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Towards a mechanistic understanding of nanoparticle behavior using zebrafish

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Towards a Mechanistic Understanding of Nanoparticle Behavior
using Zebrafish

M. Gabriela Arias Alpízar
Ph.D. Thesis, Leiden University, November 2021

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About the cover: In front, the caudal region of the zebrafish containing lipid nanoparticles (LNPs, cyan) and expressing GFP (yellow) in the scavenging endothelial cells after 24 h of *i.v.* administration. Macrophages in magenta. In the back, tissue exposed macrophages (magenta) containing LNPs (cyan) and expressing GFP (yellow).

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*using Zebrafish***

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Door

María Gabriela Arias Alpízar
geboren te San José, Costa Rica
op 22 april 1984

*“Para empezar un gran proyecto, hace falta valentía.
Para terminar un gran proyecto, hace falta perseverancia”*

To Valeria, Bernal, my parents and Sebastian,
for being an inspiration.

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