Fra Background:

In our previous study we have focused on the impact of the various antibiotic treatments on host innate immune response and conjugative R plasmids transfer gene activities by using an experimental zebrafish infection-and-treatment model [5]. The results motivated us to investigate similar processes in a mammalian model. We have therefore assessed the expression of pathogenic ETEC borne pRAS1 transfer genes *in vivo* in piglets, in response to antibiotic, probiotic and Non-steroidal Anti-inflammatory Drug (NSAID) treatments, while simultaneously monitoring selected blood serum proteins.

Results

Clinical signs and re-isolation of *E. coli*

All the *E. coli* inoculated piglets showed loss or reduction of appetite, acute watery or mucoid-diarrhea, a pale, yellowish colour, increased respiratory activity and reduced movement within 6-8 hours after challenging. The uninfected piglets remained apparently healthy, with normal vigour, appetite and skin colour, and showed no diarrhea.

Macroscopically inflammation of the intestinal mucosa was recorded in both the placebo treated pig and groups treated with ineffective antibiotics, but not with the control group. On the serosa side of the jejunum it was observed severe hyperemia with filled blood vessels and the intestinal wall appeared edematous including firm and thickened to palpate in piglets from all infected groups not given effective treatment. However, also infected piglets from groups that were treated with effective antibiotics had a mild hyperemia visible from the serosa side of the jejunum and also a clear edematous intestinal wall compared to the uninfected control group.

Histopathology and cultivation from the intestinal content.