

A milky way towards a more sustainable nutrition

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Context

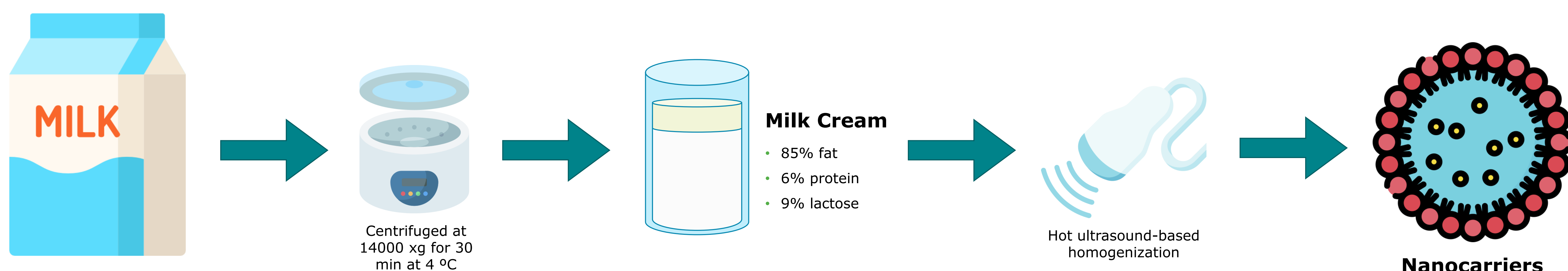
The search for healthier and more nutritious food products along with an increased concern with their origin and sustainability has been leading to the development of nutraceuticals namely with antihypertensive, antioxidant or antimicrobial effects. To ensure their sustainability both their constituents and production method should be responsible and eco-friendly.



Objective

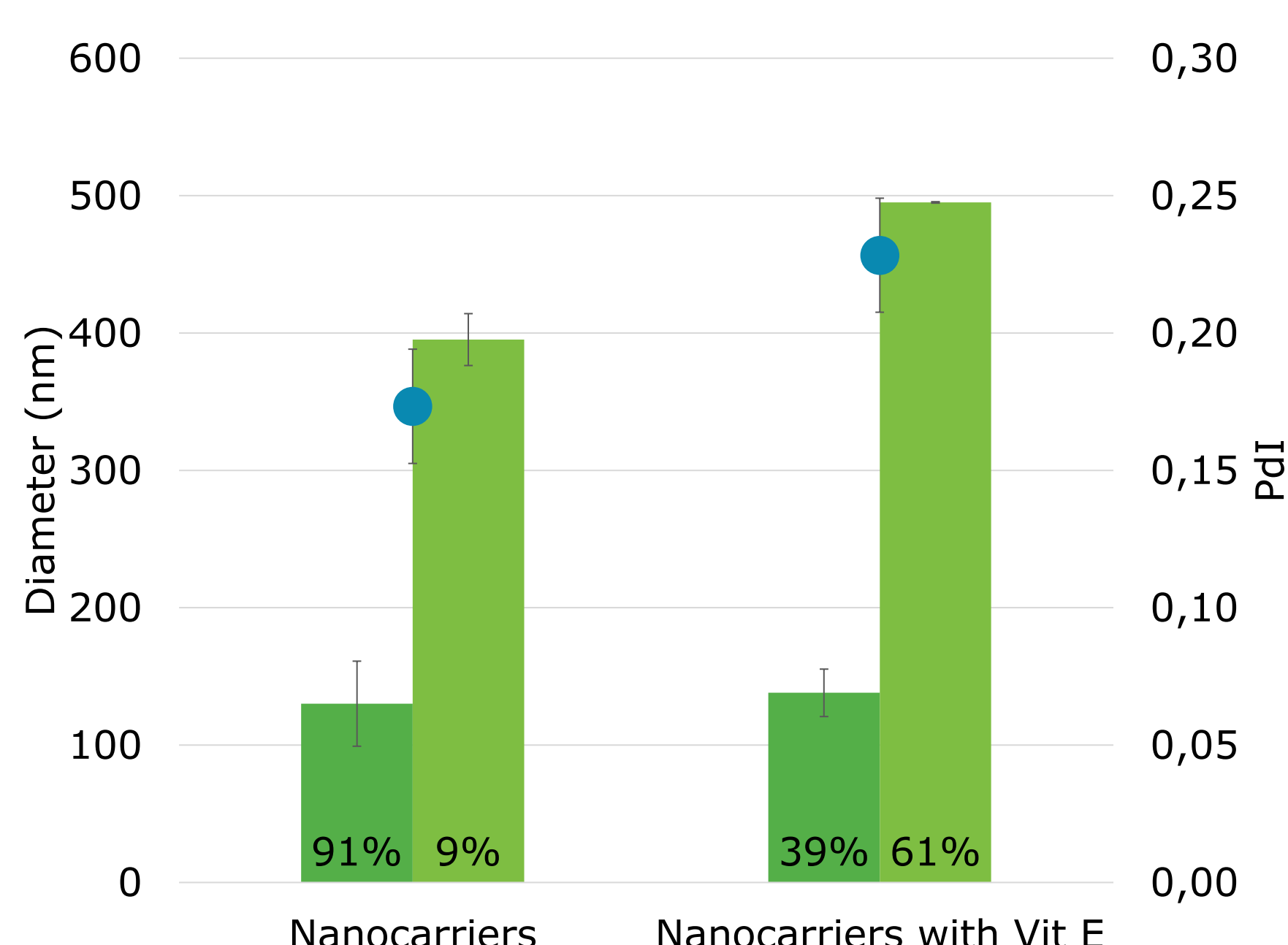
In this work, vitamin E-loaded milk fat-derived nanocarriers were produced using organic solvent-free methods already used in food technology, envisioning the development of antioxidative food supplements while bringing added value to an already existing dairy product. Thus, contributing directly towards the United Nations' Sustainable Development Goals 2, 3 and 12.

