

## A preliminary “in vivo” study to evaluate the effects of a new drug delivery method in Chronic lung allograft dysfunction (CLAD)

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Chronic lung allograft dysfunction (CLAD) represents the main obstacle to patient survival after lung transplantation [1]. Previous “*in vitro*” results have shown that innovative biocompatible nanoparticles (NP) loaded with the inhibitor everolimus [2] and functionalized with anti CD44 MoAb, are able to stop proliferation of mesenchymal cells obtained from lung transplant patients, and responsible of CLAD [3]. In this study we tested “*in vivo*” the potentiality of these nanoparticles to reach lungs and eventually to block the fibrotic process. Two different approaches were used to deliver 50µg of labeled NP in mice, direct instillation and aerosol spray. Preliminary results demonstrate that the former method caused serious pulmonary edema followed by rapid death of mice, while the second seems to be more feasible, permitting a continued treatment well-tolerated by mice and consequently more similar to an eventual treatment on patients.

### References

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### Key words

Nanoparticles, fibrotic process, drug delivery, aerosol spray.