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Innate immune signalling of the zebrafish embryo

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Stellingen

behorende bij het proefschrift
'Innate immune signalling of the zebrafish embryo'

1. The innate immune response to *Salmonella typhimurium* is mediated both via Myd88-dependent and independent routes in zebrafish embryos (Chapters 2 and 3 of this thesis)
2. Most of the observed differences of the immune response against bacteria in zebrafish embryos and human cell cultures can be explained by the difference between *in vivo* and *in vitro* analysis (Chapter 3, Jenner and Young, 2005, Nat Rev Microbiol)
3. A key player in innate immunity, matrix metalloproteinase 9, functions downstream of Toll-like receptor 5 and Myd88-dependent signalling (Chapter 3)
4. The transcriptional response to *Salmonella typhimurium* infection in zebrafish embryos indicates a rapid negative feedback control of the Toll-like receptor signalling pathway (Chapter 3)
5. The use of the zebrafish embryo model has made it possible to dissect the diverse functions of Traf6 as a regulator of early embryonic development and as a positive and negative regulator of a large set of genes involved in the innate immune response (Chapter 4 and 5)
6. The zebrafish embryo is a more useful model than the mouse for the study of the progression of tuberculosis in the context of the innate immune system (Tobin et al. 2010, Cell; Volkman et al., 2010, Science)
7. Based on in situ colocalization with cell-specific marker genes, the lysosome C gene (*lyz*) is not expressed in macrophages as suggested by reports on *lyz*-GFP transgenic lines (Meijer et al., 2008, Dev Comp Immunol; Zhang et al., 2008, J Immunol; Hall et al., 2007, BMC Dev Biol)
8. The zebrafish research using large-scale genomic tools such as microarrays and RNA deep sequencing technology would greatly benefit from finalizing and standardizing the annotation of the zebrafish genome

9. The vertebrate innate and adaptive immune system are two sides of the same coin
10. High-throughput compound screens in zebrafish embryo models fill the gap between cell-based screens and testing in rodent models and have great potential for accelerating the drug development process
11. While having kids can be sometimes quite exhausting, it is highly rewarding and helps to put everything else into perspective.
12. Der Bau neuer Atommeiler wird nicht zur Lösung der Klimaproblematik beitragen jedoch folgende Generationen mit dem ungelösten Problem der Endlagerung Nuklearen Abfalls belasten