Nanocarrier production

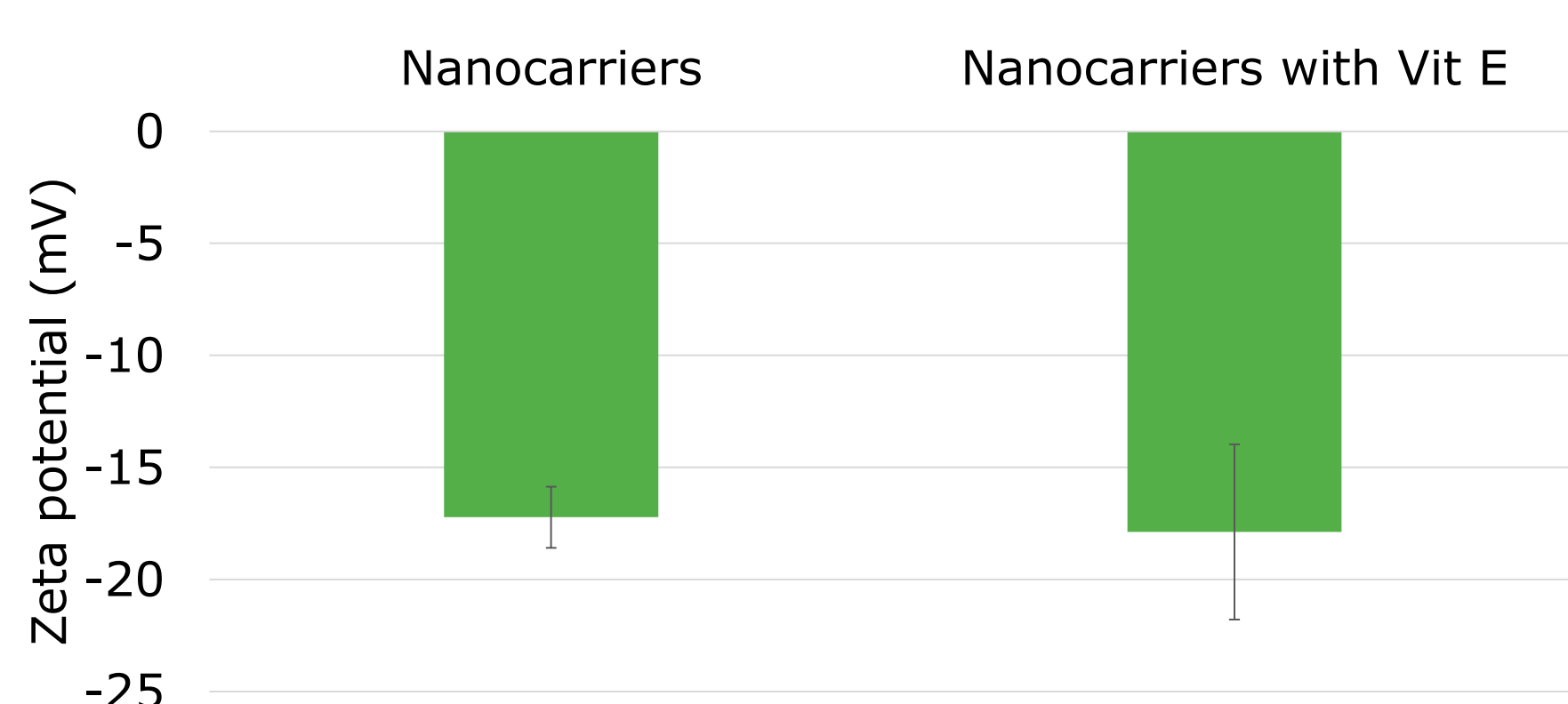


Results

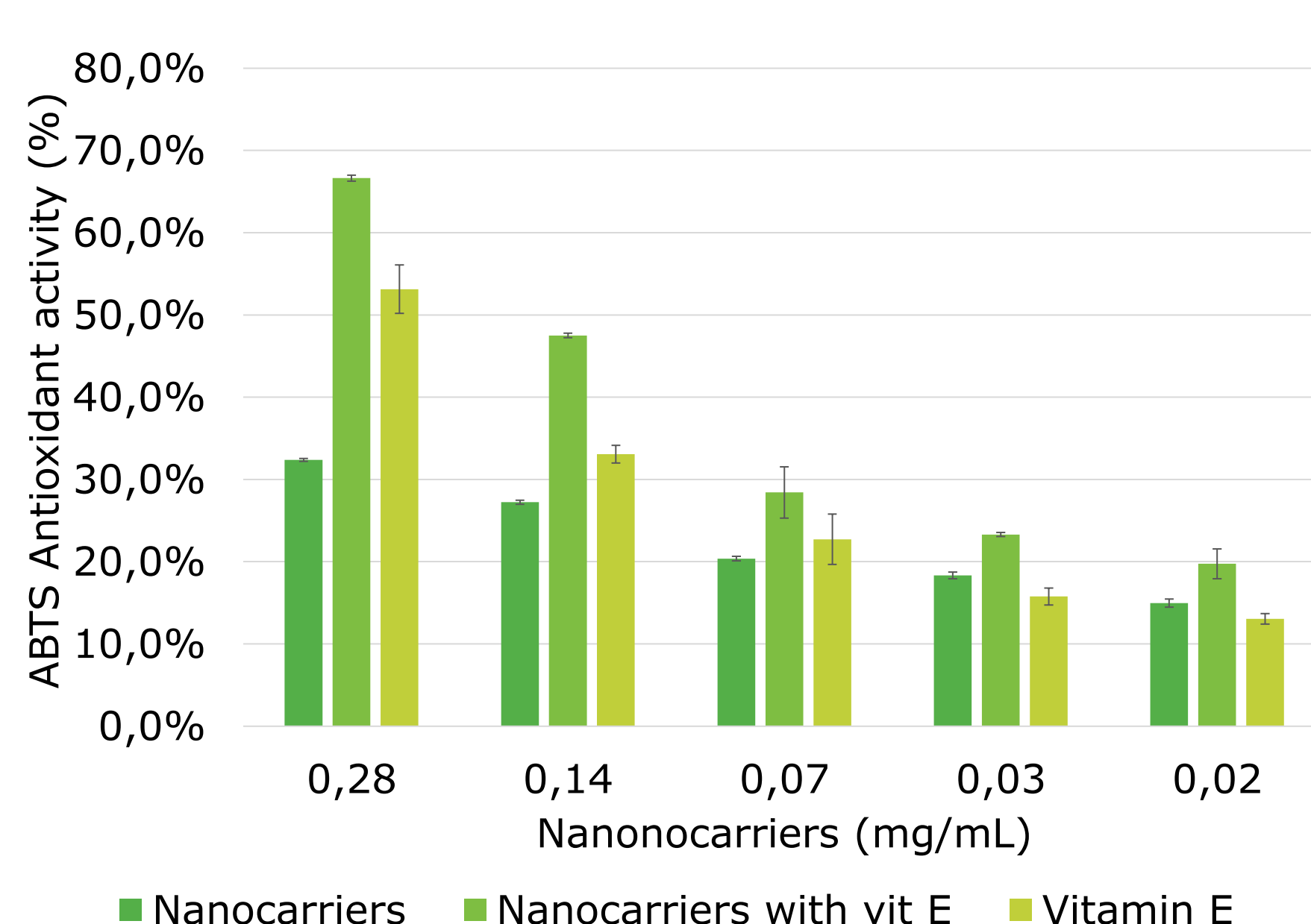
Dynamic light scattering



The nanocarriers presented two clearly distinct populations, however both diameters are optimal for intestinal absorption.



