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Target-Specific Nanoparticles for Fighting Diseases

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Nanoparticles have been commercially used since 1995 as drug delivery systems (mainly for cancer treatment). However, these structures are not able to selectively target diseased cells and tissues making their treatment efficiency somehow random. The protein corona (non-specific protein adsorption on nanoparticles surface) is likely the main off-target reason that hinders the designed nanoparticles surface while inducing body responses to eliminate these particles. Within this context, my group has developed strategies where the protein corona effect can be suppressed while the targetability of the system can be kept, opening new possibilities in the nanomedicine field. We have already described that by avoiding protein corona formation the chemical identity of the particles is preserved. Finally, I will describe how nanoparticles might impact future medical treatments based on non-toxic and targetable particles without inducing secondary undesirable effects.

References:
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