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The Netherlands

## **Illuminating host defence against mycobacterial infection: interactions with autophagy and LC3-associated phagocytosis**

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### **Citation**

Muñoz Sánchez, S. (2026, February 3). *Illuminating host defence against mycobacterial infection: interactions with autophagy and LC3-associated phagocytosis*. Retrieved from <https://hdl.handle.net/1887/4288590>

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# Stellingen

## Behorende bij het proefschrift

Illuminating Host Defence against Mycobacterial Infection:  
Interactions with Autophagy and LC3-Associated Phagocytosis

1. Dynamic and heterogeneous responses of LC3 during in vivo infection with *Mycobacterium marinum* highlight the importance of dissecting the complexity of autophagy mechanisms in antimycobacterial immunity (This thesis, Chapter 3).
2. PIKfyve inhibition impairs the maturation of *Mycobacterium marinum*-containing vesicles in the autophagy pathway (This thesis, Chapter 4).
3. Rubcn confers protection during the early stages of *Mycobacterium marinum* infection in the zebrafish model (This thesis, Chapter 5).
4. The host protective effect of Rubcn against *Mycobacterium marinum* depends on LC3-associated phagocytosis rather than autophagy (This thesis, Chapter 5).
5. Reliable host-pathogen insights obtained through 3D image analysis depend on balancing precision, efficiency, and biological relevance.
6. Computational methods are indispensable in modern research, but only the biologist can determine that a segmented object accurately reflects its biological counterpart.
7. Ongoing research reveals that biological pathways, once thought to function independently, are interconnected in ways we are only beginning to understand.
8. The broad effects of autophagy on biological processes must be considered when proposing autophagy as a target for host-directed therapy.
9. In microscopy, as in biology, we see only what we choose to illuminate.
10. Knowledge advances not through certainty, but through the passion to question and the humility to learn.

Salomé Muñoz Sánchez  
Leiden, 3 februari 2026