P013 The role of defensins in controlling *Salmonella* infection in chickens.

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Poultry are the major source of *Salmonella enterica* infections for humans in Europe. Salmonellosis in chickens can be induced either by invasive *Salmonella* such as *S.* Typhimurium or restricted host range serotypes such as *S.* Gallinarum. In this study, the expression of Gallinacins 1α, 2, 3 and 9 in line N and line 6_1 chickens, both resistant to salmonellosis but responding differently to *Salmonella* colonisation, have been analysed using real-time RT-PCR with Taqman analysis. Gallinacins are the chicken's β-defensins, which are expressed by heterophils (the avian neutrophil equivalent) and some epithelial cells.
S. Typhimurium persists in the caeca of line N chickens only. Gallinacin 3 was constitutively expressed in caecal tonsils and Gallinacin 9 in caecal tonsils of line 6_1 chickens. However, both Gallinacins were not expressed in 7 weeks old line N chickens. These results suggest that these Gallinacins might play a role in the differential responses to *S.* Typhimurium colonisation observed in the two lines.
S. Gallinarum persists in the caeca of both lines. However, *S.* Gallinarum suppresses Gallinacin 3 expression in caecal tonsils of line N chickens and in some line 6_1 chickens soon after infection. While, Gallinacin 9 expression is up-regulated in both lines. Therefore, S. Gallinarum may suppress Gallinacin 3 expression allowing it to persist in the chicken's gut.