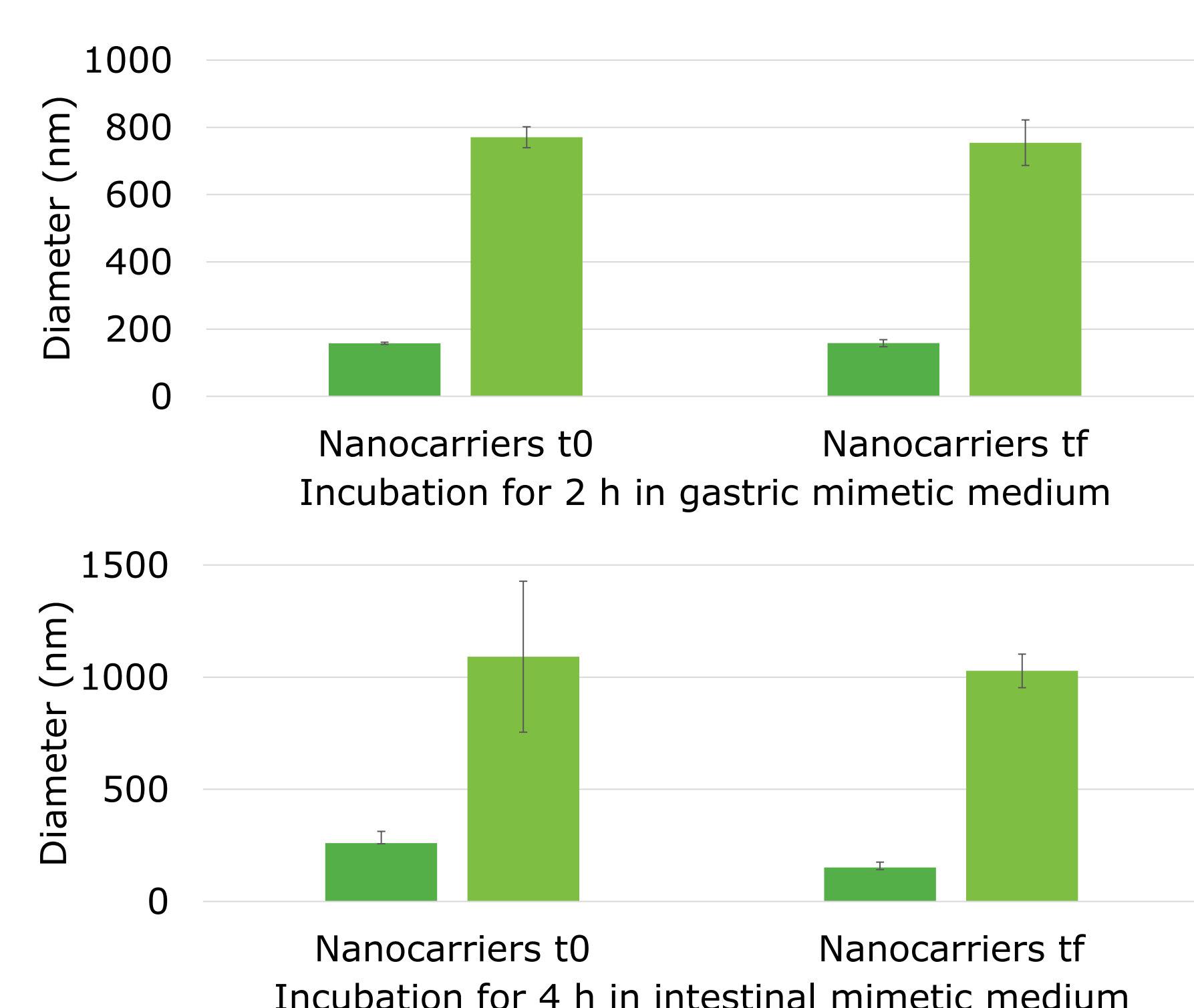
Antioxidant activity



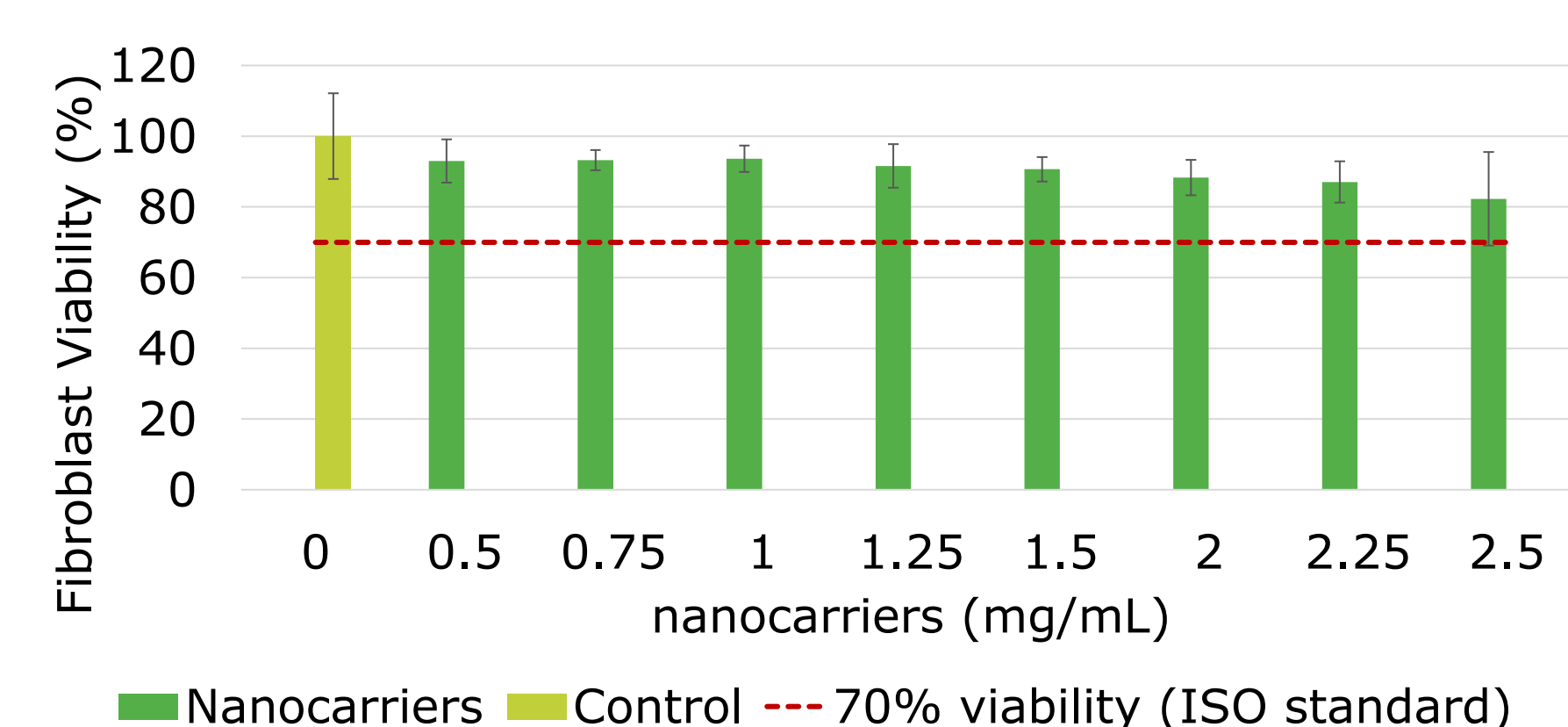
Conclusions

- ✓ Nanocarriers exhibit good physical properties with optimal diameters for intestinal absorption
- ✓ Nanocarriers presented good gastrointestinal resistance and *in vitro* biocompatibility
- ✓ Nanocarriers possessed inherent antioxidant activity

Biological resistance and compatibility



The gastrointestinal biomimetic media followed INFOGEST guidelines and the cell line used was L929 fibroblasts.



Acknowledgments:

João Albuquerque thanks *Fundação para a Ciência e Tecnologia* and *Ministério da Ciência, Tecnologia e Ensino superior (FCT/MCTES)* for the financial support within the "NanoProMilk" project (PTDC/BAA-AGR/4923/2021). This work received support and help from FCT/MCTES (LA/P/0008/2020 DOI 10.54499/LA/P/0008/2020, UIDP/50006/2020 DOI 10.54499/UIDP/50006/2020 and UIDB/50006/2020 DOI 10.54499/UIDB/50006/2020), through national funds and through the project PTDC/BAA-AGR/4923/2021 'NanoProMilk'.