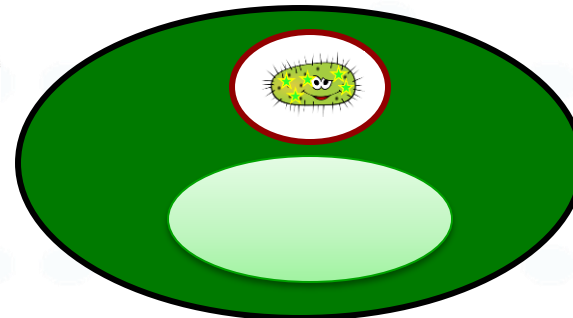
FACS BASED PHAGOCYTOSIS ASSAY



Collect Ab
And coat bacteria



Neutrophil

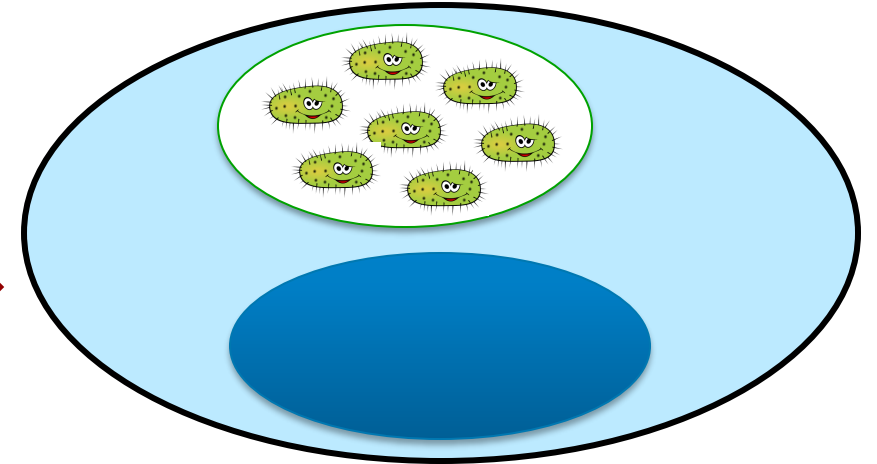
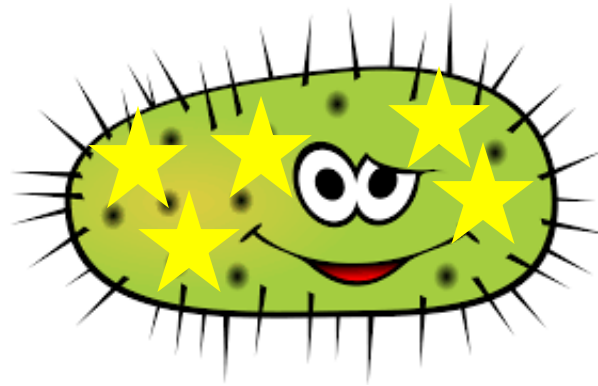


FACS BASED NEUTRALIZATION ASSAY

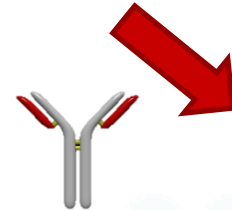


Vaccinate and collect Ab

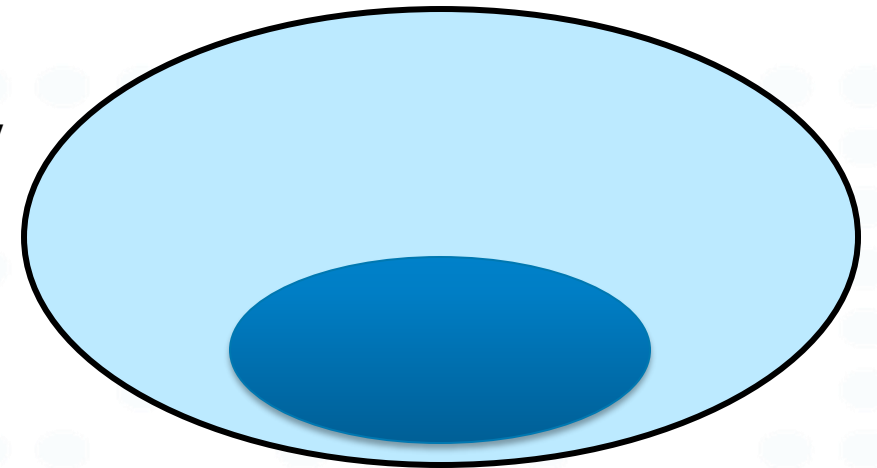
Add Ab to bacteria



Target epithelial cell

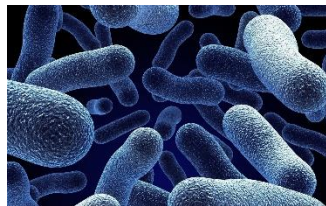


Neutralizing antibody



50.000 cell/sec

Developing in vitro assays to measure antibody mediated protection against intracellular bacteria



Danmarks 3R-Center
RRR

