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Universiteit Leiden



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**Title:** Systems vaccinology : molecular signatures of immunity to Bordetella pertussis

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# Stellingen

behorende bij het proefschrift

## Systems vaccinology Molecular signatures of immunity to *Bordetella pertussis*

1. Mucosal immunity provides an important contribution in protection against pertussis  
*This thesis*
2. *Bordetella pertussis* outer membrane vesicles are a promising vaccine candidate.  
*This thesis*
3. Vaccine composition and route of administration determine the type of pertussis immunity.  
*This thesis*
4. Detailed insight into vaccine-induced immune responses by systems vaccinology provide an advantage for vaccine licensing.  
*This thesis*
5. Even though *Bordetella pertussis* is a strictly mucosal pathogen, mucosal immunity against pertussis is under-addressed.  
*Live Attenuated B. pertussis as a Single-Dose Nasal Vaccine against Whooping Cough*  
*Mielcarek et al., PLoS Pathogens 2006*
6. “The successful application of systems vaccinology requires a close trans-disciplinary collaboration between biologists and bioinformaticians.”  
*Systems vaccinology*  
*Pulendran et al., Immunity 2010*

7. Robust or productive systemic immunity does not necessarily correlate with effective protection at site of pathogen entry.

*Location, location, location: tissue-specific regulation of immune responses*  
Hu & Pasare, *Journal of Leukocyte Biology* 2013

8. “We are all conscious today that we are drowning in a sea of data and starving for knowledge.”

*Nobel laureate - Nature’s gift to science*  
Sydney Brenner, 2002

9. “If you think well, you cook well.”

*Ferran Adrià*

10. “The size of your dreams must always exceed your current capacity to achieve them.”

*Ellen Johnson Sirleaf*

11. “Eat, drink and be merry for tomorrow may be your last day.”

*Unknown*

12. Systems vaccinology strengthens when the bonds in a network are tight.