

# Stable nanocarriers for the delivery of nucleic acid therapeutics

M. Köber

*Institut de Ciència de Materials de Barcelona (ICMAB-CSIC)*  
CIBER-BBN, Networking Centre on Bioengineering, Biomaterials and Nanomedicine

[mkober@icmab.es](mailto:mkober@icmab.es)

RNA-based therapies are emerging as promising alternative for the treatment of several diseases that currently have no cure, such as certain aggressive tumors. The main hurdles for these therapies to reach clinical practice are related to delivery, e.g. due to a poor biodistribution or problems related to nanocarrier stability and scaled-up production, which is why so far no miRNA therapeutics have reached clinical practice for cancer treatment. In our group we have developed a particularly stable lipid nanocarrier that is produced with a scalable production process based on compressed CO<sub>2</sub>. I will discuss the engineering principles behind these nanocarriers and their performance for the delivery of small RNAs in different biologically relevant models. This nanocarrier holds promise for the delivery of different nucleic acids, and can be easily tuned to optimize efficacy and biodistribution in specific therapeutic scenarios.