Role of γδ T cells in protecting chickens against *Salmonella enterica* serovar Enteritidis (SE) infections

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Avian γδ T lymphocytes are frequently found in the intestinal mucosa and thought to be crucial in protecting chickens from *Salmonella* infections. To unravel the role of γδ T cells in the avian immune response, wildtype (WT) and γδ T cell knockout (KO) chickens were infected orally with SE three days after hatching.
Until 12 days post infection, the *Salmonella* load in liver and caecal content, the absolute numbers of γδ and αß T cells subsets in blood and the cytokine transcription levels in caecum of the chickens were determined.
In the course of infection, the number of SE in liver and caecal content were equal in WT and KO chickens. In blood of both genotypes, we found an increase of monocytes upon SE infection. Contrary to the detected enhanced number of CD8αα+ γδ T cells in blood of WT chickens, an elevated number of CD8αα++ αß T cells was observed in KO chickens. Additionally, we identified an increase of CD25-expressing CD8αα++ γδ T cells in WT and CD8αα++ αß T cells in KO chickens.
In conclusion, KO chickens might have compensated the immune functions normally fulfilled by CD8αα-expressing γδ T cells by enhancing their equivalent αß T cell counterparts.

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